



# Organic supply chains for small farmer income generation in developing countries

*Case studies in India, Thailand,  
Brazil, Hungary and Africa*



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## Executive summary

Despite the increasing attention given to organic supply chains over the past decade, there are still significant market opportunities to pursue. The demand for organic products in developing countries continues to grow and price premiums for organic certified products are available, albeit not comparable with those of a decade or so ago. This paper focuses on case studies on organic rice in India and Thailand, horticulture products in Brazil and Hungary, and coffee and fruit in African countries. It first summarizes findings on the marketing, financing, post-harvest and value-added components of these organic ventures and then provides conclusions and recommendations for policy-makers, the private sector and support organizations for the future development of organic supply chains in developing countries.

In the cases studied, supply chains ranged from the very short where farmers market directly to local consumers, to the more elaborate chains where a number of different actors are involved in moving the organic products along from farmer to final consumer.

All those involved have distinct roles and responsibilities. *Farmers* are responsible for cultivating crops according to organic procedures certified by the appropriate authority. *Farmer organizations* facilitate groups of farmers to produce jointly the required volume of organic products to be supplied to buyers. They also facilitate implementation of internal control systems (ICS) to ensure quality management and reduction of certification costs through group certification. In some cases, farmer organizations own equipment, trucks, storage and processing facilities such as rice mills, juice processors and fruit dryers. *Buyers* include individual entrepreneurs, international trading houses, food processing companies, supermarkets, wholesalers and retailers as well as government programmes. Most buyers assist farmers with some level of extension, training and credit in terms of inputs and, in some cases, they actively promote the formation of farmer groups and associations to facilitate collection, transportation and the provision of training and farm inputs. Buyers often facilitate certification either through the formation of and participation in ICS and/or assuming the associated costs *Support organizations* – both governmental and non-governmental – provide technical assistance and training support to farmers so that they can become certified and participate in organic food supply chains. *Financing institutions* may facilitate credit lines appropriate to organic production characteristics and quality demands along the chain.

Transportation and logistics of the harvested product and maintenance of the organic quality are important components in the supply chain. Handling and transportation, storage, packing, etc. of organic products must be carried out separately from non-organic products, and under certified conditions. Traceability is now a further requirement of export markets as a means of ensuring the quality of products all along the chain. Processing, storage and transportation are generally handