

Organic certification schemes: managerial skills and associated costs



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**Synthesis report from case studies
in the rice and vegetable sectors**

by

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Contents

ACKNOWLEDGEMENTS	vii
PREFACE	ix
ACRONYMS AND ABBREVIATIONS	xi
EXECUTIVE SUMMARY	xiii
1. INTRODUCTION	1
2. METHODOLOGY	3
3. GENERAL FEATURES OF THE ORGANIC SECTOR IN THE CASE STUDIES	7
3.1 PRODUCTION AND MARKET	7
3.2 ENABLING ENVIRONMENT AND INSTITUTIONS	12
4. MARKETING STRATEGIES AND ORGANIZATIONAL STRUCTURES	19
4.1 CASE STUDIES ON ORGANIC FRAGRANT RICE	20
4.2 CASE STUDIES ON ORGANIC FRUITS AND VEGETABLES	23
4.3 SOME CONCLUDING REMARKS	25
5. CERTIFICATION SCHEMES AND QUALITY ASSURANCE SYSTEM	27
5.1 THIRD PARTY CERTIFICATION – THE INTERNATIONALLY RECOGNIZED CERTIFICATION SCHEME	28
5.2 THIRD PARTY CERTIFICATION UNDER THE INTERNAL CONTROL SYSTEM (ICS)	31
5.3 PARTICIPATORY CERTIFICATION OR THE PARTICIPATORY GUARANTEE SYSTEM (PGS)	33
6. MANAGERIAL SKILLS AND COSTS AT THE ORGANIZATION LEVEL	37
6.1 MANAGERIAL SKILLS	37
6.2 CALCULATING THE COSTS ASSOCIATED WITH THE SUPPLY OF CERTIFIED ORGANIC PRODUCTS	41
6.3 COST AND BENEFIT ANALYSIS AT THE ORGANIZATION LEVEL	44
7. MANAGERIAL SKILLS AND CERTIFICATION COSTS AT THE FARM LEVEL	47
7.1 PROFILE OF PRODUCERS	47
7.2 MANAGERIAL SKILLS	47
7.3 COSTS AND BENEFITS AT THE FARM LEVEL	52

8. CONCLUSIONS AND RECOMMENDATIONS	59
8.1 RECOMMENDATIONS	63
9. REFERENCES	67

Tables

Table 1: Type of policies and institutions involved in organic agriculture	13
Table 2: Comparison of organizational structure in the case studies of Asian organic fragrant rice	22
Table 3: Comparison of organizational structure in the organic certified vegetables in Brazil, Hungary and the Czech Republic case studies	24
Table 4: Custody chain system issues and functions	28
Table 5: Member countries in IAF, countries approved as EU third countries and certification bodies being accredited by IOAS and ISO 65 Guidelines	29
Table 6: Setting-up and ongoing costs for organic certified produce at organization level	43
Table 7: Comparative costs at the organization level (US\$/farmer/year)	45
Table 8: Examples of setting-up and ongoing costs of organic certified produce at the farm level	54
Table 9: Costs structure of the organic certified rice at the farmer level in the case studies (US\$/farmer/year)	55
Table 10: Cost structure of the organic certified vegetables in the case studies (US\$/farmer/year)	56
Table 11: Examples of quantifiable and non-quantifiable benefits at the organization and farmers level	57

Figures

Figure 1: Stakeholders and linkages in the organic food chain	19
Figure 2: Quality assurance system for organic agriculture in the Czech Republic	31
Figure 3: Quality assurance system with Internal Control System – Thailand case studies	32
Figure 4: Quality assurance systems in Brazil including the participatory certification scheme	34

Boxes

Box 1: Supply chain management in organic rice – the Thai and Indian case studies	38
Box 2: ICS in Thai organic rice case studies	38
Box 3: ICS in the Uttaranchal Organic Commodity Board (UOCB)	39
Box 4: Actors in technology development –The Ecovida Network case study	39
Box 5: A training curriculum – lessons from the Thai and Brazilian case studies	40
Box 6: Post-harvest management in organic rice	40
Box 7: Understanding agro-ecosystems	48
Box 8: Fertilizer management	49

Box 9:	Pest management	49
Box 10:	Prevention of external contaminants	50
Box 11:	Post-harvesting activities	50
Box 12:	Record keeping and alternative distribution channels	51
Box 13:	Selling organics	51

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Preface

The boom of organic markets worldwide has created great opportunities and expectations in developing and transition countries for their participation as suppliers. Certified organic produce are seen as an alternative for small-scale farmers to take part in this high-value product market. Premium prices for certified products have been one of the incentives that contribute to the growth of the organic sector while improving the livelihood of smallholder families. However, most smallholders are not certified, preventing their access to international or even national niche markets. The achievement of internationally recognized certification standards and procedures — mostly established by institutions in more developed countries — can require institutional capacity and financial means which are often beyond the reach of many small scale farmers in these countries. The Agricultural Management, Marketing and Finance Service (AGSF), as part of its Regular Programme analysed alternative certification schemes for organic products in order to draw conclusions regarding the institutional support and technological development required for compliance with organic standards.

The paper discusses third party certification, for both individuals and farmer groups, as well as participatory certification. Case studies from Thailand, India, the Czech Republic, Hungary and Brazil engaged in organic rice and organic fruit and vegetable production are examined. Issues analysed include the organizational structure and marketing strategies in the organic supply chain. The paper also discusses the institutional development that is needed to provide business and technical services and establish the organic quality assurance system. Organizational, managerial and business skills required by the lead stakeholders in the organic chain are analysed as well as the costs that they incur for effectively managing organic projects. Similarly, the managerial skills required at the farm level are considered as is the use of cost-benefit analysis. The paper also reviews the legal and institutional framework that facilitates organic production and certification.

The paper is aimed at staff of government, private and non-government organizations working at the policy level and in the field, and at donors' organizations that support organic production and certification.

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Acronyms and abbreviations

AAN	Alternative Agriculture Network – Thailand
ACT	Organic Agriculture Certification – Thailand
ACFS	National Office of Agricultural Commodity and Food Standards – Thailand
AE	Agri-Environmental subsidy schemes – Europe
APEDA	Agricultural and Processed Food Export Development Authority – India
BAC	Bioagricert company – Italian-based company
BRFO	Ban Keng Organic Rice Group
COF	Center for Organic Farming in Uttrancha
DASP	Diversified Agriculture Support Project – India
EAGGF	European Agricultural Guidance and Guarantee Fund
ECOCERT	Certification body
ECOVIDA	Participatory Certification Network
EMATER	Governmental Agency for Technical Assistance and Rural Extension Services
EMBRAPA	Brazilian Enterprise for Agriculture Research – Brazil
EPOS	Association of organic farming advisers, researchers and instructors accredited by the Czech Government
EU	European Union
FNMA	National Environmental Found – Brazil
FVM	Minister of Agriculture and Rural Development – Hungary
GNEN	Green Net-Earth Net Foundation – Thailand
GMO	Genetically modified organism
HRDP	Horizontal Rural Development Plan – the Czech Republic
IAF	International Accreditation Forum
ICS	Internal Control System
IFOAM	International Federation of Organic Agriculture Movement
INMETRO	National Institute of Standardization, Metrology and Industry Quality – Brazil
IMO	Institute for Marketecology – certification agency
ISO	International Organization for Standardization
KEZ	Kontrola ekologického zemědělství (Organic Farming Control)
KÖM	Minister of Environmental Protection – Hungary
MAELA	Agro Ecological Movement for Latin America and the Caribbean
NAEP	National Agri-Environmental Plan – Hungary
NPOF	National Program on Organic Farming – India
NPOP	National Programme for Organic Production – India
NRDP	National Rural Development Plan – Hungary
NSCOP	National Steering Committee for Organic Production – India
OA	Organic agriculture
OBEP	Organic Basmati Export Program – India

OF	Organic farming
PGS	Participatory Guarantee System
PNMA	Ministry of Environment for implementing the National Environment Policy Brazil
TOPS	Top Organic Products and Supplies Company Limited
UOCB	Uttaranchal Organic Commodity Board
USS & OPCA	Uttaranchal State Seed and Organic Production Certification Agency
WTO/TBT	World Trade Organization - Technical Barriers to Trade

Executive Summary

In recent years, organic trade has experienced an outstanding and continuous growth. Both supply and demand factors are responsible for this boom. Particularly important are the consumers' concerns with safe food and environmentally friendly production. Certification is critical in organic markets because it gives buyers the confidence that a product meets organic quality and process standards, ensuring food integrity from farm to sale. It is also a way to protect consumers, producers and traders against a misleading use of labels. Therefore, certification enables organic producers to access new export and domestic market opportunities and premium prices due to the fact that organic quality adds value to products.

In developed countries, economic incentives and enabling policies and regulations have promoted the establishment of organic standards and institutions. Farmers in developing and transition countries still face institutional and economic constraints to reach the stage of certified organic producers, making it particularly costly for smallholders to participate in this market. Certification is therefore often seen as a barrier for small farmers' participation in export markets.

In this report, three certification schemes operating in developing and transition economies are assessed. The first is third party certification for individuals, a well-known and internationally recognized certification system. The second scheme is also third party certification, in which small-scale farmers may be certified in groups under an Internal Control System (ICS). The third scheme corresponds to participatory certification called the Participatory Guarantee System (PGS), which targets local or national markets and involves the participation of small farmers, small enterprises, traders and consumers in the certification process.

The report provides a comparative analysis of the organizational structure and marketing strategies in the organic supply chain, gross margin analysis and the improved managerial skills required at the farm and supportive organization levels in the three schemes. Case studies were selected from organic grains for export, Basmati rice from India and jasmine rice from Thailand, which comply with the ICS; and organic vegetables and fruits for export and/or domestic markets in Hungary and Czech Republic, and for local markets in Brazil, in order to illustrate compliance with third party certification systems as individuals in the former cases and with PGS in the latter.

The world market for certified organic foods has been estimated to be worth US\$27.8 billion in 2004 and, compared to conventional markets, may offer greater opportunities of access to small-scale farmers through modern food chains due to the added-value attribute of organic produce. However, the trends and characteristics of the organic trade in terms of volume and turnover vary at the individual country level depending on government support, food chain linkages, the particular commodity and the strength of the organic market.

Institutional and policy development to support organic farming and marketing is relatively recent in the studied countries. In less than two decades, the institutional framework has been strengthened in terms of promulgation of legislation, the definition of standards and the set-up of programmes, certification bodies and control systems. There are various driving forces in this development in the case studies discussed. In the Czech Republic and Hungary, strong proactive public sectors have established strict quality assurance regulations that are compatible with the EU Agri-Environmental measures. In contrast, in the other countries analysed, the policy and institutional development of the organic sector has been improved mainly due to the long-lasting advocacy from non-governmental organizations (NGOs), farmers' organizations and other civil society organizations.

Compliance with organic food standards and requirements implies that all organic food chain actors should be interconnected through ruled procedures in the quality assurance system. All these actors – farmers, processors, manufactures, exporters and importers – must be certified that they comply with organic standards and regulations. Certification and accreditation bodies are tools within the quality assurance systems to ensure that organic standards and procedures are followed. In addition to the policy and institutional framework, these involve an organizational structure engaged in decision-making at different levels for the development of business and the provision of financial and technology services to support organic production. To provide these services, managerial and technical skills should be developed along the chain. The costs of certification at the national level, therefore, include setting up the quality-assurance system, as well as the provision of services for improving managerial and technical skills at different levels. Organizations that support farmers or groups in becoming organic certified – private, public or NGOs – are required to develop these skills to implement business and marketing plans. They must also implement measures for enhancing farmers' abilities in order to ensure the organic quality attribute of the certified produce.

Several differences in costs for the supportive organizations have been observed. If all the technical and business services, inputs and implementing systems of certified groups in a project are provided by the organization, costs will be necessarily high, particularly for set-up. Similarly, costs turn out to be high when the organization targets different import markets demanding different certification, and, subsequently, costs per farmer increase. Costs tend to be lower when the actors in the organic value chain are well coordinated and vertically integrated or linked, due to lower transaction costs. Investments in technological development to enhance organic systems tend to be high when public support or alliances with other stakeholders are lacking. A special feature in the participatory certification is the investments in participatory learning and technological development for building long-standing knowledge through networking. In spite of these differences, the stakeholders in the organic value chain see the certification process as positive in all case studies. The certification process enhances the skills and knowledge of staff and farmers in coping with the growing organic trade, which it is still expanding with competitive prices.

Certification costs at the farm level also entail assessing farm management changes because farmers need to develop skills for managing organic technology; otherwise, they could incur productivity losses and thus not be granted certification. For instance, conversion costs and productivity losses are high in the Czech Republic and Hungary case studies under third party certification. These setting-up costs are associated with the conversion plans required by the

scheme, but are also linked to the previous conventional farming system. In the organic rice case studies, initial investments in infrastructure can be high, particularly in building dykes to prevent neighbouring fields from contamination. Direct certification costs – the lowest of which are found in the ICS case studies – are a low proportion of total ongoing costs and gross income. The costs are lower under the ICS because certification is granted to farmer groups. In addition, costs are lower because the sharing mechanisms – between the supportive organization and the farmers – are generally part of the firms' marketing strategies. Training and extension costs for farmers to ensure organic quality and documentation, record keeping, as well as the certification fees of external bodies could be shared by the export firm or leader organization that is part of the ICS and the farmers.

Direct certification costs – fees and monitoring visits – are higher under third party and participatory certification schemes. In the former scheme, this is expected because the certification process is granted individually. In the latter, these high costs are expected because marketing and networking activities are taken into account as an integral part of the scheme in order to build lasting local market relationships through consumer education. In general, costs associated with changes in farm management to convert to organic have important impacts on profitability and income levels.

All the case studies show profits, although differences among them have been observed. In general, the fruit and vegetables case studies show higher ongoing costs and higher revenues (US\$/ha/year) than the organic rice case studies. In the profit analysis, the organic rice case studies and the Brazilian fruit and vegetable case study show the highest profit. The former operate under ICS and the latter under the PGS. Factors other than the certification scheme might explain the differences, however. Profits also depend on the bargaining and business abilities of farmers in the value chain, which in turn depend on the availability and quality of their assets such as natural resources, capital, network, skills and knowledge. Farmers in the Brazilian case study also participate in marketing, and occasionally, processing activities. Very small-scale farmers in the Indian case study and the Thai case studies under the ICS are able to take advantage of international marketing opportunities because they are well integrated into or linked to the value chain, and because fair and well-defined social rules are in place.

Other non-financial benefits have been identified by organic certified farmers. Improving overall product quality and farm resources are benefits that provide long-term sustainability. They also add value to farmers' products. The certification process is therefore seen as having financial and non-financial benefits for farmers and their communities by promoting the improvement of their resources and thus stimulating sustainable rural development.

Actions have been identified that may enhance the competitiveness of the certified organic sector and the participation of farmers.

For government: priority should be given to support institutional development and the setting up of norms and standards at the national level in order to facilitate small-scale farmers inclusion.

For supportive organizations (government, trader and NGOs):

- Intervention strategies on technology development should be implemented with a long-term view, particularly targeting pest control and management and appropriate agro-processing technologies.
- Financing mechanisms should be established to support organic development projects at the initial phase.
- Market development should be supported. The different studies show a consensus on the three major areas to develop: strengthen value chain linkages, information technologies (IT) development and local market development.
- Strategies should be implemented to reduce costs of training activities in order to improve efficiency. This could be achieved through joint training among institutions and experience sharing through networks. Training will include not only production, but also marketing and processing activities.

For development organizations:

- Cost-effective technologies should be investigated and disseminated among farmers to help them meet certification requirements.
- Assistance should be given to incorporate small-scale farmers in the organic supply chain. Development organizations could help small-scale farmers in developing and transition countries to identify lucrative markets and the required certification scheme.
- Training should be provided on management and market development along the organic food supply chain in order to increase transparency and better linkages between actors, and to improve specific managerial skills for better production planning and market development.

1. Introduction

In recent years, organic trade has experienced an outstanding expansion, mainly driven by consumers' concerns with safe food and environmentally friendly production. Certification provides consumers with the confidence that organic products ensure food integrity, from seed through sale. Certification also guarantees that production and processing are managed under a holistic approach that enhances ecosystem health. In developed countries, economic incentives and enabling policies and regulations have boosted the establishment of organic standards. In developing countries, on the other hand, smallholders still face institutional and economic constraints to reach the stage of certified organic producers.

Despite the outstanding growth of the organic market in the last decade, certification costs and stricter standards from the developed world have prevented many smallholders in developing and transition countries from entering this market. Farmers seeking to sell organic products must hire an organic certification agency to annually inspect their farms and confirm that they adhere to the standards established by various trading partners. Smallholder group certification is envisaged as an alternative to reducing certification costs while enhancing capacity building. Another alternative explored is participatory certification or the Participatory Guarantee System, an initiative also largely coming from the developing world.

FAO has conducted an economic study on the certification costs under the above-mentioned certification schemes, which was guided by the following key questions:

- What are the implications in terms of management and costs for small farmer organizations wishing to obtain an organic certification?
- What skills and knowledge do farmers need in order to comply with the certification procedures?
- What additional costs have farmers incurred in organic production, marketing and certification? What are the social and economic benefits of producing organically?
- Does any step of the certification process require additional institutional support and further skills and knowledge development?

Specific objectives of this study are to:

- Appraise key factors and constraints in managing certification schemes by farmers' organizations.
- Appraise the costs incurred by farmer organizations to implement inspection and certification procedures.

- Identify the abilities needed by farmers to comply with the certification scheme procedures.
- Appraise the cost/benefit involved in organic production, marketing and certification by farmers.
- Identify the main constraints for farmers and farmer organizations in the certification process that require additional institutional support and further skills and knowledge development.

2. Methodology

The methodology used in this study combined the following: review of secondary information, documentation of case studies, information analysis, drafting of findings at the national level, and preparation of a synthesis report. The report appraises the organisational structures, technical and business support services, managerial skills and assesses the gross margin ratio for each case study. By gathering information from a combination of diverse sources and using a value chain approach, it was possible to gain insight into the feasibility of setting up and maintaining certification mechanisms through different schemes and in different realities, rather than simply evaluating the cost of certification.

Secondary and primary information

Data on organic farming and trade are usually scarce and hard to find. The secondary information gathered for this report was collected by consulting reports from previous studies, PhD research, data provided by certification agencies, associations of producers, trade bodies (government and private), and regional farmers' networks.

Documents on policies, procedures and rules that govern the organic sector were collected from governmental institutions, certification agencies and farmers' networks. The preparation of the case studies included interviews with farmers, focus groups and other stakeholders.

Case studies

The five developing and transition countries selected for the case studies have different legislation and organizational structures relating to organic certification, that allows to illustrate different alternatives. More than a strict statistical costs analysis, therefore, the overall study aims to better understand the alternatives in organic certification and the economic implications for farmers and their supportive organizations. In trying to narrow down the scope of the analysis, the case studies were selected according to the following criteria:

- Producers were small-scale farmers.
- Producers participated either in certified organic rice chains or certified fruits and vegetables chains.
- Producers took part either in third party certification as individuals in groups, or in participatory schemes linked to export or domestic markets.

In Thailand, the author of the case study first selected eight organic rice projects that qualified as potential case studies – one private commercial project and seven development-based projects. Six out of these eight projects produce jasmine rice, including the private commercial

project. This commercial project and one development-based organic jasmine rice project were then chosen: the first project comprises 133 certified farmers, and the second, 244 farmers. Both of them are located in the northern part of Thailand.

The Indian case studies were selected from the Uttranchal (also called Tarai) region in the Himalayas. The ecological conditions and history of informal organic cultivation in this lowland favoured the cultivation of traditional organic Basmati paddy only. Two case studies were selected – the first is implemented by a private firm together with 190 farmers and the second forms part of a governmental programme aimed at promoting certification and trade in the *bio-villages*. Forty-nine farmers from one of these bio-villages participated in the survey.

In the selection process of the Hungarian sample, representation was sought according to the region and the production structure. Vegetables, fruits and vineyards represent a small fraction of the cultivated area (two to three percent in total) but a sizable percentage of the total number of farms, since these products are usually produced by small farmers. Farmers were selected from a list published in the *Official Journal of the Ministry for Agriculture and Rural Development*, consisting of beneficiaries of area payments for organic farming in 2001 and 2002. The sample analysed included 70 farmers, i.e. 14 percent of the total of 496 certified farmers in Hungary in 2001-2002.

In the Czech Republic, information for this report was collected through electronic communications and/or personal interviews with organic farming experts, farmers, the Czech certification agency *Kontrola ekologického zemědělství* (KEZ) and officials from the PRO-BIOS association (a non-governmental and non-for-profit organization) and the Alliance of Organic Farming Advisors (EPOS) accredited by the Czech Government. At the moment of the study, there were about 40 organic vegetable and fruit growers, eight of which were interviewed (20 percent of the universe of organic farmers).

In Brazil, a sample was selected from the list of members of Ecovida, a network that integrates more than 2 300 farmer families and their groups in southern Brazil, and leads a participatory certification scheme for organic products. A total of 82 farmers were selected from five groups from Santa Catarina, Rio Grande do Sul and Paraná States, answering to various criteria (e.g. diversity of production and targeted markets, degree of participation in the value chain, and time of involvement in the network).

Research tools

Research tools included standardized questionnaires for farmers, farmer group surveys and key questions for particular stakeholders.¹ The field data was cross-checked with available records whenever possible. Key persons were also interviewed, including staff of NGOs, certification agencies, local and regional government institutions, farmers' associations and private firms that provide technical support to individual farmers or farmer groups. Focus group techniques

¹ The authors of the case studies designed their own questionnaires following the guidelines suggested by FAO on the required information.

were also conducted with relevant stakeholders in order to identify alternative ways of supporting farmers' organizations to manage certification procedures.

After completing the data collection, the information was entered into a relational data management system and subsequently processed. Reports of the results were written for each case study.

Analytical approach

A value chain management approach is considered when calculating the costs associated with supplying certified organic products. The key element that links organic chain stakeholders is the setting up of quality assurance systems. Organizational structure and objectives pursued in each certification scheme determine the quality assurance measures and the recording systems to monitor product quality to be applied. Decision-makers at all levels need to work together to ensure that quality product assurance is continuously maintained. Regardless of the scheme, compliance with organic standards and procedures involves making management changes at the production, processing, certifying and marketing levels. To ensure lasting quality, managerial and technical skills are developed along the chain.

The analytical approach takes into account the main food chain actors involved in the certification and their costs to ensure organic quality of produce. This approach differs from previous studies where the emphasis was placed on the impact of social and environmental certification, either from a farm economic (Dankers and Liu, 2003) or a macro-economic (Wynen, 2004) point of view.

3. General features of the organic sector in the case studies

3.1 PRODUCTION AND MARKET

Following the worldwide trend, the increase in organic production and in number of organic producers in the analysed countries has been notable in the previous years, but especially from 2000 onwards. Supply- and demand-driven forces explain this trend. Although still at an infant stage, organic agriculture definitely took off in the worldwide market system. What was just a niche market some years ago has now entered as important segment in mainstream markets.

In 2004, the value of the world market for certified organic food was estimated at US\$27.8 billion. Since then, it has been growing at roughly nine percent per year (Sahota, 2006). However, trends and characteristics in terms of volume, turnover and organic products vary at the individual country level depending on commodity, location, government support and strength of the organic market.

In the domestic markets, organic products have made dramatic inroads into conventional distribution channels (Raynolds, 2004). Organic items sold in alternative outlets such as box schemes or small food cooperatives continue to come largely from small, often local, producers oriented towards domestic and civic movement values (DeLind, 2000; Marsden *et al.*, 2000). In recent years, however, mainstream distributors have greatly increased the availability of domestic and imported organic commodities throughout the North, with supermarket sales representing the most dynamic area of market growth (Yussefi and Willer, 2003). The most prevalent marketing channel is determined by geographical location and commodity, but most importantly, by the stage of development of the organic market in the country. A comparison of the organic production and market features in the analysed countries was carried out.

Brazil. The number of farms with some kind of organic certification has increased from 700 in 1997 to over 14 000 in 2003 (Lernoud, 2005), and farm sizes have grown from approximately 275 000 ha in 2001 to 803 000 ha in 2003. Sugar cane, coffee, soybean, and fresh and processed fruits and vegetables are among the diversity of products to highlight. By the early 1970s there had already been social movements fostering the use of agro-ecological principles and the recovery of traditional practices as key elements for sustainable agriculture. Nowadays, the organizations that fostered that movement are active participants in the formulation and implementation of the Brazilian Law on Organic Agriculture. Stakeholders from the conventional certification industry are also actively providing services to the Brazilian organic agriculture. Roughly speaking, from 2000 to 2004 the growth of the Brazilian organic production was calculated at between 30 and 50 percent annually.

There has been a rapid growth in the number of certified organic farms in the country. Most producers are small-scale (90 percent) and their production is highly diversified, providing a large number of fruits and vegetables to local and regional markets. An exceptional case is small agroforestry enterprises that export organic certified exotic fruits and palm hearts (Pacheco *et al.*, 2002). The largest organic area is farmed by large-scale producers (ten percent) who specialize in a few crops and are well connected to export companies.

The size of the Brazilian organic market is very widely discussed. According to certifying bodies, it ranges from US\$250 million to US\$300 million, depending on system productivity and commercial margins applied by wholesalers. According to certification bodies, 85 percent of Brazilian organic production is exported, especially to Europe, the United States and Japan. The remaining 15 percent is distributed in the domestic market. Major export products are coffee, orange juice, soybean and sugar, as well as a number of other smaller products. There is a growing export business of organic meat and an increasing demand of organic soy from EU and Japan (Pacheco *et al.*, 2002).

Internal markets are very dynamic and involve a wide number of actors and marketing systems. Individual sales at weekly fairs are the most prevalent distribution channel in small towns. Arrangements among farmers are often carried out in order to maintain the supply of fresh fruits and vegetables throughout the year. In some municipalities, specialized stores have been set up to cover the demand of the regional market. Other main distribution channels include sales points in local towns and delivering of processed ecological food to public schools and ecological baskets in poor neighbourhoods. Large markets comprise large retailers, processing industries or deliveries to restaurants and hotel chains.

A driving force for change is the recent entry of supermarket chains and several wholesalers into the internal organic markets in the larger towns. Most are limited to selling fresh produce, although they increasingly include processed food with value added such as pre-cleaned vegetables and ready-to-eat salads. Processed food is frequently supplied to large-scale retailers. Although it is considered an opportunity for some farmers to sell to supermarkets, it also involves high market risks associated with the stringent procurement systems of supermarkets. Since there is no premium price for organic products in Brazilian supermarkets, there is no incentive to run these market risks.

Nearly half of the national organic produce is consumed in São Paulo and nearby cities, and there is a great potential for market development. Consumer awareness of healthy products and confidence in the compliance with organic standards by farmers are important elements in this market. The potential market represented by a 35 million middle to upperclass people with an increasing awareness on health concerns (e.g. diet markets) is estimated at US\$1.3 billion

Thailand: In 2005, an estimated 21 700 ha of farmland was under organic management, representing around 0.15 percent of total farmland, of which an approximate estimate of 80 percent (17 328 ha) was organic rice (EU-ITC Asia Trust Fund, 2006). Social movements and farmer organizations were the first, in the 1980s, to provide a discussion forum for experience

sharing and policy advocacy for sustainable agriculture, including organic farming. They formed the Alternative Agriculture Network (AAN), an umbrella organization that aimed at developing organic farming technologies and conversion programmes. AAN in alliance with other actors, such as consumers and environmentalists, fostered the establishment of a certification body in the mid-1990s (Panyakul, 2006).

The predominant organic products in Thailand are rice, vegetables (fresh vegetable and baby corn) and fruits. There are a few honey and herb tea operators and one certified organic shrimp producer, but no organic livestock production yet. Most fresh vegetables are sold in Thailand, while all baby corn production is exported. Almost all organic rice is marketed in industrialized countries – mainly the EU and the United States with a smaller amount sold in Asia (Hong Kong, Singapore, Thailand and China) – via three different channels: dedicated organic distribution, conventional rice traders and the fair-trade network.

In recent years, the trade of organic products has experienced an outstanding expansion. Organic agriculture is listed as an important national agenda item to promote safe food and national exports, yet organic farming does not receive much concrete government support. The development of organic agriculture is mainly in the hands of farmers and the private sector.

The growth of the Thai organic domestic market is slow and no studies have been carried out on its size. There are three main marketing channels where such products are sold, i.e. supermarket chains, specialized shops and direct marketing. There is also a fourth, very small-scale marketing channel where several producer groups sell their produce locally.

In supermarkets, organic and/or health food products are sold in the same way as conventional products, i.e. on the same product shelves. Main products sold through this channel are fresh fruits, vegetables and rice. However, imported products, which are increasingly noticeable in Thai supermarkets, add to the product range and varieties available.

In specialized shops, organic and health foods are their main products. However, due to a limited assortment of organic products, these shops have to carry many conventional health food items. Organic products are still much more predominant, but there is a lack of clear identification or labelling to separate the different products. Direct marketing is also carried out for organic products, but only for fresh vegetables at this stage. The logistics of schemes vary, but in general, customers are delivered a pack of vegetables on a regular basis (e.g. one/week) to a designated location (home/ office).

India: At the moment of the study there were 2.5 million ha of certified organic land and many more non-certified organic land with production for the domestic market. Most of the certified land, 2.3 million ha, were grassland.² Public and private interests encouraged institutional development already in the 1996 as a basis to expand organic trade. Although this development appears to be relatively recent, organic agriculture in India dates back to ancient

² See APEDA's website: www.apeda.com.

traditional systems. Public and non-governmental organizations supported organic practices in different ways, which have proven to be sustainable in the course of time.

India does not import organic products; however, the export market was estimated to be worth approximately US\$700 000 in 2000-2001, with the EU as its main destination (FAO, 2002b). India is one of the largest producers and exporters of basmati rice in the world. Other major organic items exported include cotton, spices, tea, rice, pineapple, honey, rice, sesame seeds, walnuts, vanilla and ginger. The main actors in international trade of organic produce are the EU, the United States, Canada, Australia, New Zealand, Israel and Dubai.

The organic market for agricultural produce in India, in particular, the market for organic basmati, is disorganized and at a rudimentary stage. The total gross domestic organic market in the country is not more than US\$110 000. Although many companies are planning to foray into the organic basmati market and have been allocating budgets for promoting this concept among consumers, awareness has not reached the desired level for inducing business to initiate a changeover to organic production systems. Since organic products are considered mostly export-driven, more emphasis should be given to the promotion of internal and domestic markets.

At present, Indian organic products sold on the domestic market receive a premium of about 20 to 30 percent over conventional products, and are usually sold directly from the farmer or through specialized shops and restaurants (UOCB, 2005). Installation of market centres in each district by the Government of Uttarakhand is an example of a marketing channel. They enable small farmers and rural artisans to sell their produce at the district level market centre. Market centres have sales outlets for organic products such as organic basmati rice, kidney beans, pulses, wheat flour and spices from local producers. Only one mill in the state has organic certified rice-processing for export.

Health parameters are considered the main factors leading consumers to purchase organic products. Many organic producers in India are therefore trying to label their organic products in this direction. There is growing appreciation for organically grown food, especially since it provides additional value to production, yet domestic markets need to be developed and supported (ITC, 1999). It was felt, however, that consumer awareness has not reached the desired level for business enterprises to initiate a changeover to organic production systems. Awareness campaigns at all levels in the supply chain of any organic food commodity should be undertaken at an intensive scale with focus on the consumer's delight in buying the product.

Hungary: By 2004, the organic area had already reached 129 000 ha (1.75 percent of the agricultural land) with over 1 400 producers. This means a growth of about 13 times in area and ten times in the number of enterprises from 1988 to 2004. The main products are cereals sold as raw material. The Agro-Environmental Programme, which aimed at supporting sustainable agriculture practices, plays an important role to boost this development. A milestone in Hungarian organic agriculture was the foundation of the Biokultura Club in 1983,

which started out as a professional organization seeking market opportunities and became a nationwide organization in 1987 (Juhász, 2005). It works as a framework that links producers and domestic and export markets.

Around 90 percent³ of organic production in Hungary is exported, the most important products being wheat, corn and sunflower seed. Important EU target markets are Germany, Switzerland, Austria and the Netherlands. Hungarian market access to the EU was made easier in 1996, with the entry of Hungary into the accepted third countries' product list. Further growth in the main EU export markets is expected with their long history of organic agriculture and increasing consumption.

Export possibilities and contacts with the organic sector outside of Hungary encouraged the first state farms to convert to organic agriculture as soon as Hungarian trade companies were founded, with the aim of establishing a domestic market for organic products. However, the lack of demand for these products hindered the further development of the domestic market.⁴ The Hungarian domestic organic market is small (0.1 percent of total food consumption) compared to export volumes (35 million euro in 2001 [AMC, 2003]), but domestic consumption is growing slowly but steadily. Just a few organic farmers export directly (approximately 3.5 percent); 35 percent export via integrator companies, most of which sell to wholesalers-exporters (Kurthy, 2001, cited in AMC, 2003).

In the domestic market, the main marketing channels for organic products are the special organic shops and markets. The biggest concentrated market of organic foods can be found in Budapest and its agglomeration, where most of the organic shops and organic markets are situated. The markets are usually open once or twice a week in separated locations where a widespread range of products can be found. A selling condition is that the products must be controlled and labelled as organic food. Organic shops are small retail shops that sell organic and other healthy foods. There is a limited number, however, and consumers must travel to reach these shops. They have a mixed profile, also selling "reform food" and "healthy food", which confuses consumers about the concept of organic product. In the last few years, modern retail formats (super- and hypermarkets) have also started to sell organic food, mainly processed products such as baby food, dairy and bakery products.

The consumer profile of those who buy organic are regular buyers, educated, middle-aged (40 to 50 years old), health-conscious, urban and usually women. The educated, urban, younger generation is also interested in the organic food consumption, but tends to be less able to afford it. However, from previous surveys there are indications that the prices on the domestic market are too high to be acceptable for the general consumers (Anikó, 2005). A public authority, Agrármarketing Centrum (AMC), assists the marketing of Hungarian organic products with publications, market research, organization of events, participation on international exhibitions and markets.

³ See www.organic-europe.net/country_reports/hungary/default.asp.

⁴ See www.amc.hu.

The Czech Republic: The Czech organic sector has developed strongly since EU accession due to a generous government support scheme, EU subsidies, rising demand from domestic and foreign markets, the opening of new organic shops and processing facilities, and more supermarket chains offering organic. The government is supporting market development through its Organic Action Plan.

In 2004, 263 299 ha (6.16 percent) of the utilized agricultural area was cultivated by organic methods. This represented a growth of 3.46 percent compared to 2003. Arable land comprised 7.50 percent; permanent grassland, 89.40 percent; orchards and vineyards, 0.40 percent; and other land types, 2.70 percent (Václavík, 2005).

Ten percent of the Czech organic production was exported in 2003 to Austria, Germany and Slovakia. The main export products were buckwheat, spelt, rye and barley. No vegetables were exported at the time of this study, although some organic fruit growers were exporting mainly to Germany, Austria and Italy, taking advantage of higher prices. Most processed products were imported, due to lack of development of local processing facilities, with the exception of herb, tea and spices.

The number of organic farms remains low, with horticultural producers, mostly small family farms producing organic vegetables and/or fruits for the local market, with only one known organic vegetable producer able to meet supermarkets requirements (potatoes, red beet, onions and carrots). Organic fruit and vegetable production still comprises less than 0.3 percent of the total Czech horticultural production.

The main domestic distribution channels for organic food are multinational retailers, with the largest volume of sold organic food. Supermarkets have about a 65 percent share and offer an assortment of organic produce, most of the dry produce imported, but local sourcing of potatoes, root vegetables, apple juice, herb teas, milk products and meat.

Health food shops and specialized organic shops have a 25 percent share, with up to 80 percent of organic produce, and offer the largest selection of organic food on the market. Several new shops opened recently, with more planned in the larger cities. A small percentage of organic products are sold directly at the farm. This is either through pick-your-own schemes, farmers' markets or box delivery by post or train to final consumers or distribution centres, retail outlets or restaurants. There are six organic and natural food wholesalers operating in the Czech Republic, with only three operating regionally and all of them dealing with dry goods only.

Awareness-raising campaigns to promote organic agriculture have been running nationally since 1990, with publications, information provided in schools, sales exhibitions, television and radio programmes. In addition, since 2000, information campaigns have been carried out in supermarkets (FAO, 2006). Total spending on organic food rose by 40 percent between 2003 and 2004 and more growth is expected due to rising demand fuelled by this increased information. However, organic food still comprises only 0.1 percent of total food consumption.

3.2 ENABLING ENVIRONMENT AND INSTITUTIONS

This section describes the policy and institutional framework developed for organic agriculture in the case studies. In general, institutional development includes promulgation of legislation, definition of standards and setting up of programmes, certification bodies and control system. In general, institutional development in these countries is relatively recent. Most of the legislation and standards developed at the beginning of 2000, as shown in Table 1.

Table 1: Type of policies and institutions involved in organic agriculture

Country	Type of legislation	Name and year of issuance	Responsible institutions	Aims
Brazil	Legislation	Law 10,831/2003	Ministries of Agriculture and of Agrarian Development	Definition of organic agriculture, recognition of different certification systems.
India	Standards	National Standards for Organic Products/2001	Several ministries with the lead of the Ministry of Commerce*	Quality assurance systems for certified products.
Thailand	Standards	Standards for Organic Crop Production/2000	Ministry of Agriculture and Cooperatives, Ministry of Commerce	Promote safe food and national export.
Hungary	Government Decree	Government Decree 140/1999 and 144/2003	Ministry of Agriculture and Rural Development and of Environmental Protection	Organic agriculture and marketing rules.
Czech Republic	Legislation	Act No. 242/2000	Ministry of Agriculture	Rules for organic agriculture along the whole chain

Brazil: The need for regulations on organic production was identified in the early 1990s. Regulations were specified as a response to the growing external demand on organics and proliferation of standards. However, Law 10,831 (published on 23 December 2003) came into effect after a long discussion process, with the participation of the agro-ecological movement and the public sector. The law defines organic production along the value chain and recognizes that there may be different types of organic certification and that organic but uncertified products may be sold directly if under some social organizational control. Recognizing all the conformity assessment procedures in the legislation, it is intended to provide a basis not only to enable the country to export, but also to develop a strong organic domestic market. Discussions on the implementation of this law have followed with participation of the organic movements, both from the private and public sector.

Institutional support: The National Department of Agriculture has recently created the Organic Agriculture Sector Board as an advisory body for the Ministry of Agriculture. Organic agriculture has been defined as one of the five priority policies. The national organic movement is participating actively in the creation of a policy to enhance social organization around organic production (Santacoloma, 2005). Technical assistance, research and extension

are provided mostly by NGOs interested in promoting agroecology, sometimes jointly with research and educational institutions from the private and public sector.

There are some financing mechanisms that stimulate the adoption of alternative agriculture. Public as well as private banks are making resources available for loans to organic farming producers, where certification is considered collateral. Fundo Nacional do Meio Ambiente (FNMA) created in 1989, acts as the financial agent of the Ministry of Environment for implementing the National Environment Policy (PNMA). It has invested close to US\$30 million throughout the country to date.

India: The Indian Government has developed and implemented organic regulations since 2001 through the National Steering Committee for Organic Production (NSCOP). In NSCOP, led by the Ministry of Commerce, members are drawn from the Ministries of Agriculture, Commodity Boards, Food Processing Industries, Forests and Environment, Science and Technology, Rural Development and Commerce, and Trade and Exports (APEDA, cited by FAO, 2006). NSCOP set down the National Programme for Organic Production (NPOP) with the main focus to regulate the export of certified products. Consequently, NPOP aims mainly at enhancing quality assurance systems required for certified products. Its main objectives include setting up the National Standards for Organic Products, formulating policies and programmes for accreditation and certification, facilitating certification, and encouraging development of organic farming and organic processing.

Since the national certification bodies are not yet recognized as equivalent by EU regulation,⁵ exporters must rely on approved external certification bodies. The Indian Government initiated discussions to be recognized by the EU as a *third country* under Article 11 of EU Regulation 2092/91. Additionally, exports are required to have individual import licences, which increase bureaucratic procedures and transaction costs. Similar problems will be faced when attempting to export to other countries, such as the United States and Japan.

Institutional support: Organic agriculture and export opportunities at the national level are promoted by the Agricultural and Processed Food Products Export Development Authority (APEDA). Most of the 26 Indian States take part in organic programmes including training, financing, research and support to certification. NGOs have been very actively participating in organic production promotion. Activities include: organizing farmer groups; training in farm practices and documentation for certification purposes; input supply; and linking farmers to export and domestic markets. These programmes, sponsored by governmental or development agencies, particularly aim to improve market access to organic farmers by facilitating compliance with certification requirements. In turn, the interest of the private sector in organic production is increasing, mostly represented by export firms that facilitate the establishment of farmers' organizations and pay certification fees under contract farming schemes to ensure availability of certified organic product (FAO, 2006).

The Uttranchal Organic Commodity Board (UOCB) was established in June 2003 at the same time as the Centre for Organic Farming (COF), which was funded by the largest national

⁵ Inspection bodies should have been performing according to equivalent procedures as prescribed in the EU Regulation.

funding organization (Sir Ratan Tata Trust, Mumbai). Today, the Centre is responsible for human resources; technical and marketing support is therefore currently covered entirely by the COF (UOCB, 2005).

Thailand: Standards for Organic Crop Production first came into force in 2000. The first draft was prepared by the Thailand Institute for Scientific and Technological Research, Department of Export Promotion, Ministry of Commerce, and the Ministry of Agriculture and Cooperatives. After a review by the Department of Agriculture and a public meeting to collect comments (May 2000), the final draft was adopted in October 2000 (Panyakul, 2006). Establishing certification and accreditation systems are also considered for developing organic agriculture. The government's main objective is to promote safe food and national export. The reduction of import of fertilizers, pesticide and medicine is another target pursued by the regulation.

Institutional support: Institutional initiatives pursuing safe food and promoting export have been established, focusing on research programmes on organic production and capacity building for inspection and certification. Although formulated in governmental plans, these initiatives have served only as long-lasting advocacy from NGOs and farmers' organizations (FAO, 2005).

A significant institutional development has been the IFOAM accreditation of the Organic Agriculture Certification Thailand (ACT) in 2001. It is the first Asian and the only Thai organic certification body that can offer internationally recognized organic certification services. ACT's members include producer organizations, consumer groups, NGOs, environmentalists, academic and the media. ACT has extended inspection and certification services to organic producers from Southeast Asia, which means that they are able to also gain export markets from local certification without further external control.

Hungary: Before Hungary's accession to the EU, organic agriculture was already strictly regulated. The first step in legislating on organic agriculture was the 140/1999 Government Decree. It refers to the organic production and marketing of agricultural products and foodstuffs. It was almost an adaptation of 2092/91/EC. The 2/2000 Common Decree of the Minister of Agriculture and Rural Development (FVM) and the Minister of Environmental Protection (KÖM) contains the detailed standards of the above general regulation. Further amendments and decrees⁶ contain the animal husbandry standards, which were also completely harmonized with EC Council Decrees. Regulation on organic agriculture continues to be stricter than the EU even after being recognized as a third country under Article 11 of EU Regulation 2092/91. Although such strict procedures may be safe, they can make administrative tasks lengthy and slow.

Institutional support: Organic farmers in Hungary have been able to apply for subsidies for the conversion period since 1997, which had an incentive effect. After 2001, organic agriculture was supported within the National Agri-Environmental Plan (NAEP), which was integrated into the National Rural Development Plan (NRDP) in 2004. The aim of these policies is to conform

⁶ The amendment of 2/2000.FVM-KÖM Decree and the 82/2002 FVM-KvVM Common Decree.

to EU good agricultural practices (GAP), which recognize agriculture's multifunctional role in environmentally sound and healthy food production. In fact, from 2004 to 2006, resources for subsidies to organic agriculture are planned to increase from 80 million to 123 million euro, where EU resources cover 80 percent of the total (Juhász, 2005). Due to differences in quality criteria and delays in the payments, however, most applications for subsidies are from grassland owners rather than from agricultural producers.

In 1987, Biokultura became the first organization to assist with organic agriculture in Hungary. It was initially formed as a nationwide club and later became a nationwide association. It is currently composed of 32 local groups and 1 400 producers. It acts as a framework linking producers to export and domestic markets. Some of its noteworthy functions include promoting organic agriculture, providing information to consumers, contacting international organizations and certification. The latter is done through an independent organization created explicitly to undertake this task. Technical assistance, research and extension are available from private businesses only.

The Czech Republic: Since 1993, the Ministry of Agriculture established the organizational framework for organic agriculture in an internal order entitled, the *Methodical Instruction for Organic Farming*. Although this order had no legal status, it established a binding framework to orient farmers interested in entering the system. Further legal texts contained provisions on the labelling and packaging of organic food (Food Act 110/97), or established a basis for granting support to farmers in non-productive functions of agriculture (Governmental Decree 24/99). More complete legislative framework was set up with the adoption of Act No. 242/2000, which lays down the rules for organic agriculture for the whole system, including requirements for production, processing, importing, labelling and inspection. It also regulates the certification system and labelling as well as control and supervision of compliance with this law. This Act entered into force on 1 January 2001. It was prepared by the Ministry of Agriculture in co-operation with the Ministry of the Environment.

The implementing regulation was Regulation No. 53/2001, which came into effect on 15 September 2003 and was amended by Regulation No. 263/2003. This amendment mainly concerned the implementation of Commission Regulation 1788/2001, an update of the list of fertilizers and plant production products, a list of raw and ancillary materials that can be used in the production of bio-foodstuffs, and the list of countries and their inspecting bodies whose certificates are acknowledged as equal to those issued under the law (Juhász, 2005).

The Czech Republic achieved equivalency status with Article 11 (1) of EC Regulation 2092/01, as recognized in the list of *third countries* under Commission decisions for non-processed and processed foods of both plant and animal origin (FAO, 2006).⁷ As the Czech Republic has been an EU member since 2004, Czech legislation on organic products is subordinated to the EU Regulation.

The Structural Policy and Ecology Department of the Ministry of Agriculture (*Ministerstvo zemědělství*) is the competent authority for organic farming in the Czech Republic. The central

⁷ See FAO webpage on organic agriculture: www.fao.org/organicag.

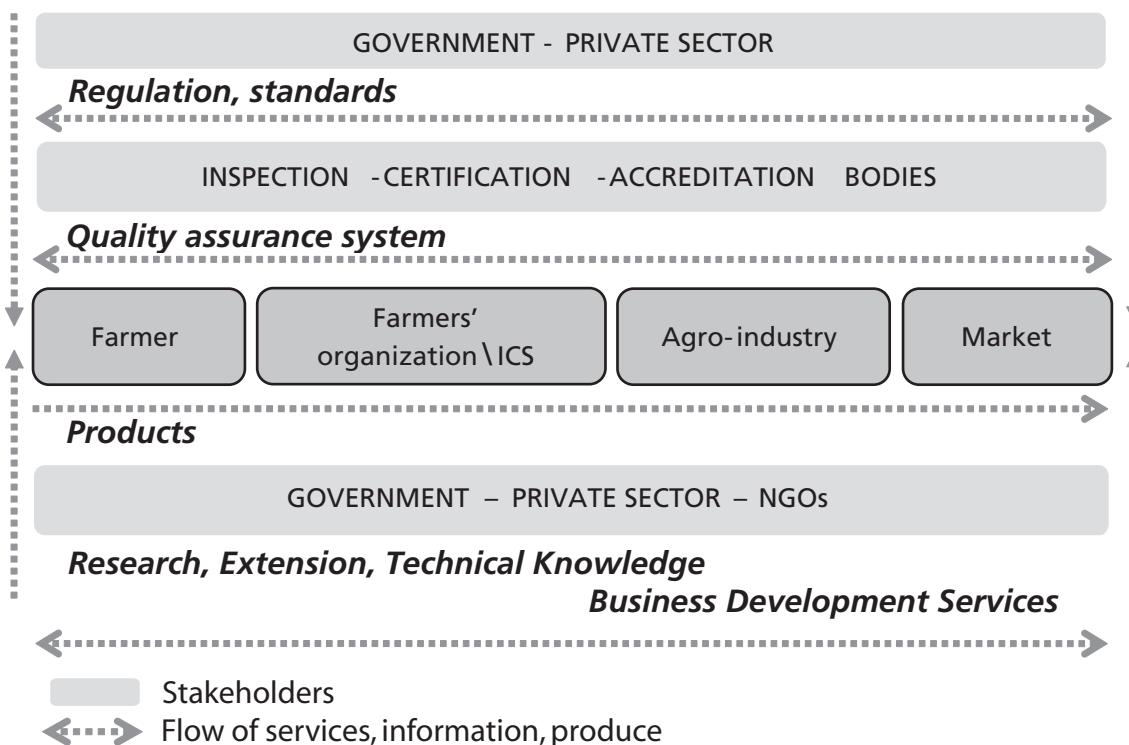
body, KEZ, provides education and training to inspectors and certifies products for export and domestic markets. In 2003, it issued 911 export certificates for bio-products and bio-foodstuffs, covering approximately 9 254 tonnes.

The Czech Government's goals for organic agriculture are increasing organic area to ten percent of total agricultural land by 2010, higher subsidies for production on arable land, increased quality of processing, marketing and export support, and education of consumers on organic farming merits. From 2004 to 2006, US\$12 million per year were earmarked as financial aid to organic producers under the *Horizontal Rural Development Plan* (HRDP) prepared by the Ministry of Agriculture, the Czech Republic is able to draw financial funds for support of rural development from the guarantee section of the European Agricultural Guidance and Guarantee Fund (EAGGF). The amount of EAGGF co-financing may cover up to 80 percent of calculated payments. The organic farming subsidies programme is one of the agro-environmental measures and represents a follow-up on the subsidizing policies implemented by the Ministry of Agriculture prior to the entry of the Czech Republic into the EU (Václavík, 2005).

4. Marketing strategies and organizational structures

The previous chapter highlighted the general features of the organic sector in the case studies. The core of this chapter is the analysis of the organizational structure required to comply with organic certification standards and procedures, both in terms of the conformity assessment system, and the business and technical development services. The stakeholders driving this process may be NGOs, governments or business companies. Figure 1 below illustrates the different actors in this structure and the relationships between them along the organic supply chain.

Figure 1: Stakeholders and linkages in the organic food chain



In the organic supply chain, institutional development is required both for providing business and technical services, and establishing the quality assurance system. Diverse stakeholders take part in the chain with different functions. Farmers are responsible for the production of certified organic produce. Processors/exporters/NGOs are responsible for coordinating farming activity, monitoring procurement, and processing and exporting the organic produce. They are also occasionally responsible for ensuring inspection and the certification process. The inspection agency conducts the inspection and grants certification. National or international organizations give accreditation to certifying agencies and supervise the development and implementation of organic standards and policies for organic products. The importing country verifies the imported produce by a declaration document sent by the exporting country. Finally, the inspection agency in the importing country might conduct an inspection for certification of the imports as per the standards of the importing country (US National Organic Program [NOP] and EU-EEC 2092/91) (Panyakul, 2006; Katyal, 2005; OUCB, 2005).

The case studies are clustered in two groups for easier analysis: the first considers the Thailand and Indian case studies on exporting organic fragrant rice, while the second analyses the Brazilian, Hungarian and Czech case studies in fruits and vegetables targeting mostly domestic markets.

4.1 CASE STUDIES ON ORGANIC FRAGRANT RICE

Rice is one of the world's most important agricultural commodities and one of the most significant for farmers in developing countries. Rice is usually cultivated in Asia on very small farms averaging 0.8-1.3 ha. Asia's fragrant rices today account for less than ten percent of global rice production (FAO, 2006).⁸ However, Basmati from India and Pakistan, Thailand's jasmine rice, and hundreds of little-known locally adapted varieties appear to hold great promise. Export markets in Europe and North America are expanding rapidly and local demand is also strong (FAO, 2006).⁹

Traditional fragrant rice varieties are usually unresponsive to fertilizer, hence they yield around two tonnes per ha, which is well below the 5-6 tonnes per ha produced by high-yielding varieties. The planting area of aromatic rice is therefore very small compared to the national rice acreage. However, the sustained higher prices obtained when the fragrant rice is sold in organic markets create certain expectations in rice exporters. Thailand, the world's biggest rice exporter, expects overseas sales of the aromatic varieties to rise in the coming years.¹⁰ In turn, India exports around 950 000 tonnes of Basmati rice a year, with the Middle East, the United States and Europe as the main buyers.¹¹

The organic food chain for fragrant organic rice is analysed using case studies from Thailand and India. The stakeholders participating in this supply chain are similar in both countries

8 See www.fao.org/AG/magazine/0207sp1.htm.

9 See www.fao.org/AG/magazine/0207sp1.htm.

10 See www.basmati.com/aromatic/index.shtml.

11 See [basmati.com/aromatic/index.shtml](http://www.basmati.com/aromatic/index.shtml).

– farmers, the processor/exporter or development programme, the inspection-certification agency and the importing country.

The rice case studies are introduced below. Table 2 summarizes the main characteristics of their organizational structure. The complete reading of the studies is advisable, however, for a better understanding of the complex net of interrelationships.

Thailand case study 1: Bak Ruea Farmer Organization (BRFO) with support from the Green Net-Earth Net Foundation (GNEN) in Thailand

BRFO, a registered producer group, is located in the Mahachanachai District, Yasothon Province, in the northeastern region of Thailand. It currently has 244 farmer members certified as organic rice producers on a total area of 1 082.88 ha. BRFO owns a rice mill that processes organic rice and has an organic conversion scheme to support its members to convert to organic rice production. BRFO's organic rice project is part of the larger national organic network Green Net-Earth Net Foundation (GNEN).¹² GNEN helps build the capacities of BRFO extension staff and sets up the project's ICS. GNEN provides technical assistance and monitors the product flow through processing and packaging.

BRFO buys in the organic paddy from its members according to an agreed premium price set in consultation with Green Net Coop (GN). BRFO then mills the paddy with GNEN's technical assistance and delivers milled rice to the packing facility operated by the Rice Fund Organic Agriculture Cooperative (RFC). RFC is sub-contracted by Green Net Cooperative to pack the organic rice. All of the organic rice from BRFO is exported by the Green Net Cooperative. Certification is done by ACT, the local Thai non-profit foundation that IFOAM has accredited since 2000 (Panyakul, 2006).

Thailand case study 2: Top Organic Products and Supplies Company Limited (TOPS)

Capital Rice Company Limited (CRC), a registered Thai company, together with its Italian commercial partner Riseria Monferrato, identified the export of organic rice as a business opportunity. A project currently engages 130 farmers in the northern region of Thailand on the border of Chaing Rai and Payao Provinces. The farm sizes range from 4.2 to 4.6 ha. The project is handled by TOPS, a subsidiary of CRC. Chai Wiwat Agro-Industry Company Limited (CWA) is a local rice mill contracted by CRC to participate in the organic rice project by providing extension services to the targeted group of farmers and by organizing the milling service for the organic grain. CRC does the packing for the organic rice under subcontract with TOPS, while marketing is done by TOPS.

Currently, TOPS sells organic rice locally under Thai brands as well as exporting the organic rice overseas, mainly through its Italian trading partner. The certification is done by Bioagricert Company (BAC), an Italian-based company that IFOAM has accredited since 1996. The development of production technology is organized by the Parn Rice Research Station, a public

¹² Green Net-Earth Net Foundation is made up of a cooperative, Green Net, mainly aimed at export and marketing of organic and natural products, and an NGO, Earth Net, which promotes and supports organic agriculture. See www.greennetorganic.com/content.

research station. Also, many of the agencies under the Ministry of Agriculture and Cooperative provide additional free services to this organic project, including on-farm extension, monitoring and control of the farm production and mill operation (Panyakul, 2006).

Indian case study 1: Sunstar Overseas Ltd.

This project is located in northern India, extends over the Himalaya Tarai region. There are 190 farmers with a total acreage of 1 250 ha. The size of the rice plot is 0.25-0.50 ha. Monocropping low-input Basmati rice was the tradition before this project started in 2001. Since then, the farmers have been delivering millet and cleaned rice directly to the export trade firm, Sunstar Overseas Ltd. (“Sunstar”).

To facilitate certification and marketing, the trade firm that leads the project is involved as part of the ICS. The trade firm provides a premium price in the conversion period, technical assistance and inputs supply to farmers. Farmers are under contract farming for five years. Sunstar also processes and packages the rice for export. Farmers are collectively certified but market individually with the firm. The inspection and certification is done by SGS, Switzerland, and ECOCERT, Germany, following EU standards for inspection and certification. The certification belongs to the export firm (Katyal, 2005).

Table 2: Comparison of organizational structure in the Asian organic fragrant rice case studies

	TOPS case study 1 Thailand	BFRO/GNEN cast study 2 Thailand	Sunstar case study 1 India	UOCB case study 2 India
Internal Control System (organization and farm control)	TOPS and farmers' organization	Farmers' organization with support from GNEN	Sunstar and farmers' organization	Farmers' organization UOCB support
Infrastructure (transport/data processing facilities)	TOPS	BFRO supported by GNEN	Sunstar	UOCB (data processing facilities)
Extension services (training/technical assistance)	Sub-contracted to governmental agencies	GNEN	Sunstar	UOCB-COF
Processing (monitoring product flow)	Sub-contracted to CWA with assistance from governmental agencies	BRFO mills the paddy with technical assistance from GNEN	Sunstar	Local certified mill
Packaging	Sub-contracted to CRC	RFC	Sunstar	COF
Marketing	TOPS	Green Net Cooperative	Sunstar	COF-Rapunzel

Indian case study 2: Uttranchal Organic Certification Body

The Bio-Village Programme initiated by the Diversified Agriculture Support Project (DASP) was founded by the Uttarakhand Government in 1998. After completion of the last DASP project in 2004, an Organic Basmati Production Program was adopted by the Uttarakhand Organic Commodity Board (UOCB), a regional government initiative, and renamed the Organic Basmati Export Program (OBEP). Today, the Uttarakhand Government has over 1 200 bio-villages that have matured into organic commodity production units that are covered under ICS, and internally and externally inspected for certification. In the state, nearly 693 ha of cultivated land area involving 1 792 farmers in 162 villages is under various organic projects.

A Centre for Organic Farming (COF) was set up by the largest national funding organizations and plays a technical as well as marketing support role. The Uttarakhand State Seed and Organic Production Certification Agency (USS & OPCA) carries out internal inspection and certification. The Uttarakhand Organic Commodity Board supports processing with the only certified rice-processing mill and monitoring product flow for export. COF facilitates the export contract with a German company, Rapunzel, for organic Basmati rice. A total of 428 farmers were included in the 2004 programme year. Other farmers sell their produce at the district level in the market centres established in each district (UOCB, 2005).

4.2 CASE STUDIES ON ORGANIC FRUITS AND VEGETABLES

The organic fruits and vegetables chain is analysed through examples from the participatory certification in Brazil and the Hungarian and Czech Republic horticulture sectors. These supply chains have little in common. The Brazilian case study corresponds to a short chain that supplies local markets, where consumers and producers participate in the quality assurance system. The latter case studies correspond to traditional chains where individual farmers market individually to middlemen, the quality assurance system is government-driven, and organizational structures hardly exist. A summary of the characteristics of their business models is presented in Table 3.

Brazil case study: the Ecovida Network in southern Brazil

The Ecovida Network integrates more than 2 300 farmer families and their groups, 20 support organizations, 15 consumers' cooperatives, eight market enterprises and seven agro-industries in the south states of Brazil. The area of influence covers 170 municipalities in the Rio Grande do Sul, Santa Catarina and Paraná States. Farm size covers a broad range from 8 to 40 ha. The network is the result of a long-standing process among grassroots organizations working in the agro-ecological movement. Its main aims are to promote farmer sustainability and enhance group empowerment, rather than fulfil market needs. For this reason, strengthening relationships between producers and consumers to enhance local market development is crucial in the overall approach.

The basic unit of decision-making is the *nucleus*, which is made up of groups of farmers and consumers. Each farmer-consumer group establishes an ethical council, which is a technical decision-making body where technicians also participate. Its functions comprise inspection, monitoring, evaluation and advice to farmers inside the nucleus. The organic produce is

marketed in more than 100 ecological fairs and other alternative distribution channels such as consumers' and/or producers' cooperatives and specialized stores to cover the regional market's demand. Other marketing strategies include delivering processed ecological food to public schools and ecological baskets to poor neighbourhoods. Non-government support organizations offer a wide range of technical services such as technical advice, agro-ecological research, social organization, generation of technology, agro-processing and commercialization. Technical support could also be provided by extension agents from the local government. Ecovida provides certification as well as the right to use the logo (Santacoloma, 2005).

Table 3: Comparison of organizational structure in the organic vegetables in the Brazil, Hungary and the Czech Republic case studies

	Brazil	Hungary	Czech Republic
Internal Control System (organization and farm control)	Consumer and farmers' organization	No	KEZ o.p.s.
Infrastructure (transport/data processing facilities)	Farmers' organization	Farmers	Farmers
Extension services (training/technical assistance)	NGO+ farmers' field schools	Biokultura Association	KEZ o.p.s.
Processing (monitoring product flow)	Farmers + farmers' organization	Agro-processors firms/farmers	Agro-processors firms
Packaging	Farmers' organization Farmers +	Agro processors firms/farmers	No
Marketing	Farmers + farmers' organization	Agro-processors firms/farmers	Farmers

The Hungarian case study: the Hungarian vegetables sector

In Hungary, two groups of organic farmers can be distinguished: the smaller farms with a wide product range (fruits, vegetables, animal products) concentrating on the Hungarian market, and large monoculture farms (usually cereals, industrial crops) exporting to the EU market. A sample of 21 small-scale farmers from different Hungarian regions was selected for the study. The total number of organic farmers is 1 400, of which less than five percent produces fruits and vegetables. The average size of the farm considered varies from 7 to 50 ha; the supply chain is short. There are almost 200 000 companies in Hungary that process organic food, but only a few produce a considerable amount that reaches consumers throughout the country and even in foreign markets. Some of the processors also produce and trade with organic food. The largest concentrated market of organic foods can be found in Budapest and its agglomeration.

The most important distribution channels of organic foods are the *organic shops* and the organic markets, both mainly found in Budapest. The most important market is *Ökopiac*, which is a non-profit organization founded and operated by the Biokultura Association. The market is open twice a week and offers a widespread range of products. The farmers/ processors/traders pay a minimum fee to hire a stall. The organic shops are small retail outlets that sell organic and other health food; their numbers are limited and consumers must travel far to reach them. Most of them are settled in Budapest and only a few can be found in larger country towns. The products have

to be controlled and labelled organic foods. The national certification body *Biokontroll Hungaria Kft*, founded by Biokultura Association, acts in compliance with Hungarian regulations and EU Council Regulation (No. 2092/91) and has been IFOAM-accredited since 2004.

The Czech case study: the Czech vegetable sector

The organic fruit and vegetable production in the Czech Republic is still in its infancy and encompasses less than the 0.3 percent of total agriculture production. It is produced by 40 out of the 814 farmers engaged in organic production. A group of eight organic horticulture farmers were selected to assess the situation. The size of the farms varies but all are under 50 ha. Most of the horticultural farms are situated in Moravia and around Prague, the capital. There are two main vegetable production systems: the commercial production of chiefly root vegetables by large farms and the garden production of a wide variety of vegetables by small-scale farmers.

There are very few certified processors, which is a weak point in the development of the Czech organic market. A significant part of vegetable producers sell directly in local markets, particularly through farmers' markets and retail outlets, although box schemes, direct sale from the farm, distribution centres and other schemes are also in place. Organic certification is an important way to distinguish organic products from competing non-organic products and to justify the organic price premium. Inspection and certification of organic products and food is under the organization KEZ. An ICS supported by KEZ controls compliance with the law at the farm level, although there is no organic farmers' organization involved in organic certification. Producers are authorized to use the Czech Republic organic logo, which is officially registered with the Czech Government since February 2005 (Václavík, 2005).

4.3 SOME CONCLUDING REMARKS

- In the organic rice chain, producers are vertically integrated or linked in the supply chain targeting export markets. In the organic vegetable chains, producers in the Ecovida Network are horizontally linked in a fairly short supply chain targeting local and regional markets. In Hungary and the Czech Republic, producers participate individually in short supply chains driven by a promising domestic demand.
- Drivers in the organic rice chain are either exporters or NGOs that provide most of the business and technical support services required by the farmers; public-private schemes may contribute with technical development and technical advice, as in the TOPS case study in Thailand, or participate in the ICS as in the UOCB case study in India.
- In the Brazilian Ecovida Network, farmers, consumers and technicians participate together in the quality assurance system with support from non-government and occasionally governmental organizations, which also offer a wide range of technical, business and commercial services.
- The organic vegetables chains in Hungary and the Czech Republic are at their early stages and there are no farmers' organizations; quality assurance systems are rigorously controlled by social and governmental organizations.

5. Certification schemes and quality assurance system

This chapter analyses the role of stakeholders in the quality assurance system in three types of certification schemes and illustrates each scheme with an example from the case studies.

Organic agriculture distinguishes itself from other concepts of sustainable agriculture by having production standards and certification procedures. Private associations started to develop organic standards more than 40 years ago, and today at least 100 regional or national organic standards have been developed worldwide. Several countries have also formulated laws and national regulations on organic production, processing, certification and trade. Such policy and institutional development responds to an outstanding market expansion. However, the proliferation of standards may also restrict market access for farmers.

The expansion of the organic market is mainly driven by consumers' concerns over food safety and environmentally friendly production. Certification reassures consumers' confidence in the organic quality of agricultural processes. Certification therefore plays an important role in domestic and international organic trade since it enables organic producers to access export and local markets, and to obtain premium prices while improving farming practices. It is also a way to protect consumers, producers and traders against the misleading use of labels. Furthermore, it ensures transparency and acknowledges product conformity to organic regulations.

Most of the regulations require the products to be certified by an independent body that guarantees that they have been produced following the organic standards (Herrmann and Rundgren, 2006). Third party certification is the most internationally recognized certification scheme and may apply to individual farmers or grower groups. An alternative guarantee system is the participatory certification scheme, also called the Participatory Guarantee System (PGS). In this chapter, three organic certification systems are examined – participatory, third party individual, and group certification schemes. The analysis focuses on the role of the stakeholders and their relationships in the custody chain system. Table 4 describes the functions of the main issues in this system.

Table 4. Custody chain system issues and functions

Issue	Functions
Law/standards	Sets out conditions of organic production, certification and trade.
Accreditation	Accredits organizations for control and certification.
Certification	Supervises compliance with law, standards and procedures for organic agriculture.
Inspection	Carries out inspection at the farm and processing level.
Extension services	Helps to develop farmers' skills in technical and organizational aspects to comply with organic agriculture standards.
Internal Control System	Farmers' organization to be certified as a group.
Business model	Business and technical services to organic farmers.

5.1 THIRD PARTY CERTIFICATION – THE INTERNATIONALLY RECOGNIZED CERTIFICATION SCHEME

Certification procedures and accreditation mechanisms are tools in the quality assurance system to ensure transparency and compliance with the standards and regulations that define organic agriculture.

Certification procedures include inspection and certification. Inspection aims to verify and ensure that the production and handling of a product is carried out in line with certification standards. Certification, rather, confirms that those processes conform to standards. These activities could be carried out by the same certification body or an inspection body may act on its behalf.

Certification procedures should make it possible to track the flow from primary production through the entire food chain right to the final consumer. All operators in the product chain – farmers, processors, manufactures, exporters, importers, wholesales and retailers – must therefore be certified as acting in compliance with the organic standards and regulations (Kilcher *et al.*, 2006).

Certification bodies should be accredited to meet the criteria of competence, impartiality and transparency in the certification processes. Accreditation status is given (or granted) by an authoritative body based on the assessment of the personnel, standards and inspection and certification procedures (IOAS, 2005). Several countries have established official bodies for the accreditation of certification bodies, which undertake certification or registration of quality systems and may also certify organic certification bodies.

There are several accreditation mechanisms. *ISO/IEC 65 Guide*,¹³ a guide that establishes general principles for certification bodies, is seen as the most accepted norm for accreditation. The main reason is that its accreditation is required by a number of regulatory authorities, including the most important in terms of trade, EU Regulation 2092/91.¹⁴

¹³ *ISO/IEC 65 Guide, General requirements for bodies operating product certification system*, is a set of guidelines published by the International Organization for Standardization (ISO). See www.iso.org.

¹⁴ See www.ioas.org/05brochures/IOAS/0502_ISO65.pdf.

Another accreditation mechanism is offered by the International Organic Accreditation programme (IOAS), which runs an accreditation programme based on norms from the International Federation of Organic Agriculture Movements (IFOAM). The IOAS implements a multilateral recognition agreement where IFOAM-accredited certification bodies can become signatories and recognize the equivalence of each others' inspection and certification work. The IFOAM Accreditation Criteria Programme is adapted from the *ISO/IEC Guide 65*, but adds further detailed requirements relating to inspection and certification. The number of certification bodies currently accredited by IOAS is still low (see Table 5). IOAS accreditation is not yet recognized by EU authorities because IOAS is not a member of any of the Multilateral Recognition Arrangements (MLA) at the International Accreditation Forum (IAF).¹⁵

IAF, the world association of accreditation bodies operating in the field of product conformity assessment, is working to establish mutual equivalence agreements and recognition of standards among their own members. Although 47 national accreditation bodies are currently being recognized by the IAF (Table 5), this does not imply that all of them have already accredited any certification body in their own countries.

Since the EU and the United States are the most important markets for organic products, their respective regulations EU Regulation 2092/91 and the National Organic Program (NOP) are obligatory references for producers and exporters from developing countries. Satisfying these regulations implies compliance not only with the standards and procedures for production and labelling, but also those for the conformity assessment systems. To export goods to the EU, the local certification body should come from an export country listed as a *third country* on the regulation list, or ISO 65-accredited as a local body for import permit approval, or recognized by the authority of import in the required country of import (IOAS, 2005). There are only six countries that are approved by EU regulation as a *third country*, as shown in Table 5.¹⁶ The US regulation is more precise in its procedures and demands complete compliance from certification bodies to the NOP provisions. Out of nearly 100 certification bodies being accredited by the United States according to NOP, only one produce certified by these certification bodies is being exported to the United States (Kilcher *et al.*, 2006).

Table 5: Member countries in IAF, countries approved as EU third countries, and certification bodies accredited by IOAS and ISO 65 Guidelines

	Europe	North America	Asia	Latin America	Near East	Africa
IOAS	14	5	4	4	2	0
IAF	21	2	16	4	3	1
EU third country	1	0	2	2	1	0
ISO65	69	20	5	13		3

Sources: IOAS, 2006 (www.ioas.org); IAF, 2005 (www.iaf.nu); and ISO, 2006 (www.iso.org).

¹⁵ The International Accreditation Forum, Inc. (IAF) is the world association of Conformity Assessment Accreditation Bodies in the fields of management systems, products, services, personnel and other similar programmes of conformity assessment. See www.iaf.nu.

¹⁶ The following countries are listed: Argentina, Australia, Costa Rica, Israel, New Zealand and Switzerland (Kilcher *et al.*, 2006).

In terms of trade opportunities, small-scale farmers from the developing world face restrictions to achieve internationally recognized certification. They are restricted by a lack of institutional development and financial means in addition to the limited government support through public policies and regulations. For many importers in the developed world, a certificate from a national certification body is desirable as an import requirement. However, equivalence involves very few countries, as shown in Table 5. In fact, very few countries in the EU consider equivalence of norms among them. Therefore, the best recognized certification schemes led by international agencies are disseminated worldwide. They are formed by certification, inspection and/or branch offices distributed in several countries. The increased demand of this type of services has led to the development of a “certification industry” with its own economic interest.

5.1.1 The Czech Republic case study

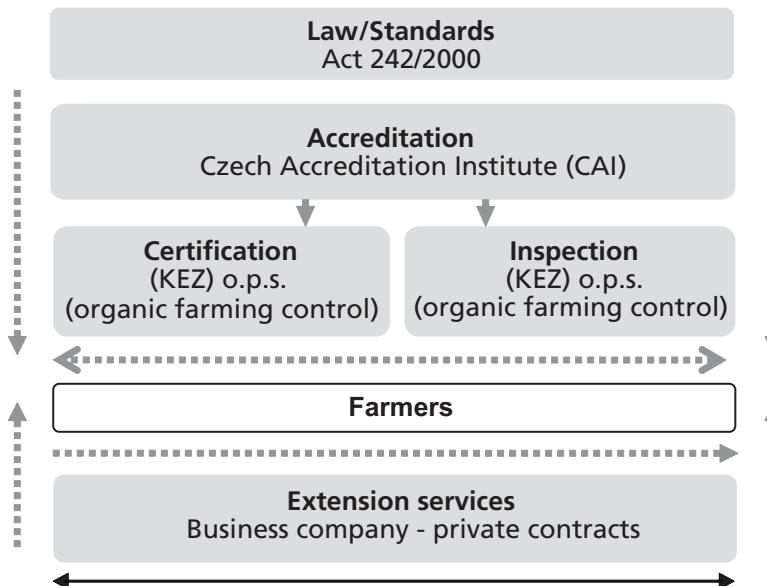
The conformity assurance system for organic agriculture in the Czech Republic currently follows EU policies and norms. After its accession to the EU in 2004, EU Regulation 2092/1991 also applies in the Czech Republic. Act No. 242 of 29 July 2000 on organic farming and the amendment of Act No. 368/1992 on administrative fees are also subordinated to the EU regulation (Václavík, 2005).

Organic control and certification is carried out by KEZ, whose function is to supervise compliance with the organic farming law. KEZ is accredited with the Czech Accreditation Institute (CAI) – a member of IAF – as a certification organization. Moreover, the European Commission has included the Czech Republic and KEZ in the list of *third countries* whose system of control and certification of organic farming is compatible with the EU system.

KEZ has separate decision-making units – a Department of Inspection and a Department of Certification. Each farm is inspected at least once a year and the inspector examines mainly field crops, animals, stables, farm accounting and other production aspects. The inspector fills in a special questionnaire that must be signed by the inspected farmer. The Department of Certification analyses the inspection report form and decides on certification. Farmers may appeal to the department if certification is not issued. If the matter is still unsettled, they can also appeal to the Ministry of Agriculture. Random inspections may be also carried out to verify GMO presence in organic products or the use of prohibited substances in the processing stage. Figure 2 shows the relations within the quality assurance system in the Czech Republic.

PRO-BIO, a non-governmental and non-for-profit organization, provides technical assistance, advisory services and marketing support. Farmers, traders and agro-processors are among their members as well as consumers, schools and providers of other services, who focus on ecological agriculture and the use of its products. PRO-BIO assists its members in the transition from conventional to ecological farming, helps them solve their technical and administrative problems, and supports the sales and promotion of organic products (Václavík, 2005).

Figure 2: Quality assurance system for organic agriculture in the Czech Republic



Czech organic farmers receive generous government support through the agri-environmental policies for farming activities, but the payment of certification fees and the provision of technical assistance are managed on a private basis.

Hungary, like the Czech Republic, had set organic regulations considered equivalent to the EU Regulation (EC 2092/91) before its inception in the EU.¹⁷ These countries have similar regulatory systems.

5.2 THIRD PARTY CERTIFICATION UNDER THE INTERNAL CONTROL SYSTEM (ICS)

Grower group certification is a scheme recognized by IFOAM and the EU Regulation as a mechanism to support the certification of small-scale producers. The scheme admits organized producers that are able to collectively manage production, handling and/or marketing. The group could be organized by a farmers' organization, an NGO, or a marketing company responsible for the project that will be the licensee and holder of an organic certificate.

The ICS is set up as a mechanism to ensure conformity to organic standards and requirements. In this case, external certification verifies whether the ICS is well established and evaluates its effectiveness and functionality. In order to perform the evaluation, the external inspector conducts random sampling of farmers. If the ICS works well, certification and inspection costs are reduced. Individual producer members are certified collectively and the organic certificate belongs to the ICS.

¹⁷ Switzerland, Israel, Argentina and Australia are the other countries recognized as equivalent to EU 2092/01.

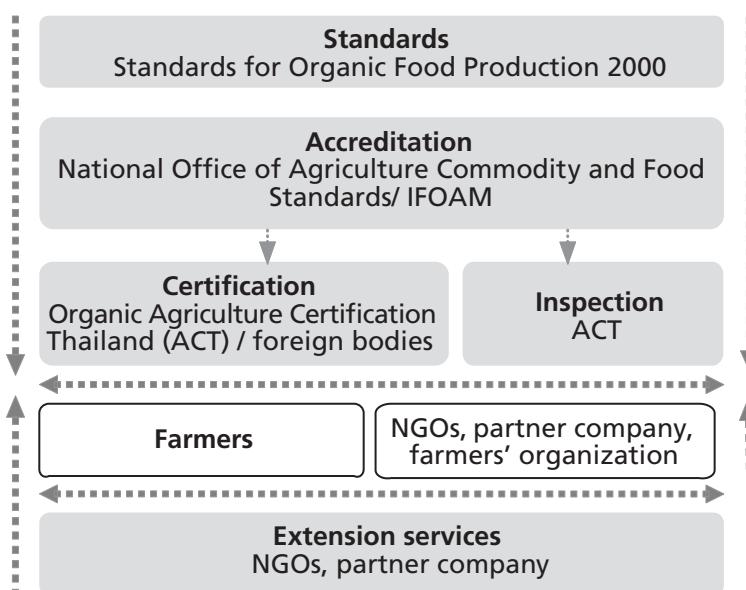
In the case studies on organic rice for export, two in Thailand and two in India, the grower group scheme operates to access organic certification. The following analysis focuses on the Thailand case studies to illustrate the institutional framework allowing grower groups to operate and export organic certified produce.

5.2.1 The Thailand case studies

The Thai Government adopted Standards for Organic Crop Production in 2000 after long internal discussions. As part of the conformity assessment system, Thailand also launched an accreditation programme and guidelines for national organic accreditation through the National Office of Agricultural Commodity and Food Standards (ACFS). To date, ACFS has accredited one local certification body, ACT, which received IFOAM accreditation in 2000.

In the first Thailand case study, the network organization Green Net-Earth Net Foundation (GNEN) and the farmers' organization Ban Ruea Organic Rice Group (BRFO) set up an ICS certified by ACT. In the second Thailand case study, an ICS was set up by Top Organic Products and Supplies Company Limited (TOPS), a subsidiary of an export rice company certified by Bioagricert.

Figure 3: Quality assurance system with the Internal Control System – Thailand case studies



There are not many differences in the procedures and compliance mechanisms between the two Thailand case studies. Some of the differences are: the conversion time, which varies from 12 in the BRFO case to 24 months in the TOPS case study; the allowing of parallel production of conventional and organic produce in the TOPS-Agricert case study, which is not allowed for export in the GNEN-ACT scheme; and the need to be re-certified by an EU certification body in the case of exports of ACT-certified produce to EU countries.

Along the entire production, post-harvest and processing chain of the produce, the project operator is responsible for ensuring the integrity of organic rice. Training and extension services, input supply services and careful supervision of handling and processing activities are some of the responsibilities carried out by the project. Figure 3 depicts the relationships in this scheme.

The two Indian case studies have a scheme similar to the Thailand case studies. In the first case study, the project operator, Sunstar, is the subsidiary of a rice export company that supports the group organization and holds the certification licence. In order to access markets in different EU countries, the ICS formed by the company and the group of farmers applied for various certification licences from European certification bodies. The second Indian case study is a government support scheme to help farmers gain market access of certified organic products in local and national markets. The Government provides technical assistance in ICS implementation and monitoring. Young farmers are trained/hired as organic inspectors to assist with the internal inspection of individual farms. An external certification body inspects compliance of the ICS with the organic requirements. Inspection fees are paid by the Government.

5.3 PARTICIPATORY CERTIFICATION OR THE PARTICIPATORY GUARANTEE SYSTEM (PGS)¹⁸

The PGS is analysed as an alternative scheme. It basically targets local or national markets and involves small farmers and agro-processors, traders and consumers in the certification process. Quality assurance relies on social conformity supported by participatory norms, procedures and conventions. Procedures and standards are usually based on IFOAM, Codex Alimentarius (FAO, 1999) or national regulations. As opposed to the previous schemes, decision-making on the status of certified producers is decentralized.

There is a diversity of schemes and methodologies in the participatory certification worldwide, notably the Community-Supported Agricultural Scheme (CSA) in the United States, the Taikei System in Japan, Keystone in India, and the Ecovida Network in Brazil. Despite this diversity, common values and principles have been identified, such as food sovereignty, appropriateness to small-scale producers, targeting of local markets, flexibility, the trust-building approach and co-responsibility (IFOAM, 2006).¹⁹ Such common principles were identified during the first workshop on participatory certification schemes held in Brazil on April 2004 and promoted by IFOAM, the Agroecological Movement for Latin America and the Caribbean (MAELA), and the Ecovida Network. The participation of representatives from 14 different countries indicates the importance of this alternative. The example of Ecovida, a Brazilian network of grassroots organizations²⁰ and member of MAELA, illustrates this scheme, as seen below.

¹⁸ After the first workshop on participatory certification held in Brazil on April 2004, this scheme has been referred to as Participatory Guarantee System (PGS).

¹⁹ See www.ifoam.org/about_ifoam/standards/pgs.html.

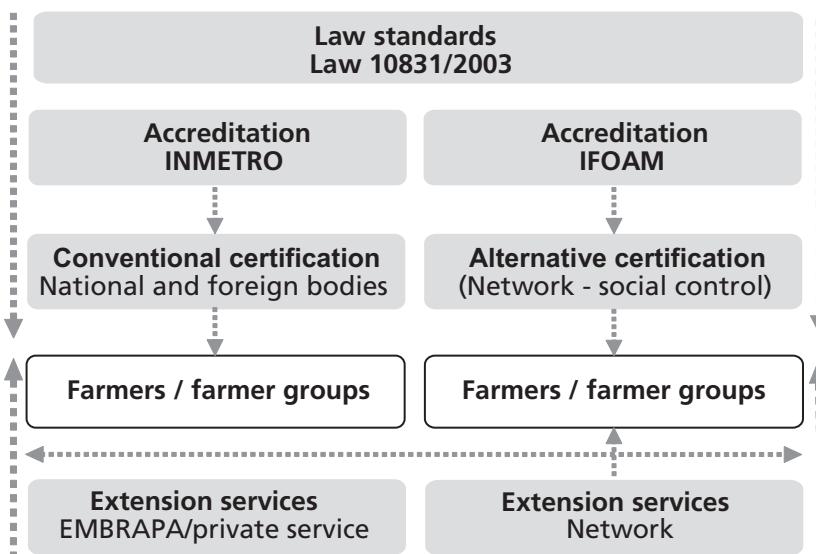
²⁰ Ecovida Network is formed by people and organizations involved in the production, distribution and consumption of certified produce.

5.3.1 The Ecovida Network case study in Brazil

In Brazil, Law 10,831 published on 23 December 2003 defines organic production along the value chain, recognizes that different types of organic certification might exist and that certified products may be sold directly if under some form of social organizational control. The acknowledgement of different production and marketing models, and certification systems has been an achievement of social movements in which the Ecovida Network actively participated. Figure 4 shows the parallel existence of third party certification and PGS, although only the PGS will be analysed here.

The principles of the participatory certification in the Ecovida Network are the promotion of farmers' sustainability and the enhancement of group empowerment, rather than compliance with market requirements. The recovery of agro-ecological systems and the concept of gender and age equity are also basic principles, which have resulted from long-standing discussions among grassroots' organizations. Participatory certification is based on peer review visits and social control, and is targeted to local and regional markets. In addition to the acceptance rules, the network has also established compliance mechanisms on organic standards, which are delivered through training activities such as field visits, farmer-to-farmer training and group discussions in order to provide advice on good practices and farm management issues.

Figure 4: Quality assurance systems in Brazil including the participatory certification scheme



Consumers participate with technicians and peer reviewers in the conformity assessment system and assume joint responsibility for the quality guarantee system in the *nucleus*. Each farmer group frequently establishes an ethical council as a technical decision body composed of technicians, farmers and consumers. Its functions include inspection, monitoring, evaluation and advice to farmers inside the *nucleus* and assessment of new member candidates. To avoid

conflicts of interest, the ethic council of one *nucleus* should undertake those functions in a different *nucleus*.

The admission process into the *nucleus* begins with the analysis of the requests for including new farmers. The request should specify farms and farm management characteristics. The ethic council then visits the farms and issues a report advising whether the new farmers can be accepted in the certification programme. The report includes an assessment and, if necessary, an indication of the necessary technical improvements. Upon acceptance, the successful candidates are visited and monitored according to certain set procedures.

In the participatory network, producers are certified as individuals and certification belongs to individual producers. PGS should markedly reduce the cost of certification for the small producers affiliated with an association because the external monitoring²¹ is done by the ethic council rather than by an external inspector. Small organic producers have thus been strongly encouraged to become organized.

²¹ In the participatory certification, the term “monitoring” is preferred to “inspection”.

6. Managerial skills and costs at the organization level

Chapters 4 and 5 introduced the marketing strategies and organizational structure involved in organic certification. The core of this chapter is the analysis of the organizational, managerial and business skills required by the lead stakeholders or project leaders, and the costs that they incur for effectively implementing and managing organic projects. Stakeholders driving this process could be NGOs, governments or business companies. Chapter 7 will analyse the costs and managerial skills from the farmer's point of view.

6.1 MANAGERIAL SKILLS

Particular managerial skills are required by supportive organizations to establish and manage organic certification. These may vary according to the certification scheme and characteristics of the supply chain. In the third party schemes, for instance, great emphasis is placed on planning and project management to guarantee success. In PGS, on the other hand, it is far more relevant to empower participants in the network to take an active role in understanding agro-ecosystems and building social organization.

This chapter will mostly focus on the Thai and Indian case studies on fragrant rice and the Brazilian case study on vegetables, where support organizations play an important role. In the Hungary and the Czech Republic case studies, organizations specialized in managing particular business projects to develop organic agriculture for farmers' organizations could not be identified. Most of the services such as technical assistance, research and extension are only available on a fully-priced business basis and are to be covered individually. This could be a possible area for further development by governmental, business or civil organizations.

The following are activities for which supportive organizations will need to develop particular skills:

a) Feasibility evaluation of the producers, areas and crops

The planning stage is critical in any organic project. The following planning activities are identified from the Thailand case studies: a site survey to find a suitable area for the organic project; assessment of production; assessment of producers and their organization; identification and selection of stakeholders; design of project activities; identification of supply chain actors; and selection of production technology (Panyakul, 2006).

b) Marketing and logistics

The required knowledge and skills relate to the logistics for managing market deliveries of the organic produce while meeting the quality of the organic process. These skills include managing input supply

and post-production activities to export or local markets. In the participatory certification scheme, market linkages are developed together by producers and consumers through a learning process, which is understood as developing social responsibility to supply sufficient and quality food.

Box 1: Supply chain management in organic rice – the Thai and Indian case studies

The coordination of marketing and logistic activities at different levels is challenging. All operators should be aware of organic standards and certification requirements. For instance, the manager should understand that organic rice needs to be handled so as not to mix with non-organic rice, right from the harvest to the packing stage, and that the organic rice must be clearly identifiable at all stages. The project must therefore provide for special bags to store the newly harvested paddy and specific warehouses or at least specifically designated areas for storage, accompanied by documentation for following and identifying the rice status at each handling stage. The logistics for managing the organic rice deliveries require utmost importance. In this regard, clean and preferably new containers should be used from the first-class rated shipping lines. Therefore, the freight cost would be a 20-25 percent higher than for the containers used to export conventional rice deliveries. These higher charges also account for direct deliveries made to destinations rather than those following a trans-shipment route. A direct route is taken to minimize any delays and stops that could generate infestations of the organic produce, among other problems, thereby spoiling its quality.

Source: Panyakul, 2006; Katyal, 2005.

c) Establishment of an Internal Control System

By definition, an ICS is “a documented quality assurance system that allows the external certification body to delegate the annual inspection of an individual group to an identified body within the certified operator”(IFOAM, 2003). Documentation and different legal forms describe the certified operator’s management structure. Noteworthy examples include: internal regulations, field records, maps, inspection protocols, farm inspection reports, farmers’ agreements and post-harvest procedures. The supportive organization should ensure that these elements are not only described, but are operational. All the actors in the chain and their relationships should be identified and documented in order to set up an ICS. If some players in the chain are not part of the ICS, they should have contractual agreements with the ICS managers.

Box 2: ICS in Thai organic rice case studies

The basic structure of the ICS should include: the overall responsible body that is licensee to the external organic certification agency; the organization that will be responsible for implementing the internal control activities of the ICS; the company that will be responsible for processing and handling; and the producer members. All of these players, if not an integral part of the same body, need contractual agreements to ensure that they agree to undergo organic certification requirements of the certification agency and that they are accountable to the project holder (the licensee). The company responsible for processing-handling and/or internal control may be external to the project holder, in which case sub-contract agreements must be drawn in order to regulate their relationships.

Source: Panyakul, 2006.

d) Assessment, preparation of inspection documents; organization of organic inspection; local knowledge; and field assistance

This stage includes designing forms and developing an ICS manual, a grower member file system and simplified organic standards to serve as reference for farmers. Contractual agreements with producers and sub-contractors must also be signed and skills developed for assessing risks in terms of certification.

Box 3: ICS in the Uttarakhand Organic Commodity Board (UOCB)

The following requirements had to be satisfied in order to establish the certification scheme at the farmers' organization level in the Uttarakhand Organic Programme:

- One member from the farmers' group had to be trained on the certification standards and quality control.
- The members of the group had to be trained on the required documentation.
- Internal inspectors had to be trained on inspection skills.
- The farmer organization needed a facility where the documents could be kept safely.
- The functions of the approval committee had to be well defined.

Source: UOCB, 2005.

e) Technology development

Supportive organizations and farmers should be aware of the production and post-production technologies permitted in organic produce. Different organic crops require appropriate technologies to cope with specific problems. Research institutions are often involved in the development of these technologies, whereas extension services and NGOs provide technical assistance. As a general rule, the two basic production technologies needing the most attention are soil fertility management and pest management techniques. The sustainable use of agricultural inputs, with emphasis on local resources, is a challenging task. In the PGS and ICS schemes, organizers need skills and knowledge in participatory research tools, design of training manuals and training.

Box 4: Actors in technology development –The Ecovida Network case study

At the local level, supportive NGOs of the Ecovida Network provide technical assistance to farmer groups working in organic production, marketing and processing. The NGOs are occasionally associated with universities and research institutions to undertake specific research programmes according to farmers' needs. The Governmental Agency for Technical Assistance and Rural Extension Services (EMATER) also provides technical assistance to farmer groups in some municipalities, especially in the southern and southeastern states of Brazil. During the previous administration in Rio Grande do Sul, EMATER was explicitly oriented towards ecological agriculture in the State (A. Goncalvez, personal communication, 2005).

Source: Santacoloma, 2005.

f) Preparation of training materials and documentation forms

The supportive organization must plan and design training materials, as well as develop a research plan and documentation forms. The implementation of an internal mechanism to comply with organic standards and certification is required. This mechanism implies acquiring knowledge on organic standards, technical skills in farm inspection and report writing. Farmers would need to be trained in organic farming activities, organic standards and in the establishment of ICSs.

Box 5: A training curriculum – lessons from the Thai and Brazilian case studies

In both the Thai and the Brazilian case studies, training materials were developed for farmers on organic farm management (including soil fertility management and pest management) and certification (such as organic standards and certification requirements). In the participatory scheme, the design of the training manuals and activities implies that organizers need skills and knowledge in participatory research tools and material design. Managers may be able to create awareness among farmers on the importance of collective learning and alternatives for managing farmer groups.

In addition to these topics, in the Thailand case, project staff received in-depth training on ICS documentation, ICS farm monitoring, report writing and training skills.

Source: Panyakul, 2006; Santacoloma, 2005.

g) Post-production management

After production, specific managerial skills are needed for handling, packaging and storing. There are specific requirements for these activities, which involve knowing and choosing the appropriate technology, machinery and equipment.

Box 6: Post-harvest management in organic rice

Storage has to be done separately from all other produce in order to avoid cross contamination, and in a clean and dry place to prevent the moisture level from generating infestation in the organic produce. Organic produce has to be handled and packaged with outmost care: packaging must be done in clean bags, and hair cover and hand gloves must be worn during packaging. The processing is done separately from that of conventional paddy to avoid cross contamination.

Source: Katyal, 2005.

h) Sustainability of an organic certified produce project

Aspects in the certification process requiring further institutional support and development of skills and knowledge are:

- organization and training of the administration of the certified group;

- development of an appropriate mechanism for producer-cost-share;
- auditing;
- training and informing of farmers and inspectors;
- internal farm control for overseeing physical farm inspections, evaluation and documentation;
- monitoring of product flow (documentation of all steps of product flow, purchase, transport, stocking, processing, sales).

6.2 CALCULATING THE COSTS ASSOCIATED WITH THE SUPPLY OF CERTIFIED ORGANIC PRODUCTS

A value chain management approach was considered for calculating the costs associated with the supply of certified organic products. The conformity measures and the recording systems to monitor product quality depend greatly on the market targeted with a certified produce. The compliance with requirements in a specific certification scheme may involve managerial changes at the production, processing, certifying and marketing levels to assure the integrity of the organic produce. To this aim, managerial and technical skills should be developed along the chain. The costs of certification therefore include those relating to setting up a quality assurance system as well as to improving managerial and technical skills at different levels. This approach differs from previous studies where the emphasis of the costs analysis was on the social and environmental impact of certification, either at the farm (Dankers and Liu, 2003) or at the macro-economic level (Wynen, 2004).

The project leader/manager – the NGO, trade firm or ICS – may incur costs for items involving planning and management of activities in training, marketing, technology development, organization and/or certification. The project manager should consider, for instance, staff salaries and operational costs in the set-up and maintenance phases of the project. Marketing costs may be shared among the different stakeholders participating in the chain.

To show the differences in the type and extent of costs that each scheme may incur, three case studies will be analysed in more depth: two case studies from the third party certification under ICS which target exports, the BRFO-GNEN case study from Thailand and Sunstar from India; and a third case study under the PGS managed by the Ecovida Network in Brazil.

Type of costs

Setting-up costs

At the production level

- *Project planning:* The costs involve project design, project programming and the setting up of the required business support and technical services.

- *Technology development:* These costs may be associated with developing field technology directly at the farm by using participatory methods (such as Farmers' Field Schools), as in the BRFO-GNEN case study (Thailand) and in the Ecovida Network case study (Brazil), or by accessing technological research centers, such as in the Sunstar case study (India).
- *Cost of conversion:* In Sunstar, the project manager paid a premium price to the farmers during the three-year conversion period in order to commit them to continue within the project.
- *Training and extension:* These costs are for developing/adapting curriculum and training materials, and for running the training programme (in terms of staff time and materials).

At the certification level

- *Establishing a farmers' group:* As a condition to establishing an ICS, a legal organization should be in place with a documented description of the management structure and internal regulations. In the particular case of the Ecovida Network, forming a legal entity is a condition for membership.
- *ICS establishment:* These costs cover development of farms and farm visits in order to gather information for ICS documentation, farm pre-inspection and assessing farmers' training needs.
- *Training:* This refers to particular training on standards and regulations of personnel, internal inspectors and farmers.
- *Record keeping and accounting systems:* This basically refers to costs for preparing documentation and collecting information at the farm level for internal and external inspection.

At the marketing level

- *Marketing planning:* All marketing activities and costs are closely related to the type of certification, certification body appointed and type of markets. The import country has specific demands to meet, particularly to provide documentation, which should be sorted out by the exporter.

Ongoing costs

At the production level

- *Technical development and ongoing training* should continue after the project is set up.

At the certification level

- *Certification fees:* Both in the Indian and Thailand case studies, the support organization is part of the ICS and pays the certification fees of the farmers' group and the agro-processing firm .

- *Monitoring and social networking:* In the Ecovida Network, there are several activities for strengthening social networking and training, rather than inspection and verification of compliance with standards. These include participation in seminars, peer review visits to farmers, and selling in fairs, which imply transport and time costs incurred by family members. Once the project is set up, a number of activities require permanent attention, which demand regular time costs. These include: ongoing training, internal farm visits, peer review visits to other farmers, and maintenance of record keeping and accounting systems.

At the marketing level

- *Market skills development:* Costs are associated with participating in national and international fairs in order to research demand requirements and/or install new shops. Organizations participating in both the export and in the participatory scheme incur these costs.

The different costs incurred in each one of the three case studies is shown in Table 6. Marketing costs such as cleaning, selection and sales were assumed directly by the farmers in the Brazilian case study. Conversion costs were not relevant at the project level in the Thailand and Brazilian case studies. There were no certification fees or inspection visits in the Brazilian case study.

Table 6: Setting-up and ongoing costs for organic certified produce at the organization level

Production	Setting-up costs			Ongoing costs		
	Case study			Case study		
	I	T	B	I	T	B
Project planning	x	x	x	Technological development	x	x
Technological development	x	x	x	Ongoing training	x	x
Costs of conversion	x					
Certification						
Establishing farmer groups	x	x	x	Certification fees	x	x
ICS establishment	x	x		Visits and inspection	x	x
Training	x	x	x	Monitoring and social-networking		x
Record keeping/ Accounting systems	x	x	x	Ongoing training	x	x
				Record keeping/accounting system	x	x
Marketing						
Marketing planning	x	x	x	Marketing management	x	x
Investment in facilities	x	x		Cleaning and selection	x	x
Developing market skills	x	x	x	Transport to the markets	x	x
				Sales	x	x

Note: I= Indian case study; T= Thailand case study; B= Brazilian case study

6.3 COST AND BENEFIT ANALYSIS AT THE ORGANIZATION LEVEL

In Table 7, the set-up and maintenance costs at the organization level are shown in terms of costs per farmer per year. The most prominent result is the large difference between the selected Indian and Thailand case studies in the total cost of setting up an organic project. In the maintenance phase, where information was also available from the Brazilian case study, costs continued to be many times higher for the Indian case study than for the other two analysed case studies.

When carefully examining the cost structure in the Indian case study, the costs associated with enhancing production and marketing activities were the most prominent. Costs included payments to staff for setting up project activities, such as input supply, business and technical advice, market linkages and certification. The premium price payments to the farmers enrolled in organic cultivation explained a large percentage of the marketing costs. The firm paid a premium to the farmer during the first three years of the conversion period, even when the product could not yet be labelled organic and consequently, could not obtain a premium in the market place. The firm considered the costs as a long-term investment to ensure product availability because farmers are under a five-year contract with the firm. The certification costs more than doubled in the fourth year due to triple certification making certification for the Indian case study very costly. The triple certification represents a financial burden in two ways: as direct certification fees, and as indirect costs to keep business planning, management and marketing activities separate in response to the diverse requirements of each import country.

In the Thailand case study, the ICS system implementation and training activities accounted for most of the costs, which were not much different at the set-up and maintenance phase. Some reasons explaining the relatively lower costs than in the Indian case study may be related to the nature of the particular value chain selected, which is a vertically integrated supply chain with low transaction costs. In the cost structure, costs to directly support the farmers' certification are relatively higher. Main activities are related either to capacity building, such as the design of training manuals and training programme, or the building of an ICS through participatory learning. The costs in the Indian case study are higher mainly for the reasons previously given: first, the payment of premium price to the farmers during the first three years of conversion period, and second, the need to have multiple certification in order to access to markets in four different European countries. For reasons of confidentiality, it was not possible to carry out the cost-benefit analysis of these two examples.

In the Brazilian case study, the set-up phase dates back to several years ago, making measuring difficult; data were available only for the maintenance phase. In the cost structure, the highest costs were related to technological development and strengthening of farmers' associations. Technological development includes participatory learning through peer review of other farmers and participation of consumers. Educational and social control should be in place involving the food chain actors in order to ensure the integrity of organic food. Planning and implementing their participation in meetings, field and markets activities and other social events are time-consuming activities that represent costs for the organization.

Table 7: Comparative costs at the organization level (US\$/farmer/year)

Item	Indian case study		Thailand case study		Brazilian case study
	Set-up	Ongoing	Set-up	Ongoing	Ongoing
Production	127	100	6.1	8.1	50
Certification	18	37.1	24.7	16.5	20
Marketing	185	139	0.6	12.5	12.5
Total	330.00	276.1	31.4	37.1	82.5

Note: Exchange rates: Thailand (US\$1:40 baht); India (US\$1:44 rupees);

Brazil (US\$1:2.5 reais).

Source: Author's calculations

Benefits

Benefits for the supportive organizations are both monetary and non-monetary. Most of these organizations tend to consider the non-monetary benefits – social, environmental and organizational – just as important as the monetary ones. The supportive organizations also obtain benefits from better market access, knowledge and skills in ICS management and improved planning capabilities in the supply chain. They all contribute to strengthening farmers' self-confidence and social networking to support better rural societies.

In a classic analysis of the subject, a cost-benefit ratio would have to be calculated; however, accurate information on the profits of these enterprises is not available, because business managers are rather reluctant or vague addressing this topic. Nonetheless, the benefits identified and ranked by organizations' managers as the most important are highlighted:

- *Knowledge and skills acquired in setting up an ICS* – Basically, the knowledge acquired is reflected in better project organization and management. When farmers' organizations are involved, they develop skills in collective farming planning, monitoring, documentation and market requirements. Developed skills in an ICS could set the basis for generating quality employment in rural areas. In the second Indian case study, for instance, a professionally trained and experienced team of ICS specialists is now available. This team is made up of young farmers trained as internal inspectors who are also able to provide extension support to farmers. It is expected that internal inspectors will continue to provide extension services as a private business after the project finishes.
- *Knowledge of organic production technology* – An ample range of knowledge and skills on organic technologies are developed, which are difficult to quantify. These include understanding adaptable technology interventions basically by adopting measures and practices appropriate to local conditions and small-scale farmers. Staff skills in technology development improve organizational effectiveness to deliver technical advice services.
- *Quality improvement for farm produce*: The improved quality of produce is usually recognized in the price premium. The average premium over the market price given to farmers is between 10 and 25 percent, depending on the organic status of the farms, quality of produce and prevailing market price in the crop year.

- *Established social networking:* This is also a non-monetary, non-quantifiable benefit, which led to the building of social legitimacy. In Brazil, the alternative certification has been recognized in the legislation as appropriate to small-scale farmers' circumstances.
- *General improvement of supply chain planning:* The supportive organizations provide better support to farm members' input, knowledge and buy-back schemes. In the Indian case study, for instance, managers see a great benefit in the full control of agricultural and agro-processing activities through contract farming schemes. It facilitates a stronger agri-input distribution and supply system enabling the company to comply with export requirements.

7. Managerial skills and certification costs at the farm level

Chapter 6 analysed the knowledge and skills required as well as the costs involved at the support organization level to set up and maintain organic certified producers. The analysis focused on the third party certification for farmer groups under the ICS and the PGS. The current chapter deals with similar analysis for the three certification schemes at the farm level.

7.1 PROFILE OF PRODUCERS

Organic farmers in the case studies have different profiles. They differ in type of crop, institutional organic development in the country, and particular project characteristics. Organic rice producers in the two Thailand case studies are small-scale, varying from 4.2 to 5.6 ha. In contrast, in both Indian case studies, farmers are usually very small-scale (0.2 to 2 ha), typically growing rice in a monocropping system, and with extremely low literacy. Organic vegetables producers are very heterogeneous in Brazil in terms of farm size (8 to 40 ha), diversification patterns and literacy, most of whom are educated at the middle to high-school level. In the Czech Republic, most of the organic vegetable producers are small-scale farmers (5 to 8 ha), although there are also large-scale farmers (over 50 ha) using diverse cultivation patterns. Large-scale farmers cultivate mostly root vegetables and a limited number of crops, while smallholders grow a wide variety of vegetables in small gardens. Only about 40 farms are considered horticultural, producing a mix of organic vegetables and/or fruits. In Hungary, although the typical fruit- and vegetable-producing farms are under 100 ha and even more typically under 50 ha, there are also large-scale farmers (over 500 ha) producing fruits and vegetables in small fields along meadows and pasture. Farmers' literacy level is usually high in the last two cases.

7.2 MANAGERIAL SKILLS

Farmers' necessary capacities depend greatly on the product type and the part of the value chain managed by each farmer or farmer organization. Given the diversity of farmers' profiles, the managerial skills needed are also diverse. For instance, while most of the organic rice farmers produce and sell rice immediately after it has been threshed, some farmers in the Ecovida Network from Brazil add value either by selling fresh fruits and vegetables directly in local fairs or by processing, packaging, loading, transporting and/or marketing processed products. Each one of these activities requires compliance with certification standards.

Farmers should clearly understand the agro-ecological conditions in the farm and be able to manage their activities in accordance with organic principles and requirements. Farmers

should consider the use of renewable resources, exploiting on-farm resources and recycling. They should plan how to eliminate or minimize the application of agrochemicals or other materials, avoiding overload of agro-ecosystems with nutrients. They should also identify how to efficiently manage soil and water resources, reducing the use of fossil energy. In addition, farmers are responsible for delivering their products in accordance with specific harvesting and post-harvesting procedures in order to maintain organic integrity. Differently to “lacking chemicals”, as organic is sometimes understood to mean, organic production implies developing farmers’ knowledge and skills for better farm and business management.

In the particular case studies of the Czech Republic and Hungary, there are certain compulsory tasks for the organic farmers in the conversion plan: a rotation plan, a manure handling and compost production technology and changes in the number and variety of animals.

There are minimum conditions for an organic farmer to participate in the Organic Farming (OF) and the Agri-Environmental (AE) subsidy schemes. These criteria include a minimum size of land, a soil nutrition plan, registration and compliance with national organic law, and a minimum of one training and two inspections per year (Juhász, 2005; Václavík, 2005).

Managerial skills at the production and post-harvest level

Technology development

Each farmer has to determine the specific production management suitable to his/her farm conditions. Some factors influencing this decision are crop type and variety, soil topography, water conditions, geographical location, and social and market circumstances. Farmers must consider including technology development in the agro-ecosystem for soil fertility management, pest control and pest management. In particular, in rice production, prevention and control of external contaminants are key to keeping organic integrity in the own plots.

Box 7: Understanding agro-ecosystems

Sunstar’s experience reports how the process of organic cultivation at the farmer level poses some difficulties: crop rotation cycles used traditionally for years need to be improved; agronomic practices have to be oriented towards the organic mechanism of cultivation; and the natural process of immunization of cultivated crops must be initiated through enhanced supplements in the form of natural agri-inputs.

In the Brazilian case study, although agro-ecological principles are learned in groups under participatory methods, each farmer has to identify the specific production management suitable to his/her farm conditions. Some factors influencing managerial decisions are crop type and variety, soil and water conditions as well as social and market circumstances. The NGOs within the network have accumulated a stock of technological alternatives to assist farmers, which are applied while taking into account their interest and the particular potential and constraints in each farm setting. An adjustment process between the farmer and technological supply is followed where farmers develop managerial skills to properly apply selected technologies.

Source: Katyal, 2005; Santacoloma, 2005.

Fertilizer management

Farmers need to develop knowledge and capacities for effectively managing and recovering soil fertility conditions. They need to know the soil and crop fertilizer needs, the type of alternative fertilizer available at the local level, and type of fertilizers approved by the certification body as well as strategies to recover soil conditions in the short and long term.

Box 8: Fertilizer management

In the Indian case study (Sunstar), different manures are used selectively and not simultaneously. Their application rate depends on soil conditions and crops cultivated. Vermicompost, green manure, and organic manures are worthy of mention. In the Brazilian case study, the use of green cow manure and allowed minerals are good practices that perform better than conventional alternatives. Soil management practices such as non-tillage or minimum tillage combined with gentle soil rotation have also proved to improve soil fertility.

Source: Katyal, 2005; Santacoloma, 2005.

Pest management and pest control

Despite improvement in pest management experienced by organic farmers, it remains the most cumbersome skill to learn. It involves identifying pests in the field and understanding the dynamics of the pest-predator equilibrium and the use of natural enemies, among others (Panyakul, 2006).

Box 9: Pest management

Pests are difficult to manage in organic rice farming because the rice farming agro-ecosystem is very complex, consisting of a large group of natural enemies that help control the pest population. The pest-predator balance is upset when non-discriminative pesticides are sprayed. The key strategy of preventive pest management in rice farming is to avoid all pesticides and encourage natural enemies by providing them with sufficient breeding and living spaces, and alternative food sources. This can be done by leaving natural areas around the farms undisturbed and keeping the patch of natural vegetation within the rice fields, especially along the earth bund in the rice fields.

Source: Panyakul, 2006.

Prevention and control of external contaminants

These particular skills are important for organic rice producers as spraying contaminants is a common practice used for controlling weeds by conventional farmers in the highlands. The risk of drifting is high for rice producers and others who cultivate in the lowlands.

Box 10: Prevention of external contaminants

Organic farmers may adopt measures to prevent possible contaminants through assessing risks and implementing appropriate prevention controls. The greatest risk is that conventional farmers use prohibited substances in the cultivation season. Organic farmers must ensure that the earth dikes of the organic fields are large and strong enough to prevent continuous flow of contaminated water into the organic fields. Also, when neighbouring conventional farms spray their fields with prohibited substances, the organic farmers must install buffer zones to prevent drift. These can be done by planting buffer crops of a different kind or variety to the crops intended for certification. The produce of the buffer crop must be separated from organic produce and cannot be sold as organic.

Source: Panyakul, 2006.

Post-harvest practices

Organic rice producers do not require special abilities for post-harvest, except to deliver clean and selected rice to the group. For vegetable producers this might involve merely washing and storage, as reported in the Czech case study, or selection, cleaning, packing and transport of products to the market place, as in the Brazilian case study.

Box 11: Post-harvesting activities

Most of the farmers plan to periodically harvest their vegetables to be offered as fresh produce in the weekly markets. Occasionally, farmers also process them as bottled vegetables. Similarly, fruit growers have different strategies to handle products after harvesting. Some farmers sell directly in local fairs or specialized organic stores around the villages in the region. Others prefer to store their fruits while harvesting in order to sell all the produce to regional retailers.

Source: Santacoloma, 2005.

Managerial skills in certification

Capacities needed by farmers at this level depend greatly on the certification scheme and farmers' educational level. In the third party scheme, the main skill to learn is documenting and keeping records on the product flow in the farm. This activity may be complicated, tedious and time-consuming for farmers from the Czech Republic and Hungary, but could be relatively simple for organic rice producers due to reduced number of used inputs. In the PGS, organizational skills and the search for alternative market channels are additional skills to be developed.

Box 12: Record keeping and alternative distribution channels

Record keeping in the Indian case studies. Farmers keep a diary for recording their day-to-day farm activities. Since all the farmers are under-educated, the diary is designed so that they can record all their farm activities as desired by organic standards in their own language. This diary is regularly checked and verified against the visual inspection conducted by the supervisors and officer of Sunstar and UOCB.

Alternative distribution channels. In the setting up of alternative certification, farmers participate in a learning process and acquire responsibilities within the farmer group. The farmers' group should endorse the inclusion of new members in the certification process where it is located. This group should submit an application form to an ethical council from another group asking for a formal inspection of the farmer concerned. The farmer is made aware that he/she has to contribute to the certification process by participating in various activities.

Source: Ajay, 2005; Santacoloma, 2005.

Managerial skills in marketing and contract farming

Since organic agriculture is very information-intensive, farmers must be able to clearly communicate the advantages of organic production to the market. All organic products produced on the farms have to be labelled organic, delivered to the market in separate containers, and offered as organic (Václavík, 2005).

In the Sunstar case study (India), farmers are required to develop capacities to enter into contract farming activities. The decision-making process for crop planning, cultivation and procurement involves mutual consent of the parties, business firm and farmers. The crop contract with farmers covers a five-year period. The clauses include crop type to be cultivated, pricing, purchase policy, terms of payment, additional premium, responsibility of the firm and farmers, conditions of non-compliance and termination of contract. The regular discussions between company and farmers are based on the usage of agri-inputs, disease and pest attack, fertility of soil and crop management, among others.

Box 13: Selling organics

The ability to clearly communicate the advantages of organic production to the market is very important since Czech farmers were not used to "promoting" their products under the old regime: the government simply bought them. The situation has completely changed today; the communication skills and marketing savvy are now extremely important, particularly in the organic business. The pressure from conventional marketing structures, putting price before quality, is enormous. Successfully competing in this environment requires farmers, particularly smallholders, to have the will and desire to learn new skills, try untried steps and be courageous.

Source: Václavík, 2005.

7.3 COSTS AND BENEFITS AT THE FARM LEVEL

Calculating costs

In order to produce certified organic products, farmers incur costs for setting up and maintaining organic farming activities. Setting-up costs are time-limited costs or one-off investments in order to make changes in the productive system to become organic. Ongoing costs are those incurred to maintain certified organic activities. According to Henson and Jaffe (2007), these costs may also be called “non-recurrent” and “recurrent” costs. These authors discussed the costs of compliance with food safety standards as those “additional costs” that government and/or private enterprise “necessarily” incur in meeting the requirements of a given standard in a given export market (Henson and Jaffee, 2007). In the current study, however, the overall production, marketing and certification costs are calculated. The reason for this is that it is not enough to just introduce additional measures to comply with a particular requirement for organic farming certification, but farmers must transform their overall farming and management systems in order to become certified as organic farmers. These costs may comprise investments, services and input procurement, learning costs and certification fees. The costs are then compared to the benefits in order to estimate the farm profit per hectare. The benefits are calculated by taking the average production per farm per year (kg/ha/year) and multiplying it by the price of the product (US\$/kg), including the price premium when appropriate.

Marketing costs may sometimes be shared among the participating stakeholders. In the Thai and Indian organic rice case studies, marketing costs at the farmer level were not relevant because the firm or project organization managed the produce from the farm through post-harvest, processing, marketing and export. In organic fruit and vegetables, farmers manage different marketing activities according to their own resources and capabilities, which may vary the costs in the selected cases.

Type of cost

Setting-up costs

- *Costs of conversion:* These costs vary according to the previous resource management system. The costs to introduce the organic system might be high in terms of learning and financial resources when they had agrochemical intensive system. Costs may be insignificant in systems that have followed agro-ecological principles for a long time. Another factor influencing farmers’ costs is the development of organic technology, if locally available and affordable.
- *Productivity losses:* Farmers may incur these costs at the beginning when they should convert from highly chemical input systems into organic systems. Costs could be significant due to lack of knowledge and skills in managing predators, weeds and diseases by using agro-biological measures.
- *Investment in infrastructure:* This is particularly important in organic rice where the improvement of earth dikes is needed to prevent drift and contamination from the surrounding fields. The construction of shady compost or fences to prevent animal grazing green manures is a measure often taken in organic systems.

- *Establishing the ICS:* These are costs for attending training events and monitoring and inspection activities, visits, meetings, courses and field days. These costs also include time spent by family members to attend meetings and travel expenses.
- *Setting up an accounting system:* This entails establishing record-keeping activities and accounting systems, which could be time-demanding activities for some farmers. These costs are related to time and travel by family members in training and updating documentation activities.
- *Transport and marketing facilities:* Transportation vehicles and fair stalls can be owned individually or collectively. Some investments are required for trucks and pick-ups for transport, packaging facilities and agro-processing plants. If there are collective facilities, farmers share the responsibility of transporting, processing, packaging and attending sales according to defined group rules.

Ongoing costs

- *Soil fertility management:* Associated costs may be very high depending on the soil type and measures to be taken. Some examples are costs associated with the purchase of seeds for leguminous used as green manure, major transport costs for vermi-compost or other types of compost, the inclusion of a new crop in rotation, and the use of perennial crops in an intercropping system.
- *Pest management and pest control:* Adequate pest management in organics requires farmers to have intensive knowledge and skills in their own environment. Recommended practices seek to avoid alteration or simplification of the ecosystem by using preventive measures. Manual or mechanical weeding to control weeds is a cumbersome activity with a high cost for farmers. Some minerals provide essential nutrients that help strengthen the plant leaves and fruits against microbiological attacks without leaving toxic residues after their application. Farmers should have knowledge of local available minerals and substances.
- *Certification fees:* These costs are relatively high in the Czech Republic and Hungary case studies where farmers are required to pay fees separately for registration, inspection and monitoring on an individual basis.
- *Training and meetings:* These costs are associated with the number, type and timing of activities planned by the organization and the requirement for assistance. These meetings have a broader scope than those for establishing the ICS. Training provides farmers with knowledge and skills in various matters for improving the organic systems. In the participatory scheme from Brazil, farmers' participation in meetings also facilitates the exchange of information with consumers in events such as fairs, courses and field visits.
- *Marketing management:* Market costs include the cost of all the activities from post-harvest and handling until the product reaches the market place. Costs are associated with labour for selecting, cleaning, processing, packaging and/or transport. Packages used for fresh produce are simple and may include wood or plastic boxes. In processed food, packaging is more complex because only organic preservatives are allowed. In addition, packaging must often comply with standards established for conventional foods.

- *Market skills:* A lengthy process for building capacities is required to develop market skills. This process sometimes requires a great deal of voluntary work and enthusiasm in the learning process.

Table 8 shows a general cost structure to produce organic certified products at the farm level. Not all the costs need to be considered in each particular situation. For instances, the following differences in the analysed case studies are to be highlighted:

Costs of conversion and production losses are important in the Czech and Hungarian cases but not in the others. In these countries, farmers who have used conventional means need to follow a conversion plan, which can be costly. It is also important to note the importance of investments in infrastructure for the four organic rice case studies, which are for the construction of earth dikes to prevent drift and contamination. No particular investments are needed in the organic fruits and vegetables case studies.

Next, at the certification level, it is important to observe that the Czech and Hungarian case studies do not incur costs for farmers' organizations. Farmers in Indian case study 1 and Thailand 2 case studies do not pay certification fees because this cost is assumed either by the exporter or the government project, respectively. In the Brazilian case study, certification fees are not required.

Further, in the organic rice case studies, there is a lack of direct involvement of farmers in the marketing costs, with the single exception of the Indian case study 2. The contrary occurs in the fruits and vegetables case studies where farmers participate more directly in the market and incur in direct marketing costs.

Table 8: Examples of setting-up and ongoing costs of organic certified produce at the farmer level

	Setting-up costs	Ongoing costs
At production	Costs of conversion Production losses Investment in infrastructure	Pest management and control Soil management
At certification	Establishing farmer groups ICS establishment Record keeping/ accounting systems Training and meeting	Record keeping/ accounting systems Ongoing training and meeting Visits and inspection
At marketing	Investment in facilities Developing market skills	Marketing management Ongoing development of market skills

In Table 9 the cost structure in the organic certified rice is simplified and the calculation of results presented. The Indian case study 1 has the highest income, while the Thailand case study 1 has the lowest. A closer look at the results, however, reveals that the former case also has the higher ongoing costs, and therefore, the current net income is proportionally lower than in the other case studies. Farmers participating in the Indian case study 1 receive high premium prices, but also require more sophisticated production systems, particularly regarding the use of organic inputs in order to comply with three different certification bodies. Setting-up costs were not estimated as they were either covered by the supportive organization or were negligible.

Also, it is important to note that the participation of direct certification costs in the gross income ranges from 3.4 to 1.7 percent. An explanation for this result could be the active involvement of the supportive organization in the marketing and certification activities in all the cases, whose associated costs are only partially or not charged at all to the farmers. Training and extension costs for farmers to ensure organic quality and documentation, record keeping, as well as the certification fees from external bodies could be shared by the export firm or leader organization that is part of the ICS and the farmers.

Marketing costs are relevant only in the Indian case study 2. They correspond to transportation costs of paddy from field to warehouses, and service charges to the farmers' federation. The amount of the costs shared by farmers depends on the trade arrangements and on farmers' bargaining skills with the market centres. The setting-up costs at the farm level were not possible to calculate as they refer to dyke construction, which was done collectively.

Table 9: Cost structure in the organic certified rice at the farm level in the case studies (US\$ /ha/year)

Case study/ costs	Indian case study 1	Indian case study 2	Thailand case study 1	Thailand case study 2
Ongoing costs	444.00	238.00	213.70	135.00
Production/ongoing cost (%)	100	81.5	91	92
Certification/ongoing costs (%)	0	8.8	9	8
Marketing/ongoing costs (%)	0	9.6	0	0
Gross income	796	678	547	562
Ongoing cost/gross income (%)	55	35	39	24
Certification/ gross income (%)	0	3.1	3.4	1.7
Gross margin	1.79	2.84	2.55	4.16

Note: Exchange rates: Thailand (US\$1:40 baht); India (US\$1:44 rupees).

Source: Author's calculations

In the organic fruits and vegetables case studies, the results of the three case studies are diverse, as shown in Table 10. Setting-up costs were available only in the Czech and Hungarian case studies, as farmers in the Brazilian case study started out in organic business more than 20 years ago. Setting-costs were particularly high in the Hungary case study if compared to the gross income. It is important to note, however, that these costs in both the Czech and the Hungarian case studies were usually covered by organic farming subsidies programme as part of country agro-environmental measures.

The Czech case study has the higher ongoing costs and gross income figures. However, it is the Brazilian case study that presents the higher profit per hectare as a result of the lower participation of the ongoing costs in the gross income. Most likely, farmers are able to retain higher added value as they are involved in added-value activities in the post-harvest, including agro-processing and marketing planning and management. In fact, they spend more than 50 percent of their recurrent/ongoing costs in marketing activities. In the Hungarian and Czech case studies, this participation corresponds to less than 10 percent of the current costs.

Certification costs vary from nearly 2.5 to 11 percent of the total ongoing costs in the Czech and Brazilian case studies, respectively, while it accounts for nearly four percent in the Hungarian case. The apparently high certification cost in the Brazilian case study is because participation in training and organization activities are taken into account in the certification costs, although they also serve other purposes in the organizational structure. Record keeping and documentation are not significant costs within the certification process for any of the organic fruits and vegetables case studies.

Table 10: Cost structure in the organic certified fruit and vegetables at the farm level in the case studies (US\$ /ha/year)

Case study/ costs	Brazil case study	Czech Rep. case study	Hungary case study
Setting-up costs		900	740
Ongoing costs	1 887.00	5 171.00	611
Production /ongoing cost (%)	35	88.7	90
Certification/ongoing costs (%)	11	2.6	4
Marketing/ongoing costs (%)	53	8.7	6
Gross income	3 863	6 850	748
Setting-up cost/gross income (%)		13	98
Ongoing cost/gross income (%)	49	75	81
Certification/ gross income (%)	5.5	2	3
Gross margin	2.04	1.32	1.22

Note: Exchange rates: Brazil (US\$1: 2.5 reais); and Hungary and the Czech Republic (US\$1.26: 1 euro).

Source: Author's calculations

The gross margin analysis was positive in all the cases, as shown in Table 9 and 10.²² The higher ratio was for the four organic certified rice and the Brazilian case studies. Financial benefits were calculated by multiplying the average yield per ha by the selling price. Premium prices per kg of product were very relevant revenues in all the case studies. In particular, they were complemented by sales of green manure in the organic rice case studies. In the Brazilian case study, since some farmers processed food, a conversion ratio of yield per hectare of the produce in the region was used for calculation.

In both the organic rice and the fruits and vegetables value chains, there are systems that are the most expensive and yield the highest revenues yet do not necessarily obtain the highest profits.

Although the case studies under third party certification for individuals obtained the lowest profit, the difference could not be attributed to the certification scheme only. The type of produce and market conditions may be also explanatory factors in the income level differences. Resource availability, bargaining and business management capabilities of farmers are also factors explaining profitability differences.

²² The classic cost/benefit ratio was not calculated due to lack of accurate data on fixed costs in some of the case studies.

Non-financial benefits

In addition to the positive gross margin ratio, organic certified farmers are fairly conscious of other non-quantifiable benefits derived from growing certificated produce. Improving overall product quality and farm resources are benefits that provide long-term sustainability. They also **add value to farmers' products**. In the analysed cases, little information and education are available for the final customers, which means a longer period for the acceptance of price premiums for the added value of organic products. In the Brazilian case, however, building long-term and direct market relationships with consumers is seen as a more relevant benefit than obtaining premium prices.

The cessation of agro-chemical application contributes to maintaining balanced ecosystems through the reduction of added harmful substances to the ecosystem. In many cases, production costs are cut by reducing the purchase of chemicals and of transport costs.

Soil improvement is a major benefit, which can be observed after a few years of organic production. It also contributes to the increase of **plant and animal species diversity**.

Developing knowledge and skills, and **improving farm management** planning are seen as essential in strengthening farmers' control over the productive process. The ability to produce very good quality that others are not able to match, boosts **self-confidence and helps to improve market and negotiation skills**.

The intermediary organizations also obtain benefits from better market access, knowledge and skills in ICS management, and improved planning capabilities in the supply chain. They all contribute to increase **farmers' self-confidence and social networking** to support better rural societies.

In addition, farmers and NGOs in the Brazilian case study are convinced that they contribute to the **food security and food sovereignty** of local communities. Since farmers participate in all stages of the supply chain, they can also exert more influence on the overall planning process and retain more of the financial advantages than their partners in the other case studies mentioned. Table 11 summarizes the quantifiable and non-quantifiable benefits of organic agriculture at the farm and organization levels.

Table 11: Examples of quantifiable and non-quantifiable benefits or organic certification at the organization and farmer levels

	Quantifiable benefits	Non-quantifiable benefits
At the organization level	Knowledge and skills in ICS management Knowledge in organic production technology	Improvement in general planning (supply chain)
At the farm level	Add-value to farmer's products (premium price) Food security Reduced input costs	Soil improvement Plant and animal species diversity Improved farm resource management Self-confidence Social networking Food sovereignty

8. Conclusions and recommendations

The study confirms that organic small-scale farmers have great opportunities to access modern food chains and export markets due to the added-value attribute of organic produce. In the five countries of the case studies, the participation of smallholders in organic export or domestic markets is relevant.

- In Brazil, small-scale farmers provide a large number of fruits and vegetables for local and regional markets. Their share is 15 percent of the organic market in the country.
- In India and Thailand, organic produce is produced mainly by small-scale farmers engaged in high-value crops cultivation, such as herbs and species, fragrant rice, and fruit and vegetables. Business companies and NGOs are the main players marketing these products mainly for export but also for domestic markets. The organic fragrant rice – Basmati from India and jasmine from Thailand – is produced for export mostly by small-scale farmers.
- In Hungary and Czech Republic, most of the organic production is done by large-scale farmers engaged in the production of cereal and industrial crops for exports, while small-scale farmers produce most of the fruits and vegetables for local markets.

Export markets have been a driving force for growth of certified organic produce from developing and transition countries. In the five studied countries, access to export has played a role in the growth of organic certified agriculture:

- Hungary shows a strong export focus, with 90 percent of the organic product exported mainly to Europe, and with a small but growing domestic market.
- Brazil has strong parallels with Hungary, as 85 percent of its organic product is exported, to the EU, US and Japanese markets, and it has a very dynamic domestic market.
- Although with less concrete government support, Thailand has shown a recent increase in organic exports, with only vegetables and cereals available on the domestic market; organic rice is an important export, especially to the European market.
- Rice production is also important in India, with markets in the EU, the United States, Canada and Australia, but with more focus needed on export and domestic markets.
- The Czech Republic only exports ten percent of its organic produce, but strong government support is encouraging an increase in the sector.

An enabling environment is required to support institutional development and to set up norms and standards in order for the organic agriculture and market to grow. In the selected cases, countries have developed policies and defined standards and norms on organic production and trade. They have set up institutions that had been part of the national assurance system, such as accreditation and certification bodies that follow specific international standards and agreements. Such policy and institutional developments have been put in place although driven by different forces:

- The Czech Republic and Hungary had achieved equivalency status under EU Commission decisions until their accession in the EU in 2004. Their legislation on organic products is currently subordinated to the EU Regulation. Their legislation aims at the regulation of organic agriculture and marketing as a whole system. In addition to a strong institutional development in quality assurance, both countries maintain subsidy programmes compatible with the agri-environmental measures implemented in the EU subsidies policies for rural development.
- In Thailand, policies and institutions for organic produce are in place for producing safe food and support exports. A significant institutional development is the accreditation by IFOAM of ACT in 2001. ACT consists of producers' organizations, NGOs, consumers and other stakeholders and is the first Asian organic certification body that can offer internationally recognized organic certification services.
- In India, the government established steering committees and a National Programme for Organic Production (NPOP). Their main aims were to enhance quality assurance systems required for export markets of certified products. Recently, national certification bodies have been recognized as equivalent by the EU and the conformity assessment system considered sufficient to ensure conformity by the USDA-NOP, therefore facilitating export to US and EU markets.
- In Brazil, in the organic policy and regulations concern different types of organic certification and conformity assessment procedures, including participatory certification. This development resulted from a long history of participation of the organic movements, both from the private and public sector. Implementation of the organic law aimed at providing a basis not only to allow the country to export, but also to develop a strong organic domestic market.

Domestic markets represent an unexplored potential for the expansion of organic agriculture in the studied countries. Health concerns drive the increase in domestic demand for organic, but the price premium attached to the segment is generally more affordable to urban, educated and more affluent consumers. Education and awareness-raising is needed both to drive the growth of the organic market and to avoid confusion over labelling issues.

- The organic market segment in Hungary is driven by the urban educated class and those who can afford the organic price premiums. Organic shops and markets are predominant. However, with the expanding organic market, Hungary is experiencing a great increase in the retail sector share.

- This is also the case in the Czech Republic where spending and demand is increasing, although starting from a small baseline; this trend is being fuelled by information and economic growth. Multiple retailers have over two-thirds of the domestic organic market share.
- The strong urban consumption is also echoed in Brazil, where the huge domestic market potential, especially regarding health concerns, will drive future growth. Individual sales and specialized stores remain key channels in the country; however, there are potential opportunities offered by supermarkets, but this entails a stringent procurement system.
- In Thailand, health issues are also a key component of the domestic organic market, but uncertainty remains with labelling issues. Organic fresh fruit and vegetables are sold through the same marketing channels as the other countries, with rice sold through dedicated organic channels, conventional rice traders and the fair-trade network.
- In India, although health concerns are a major factor influencing organic purchases, consumer awareness is still low. The domestic organic market is still in the early stages of development, needing organization and increased market focus.

Market strategic choices are on the basis for the selection of the certification scheme to be followed. The proliferation of standards and regulatory international bodies sometimes makes the selection of the type of certification scheme confusing and costly.

- The access to EU and US markets using local certification bodies may be troublesome. Under EU regulation, for instance, markets are opened for products from countries listed as *third countries*, or through certification granted under imports derogation. Since only six countries are listed as *third countries*, it is very common that the exporter would comply with requirements determined by the importer, such as the selection of certification body, and consequently, the type of standards to be followed.
- It is believed that the harmonization of procedures and standards could eventually have far-reaching benefits for international trade in general, particularly the equivalence between certification bodies.
- In the participatory certification or PGS, standards rules and procedures are defined collectively inside the network. In Brazil, this alternative certification is legally recognized provided that there is well-established organizational control. In many other countries there are also alternative certification systems for organic produce that work fairly well for local and regional markets. The participation of 14 countries in the first meeting on alternative certification held in Brazil in 2004 showed the relative importance of these alternatives in the mainstream organic market.

A value chain management approach needs to be considered when calculating the costs associated with supplying certified organic products

Decision-makers at all levels need to work closely together to ensure that quality product assurance is continuously maintained. Regardless of the scheme, complying with organic

standards and procedures involves making managerial decisions at the production, processing, certifying and marketing levels. A modern and transparent organizational structure should be developed along the chain in order to ensure lasting organic quality.

- In the Thailand and India organic rice chains, producers are vertically integrated or linked in the supply chain targeting export markets. In the organic vegetable chains, producers in the Ecovida Network are horizontally linked in a fairly short supply chain targeting local and regional markets. In Hungary and the Czech Republic, producers participate individually in short supply chains driven by a promising domestic demand.
- Drivers in the organic rice chains are either exporters or NGOs that provide most of the business and technical support services required by the farmers; public/private schemes may contribute with technical development and provide technical advice, as in the TOPS case study (Thailand), or participate in the ICS, as in the UOCB case study (India).
- In the Brazilian Ecovida Network, farmers, consumers and technicians participate together in the quality assurance system with support from non-government and occasionally governmental organizations, which offer a wide range of technical, business and commercial services.
- The organic vegetables chains in Hungary and the Czech Republic are in early stages and there are no farmers' organizations; quality assurance systems are rigorously controlled by social and governmental organizations.

The set-up and ongoing costs of organic certified schemes involve the development of skills and knowledge at different levels to comply with the certification procedures. Private and public organizations and NGOs providing support to farmers' groups to get certified, need to develop their managerial and business skills to implement business and marketing plans together with measures for enhancing farmers' capacities to ensure the organic quality attribute of their produce.

- In the cases where the supportive organization was part of the ICS, all technical and business services, inputs and the implementation of the ICS were provided by the lead organizations, which assumed the overall costs. Costs turned out to be high when an organization targeted different export markets demanding different certifications and subsequently, increasing its costs per farmer.
- In the BRFO-GNEN case study (Thailand), by applying an ICS, the costs were much lower, presumably due to lower transaction costs in the stakeholder relations. Farmers are vertically integrated in the organic chain, and financial and technical services are provided by the supportive organization. Costs may also differ according to the previous experience and efficiency gains regarding past efforts of the organization in dealing with certification.
- Networking activities to strengthening horizontal and interdependent relationships among stakeholders could be very costly, as shown in the Brazilian case. However, these activities – where consumers make up part of the quality assurance system – were given the same

priority as technological development in enhancing agro-ecological systems and in creating long-lasting local markets.

The gross margin analysis at the farm level is positive for all the case studies analysed, although some slight differences are found between them. Such differences could not be attributed to the certification scheme only, but the particular conditions in which they work must also be taken into consideration needs. Farmers need to develop skills to manage organic technology or else productivity losses may be incurred. Other variables that may explain profit difference are the type of produce, i.e. fresh or processed produce, and the targeted market, i.e. for export or local markets. Export markets can be highly profitable for farmers when participating in a vertical integrated value chain with well-defined social responsibilities. Other variables that explain profit differences are the farmers' bargaining and business skills in the organic value chain, which in turn depend on assets availability and on the quality of natural resources, capital, network, skills and knowledge.

In all the case studies, the organic value chain stakeholders viewed the certification process as positive. The certification process is perceived as having financial and non-financial benefits that together promote the improvement of resources and product value addition, promoting sustainable rural development. It enhances skills and knowledge of staff and farmers to cope with the growing organic trade, which still expands and offer competitive prices and social responsibility. Improving overall product quality and farm resources are benefits that provide long-term sustainability. The production of safe food for families and local communities is highly valued. The cessation of agro-chemical applications contributes to maintaining balanced ecosystems through the reduction of added harmful substances to the ecosystem. It also contributes to increasing the diversity of plant and animal species. The intermediary organizations also obtain benefits from better market access, knowledge and skills in ICS management, and improved planning capabilities in the supply chain. All of these contribute to raise farmers' self-confidence and social networking to support better rural societies.

An additional benefit from the participatory certification is that it stimulates the creation of a sustainable, local consumer base for the development of a robust local market. Farmers and NGOs are convinced that they contribute to food security and food sovereignty of local communities. Since farmers participate in all stages of the supply chain, they can also exert more influence on the overall planning process and retain more of the financial advantages than their partners in the other mentioned case studies.

8.1 RECOMMENDATIONS

Specific priority measures have been identified to reduce participation costs and increase the performance and competitiveness of small- and medium-scale farmers in certified organic food chains:

For supportive organizations (government, trader and NGOs):

Intervention strategies on technology development should be implemented with a long-term view: Two major areas of intervention have been identified. First, pest control

and management remains a critical aspect to be addressed by technicians and farmers. Links with research and agricultural development centres should be set up in order to explore cost-effective technologies for pest management and control. Another important area that requires further intervention is appropriate technologies to add value and extend shelf-life of organic produce. It is advisable to establish links with technology development institutions specialized in agro-processing technologies in order to investigate these specific technologies.

Establishment of financing mechanisms: The case studies clearly show the need for investment support to organic development projects at the initial phase. The first two years are the most critical for organizations in establishing projects to ensure their sustainability.

Support to market development: Specific initiatives should be in place to support market development. From the different studies, there is consensus on the three major areas to develop: strengthening of value chain linkages, development of information technologies (IT) and development of local markets. Promoting value chain integration will allow long-term connections between producers and processors, wholesalers and retailers. This may include organizing meetings to encourage formal and informal contacts to understand the common requirements and problems. Appropriate interventions in terms of building longer-lasting alliances should then be encouraged by catalytic actors.

Supporting IT development will help the producers obtain market information and develop e-business possibilities. One example is the home-delivery system, which links producers directly with farmers through producers' webpages. In developing local markets, information and market communication are pillars of a long-standing strategy. Encouraging consumers to connect to the sources of food will help to create a culture of local food communities. The Ecovida Network case study is a good example of this initiative. A comprehensive and well-structured programme for developing domestic markets should have three main aims: first, it should inform public opinion through intensive communication; it should increase the variety and volume of goods; and finally, it should improve and widen the marketing channels participating in organic trade.

Another market component is the establishment of a proper framework for an agri-input supply system that provides information and networking among development organizations, traders, producers and government institutions.

Strategies to reduce costs of training activities: The need to improve efficiency and reduce costs of training activities can be satisfied through joint training among institutions and experience sharing through networks. Training will include not only production, but also marketing and processing activities. Promoting group certification among organic farmers will lead to reduced expenses due to economies of scale in training, monitoring and certification activities.

For governments:

Support institutional development and set up norms and standards at the national level in order to facilitate the inclusion of small-scale farmers. This consists in setting up institutions that make up part of the national quality assurance system, such as accreditation and certification bodies that follow specific international standards and agreements.

For development agencies including FAO:

Investigate and disseminate cost-effective technologies that farmers can use to meet certification requirements, particularly in the areas of technology development. FAO could contribute with platforms of information exchange on technological alternatives to address problems of pest management, organic post-harvest technologies and marketing of inputs.

Help countries to incorporate small-scale farmers in the organic supply chain: FAO could help member countries in developing and transition countries to identify lucrative markets and the required certification scheme for small-scale farmers.

Provide training on management and market development: FAO through training of trainers, could train actors along the organic food supply chain in order to increase transparency and better linkages between them, and improve their specific managerial skills for better planning and market development.

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Organic certification schemes: managerial skills and associated costs

This paper studies alternative certification schemes for organic products in order to draw conclusions regarding the institutional support and technological development required for compliance with organic standards. It discusses third party certification, for both individuals and farmer groups, as well as participatory certification. Case studies from developing countries and countries in transition engaged in organic rice and organic fruit and vegetable production are examined. Issues analysed include the organizational structure and marketing strategies in the organic supply chain. The paper also discusses the institutional development that is needed to provide business and technical services and establish the quality assurance system. Organizational, managerial and business skills required by the lead stakeholders in the organic chain are analysed as well as the costs that they incur for effectively managing organic projects. Similarly, the managerial skills required at the farm level are considered as is the use of cost-benefit analysis. The paper also reviews the legal and institutional framework that facilitates organic production and certification.

The paper is aimed at staff of government, private and non-government organizations working at the policy level and in the field, and at donors' organizations that support organic production and certification.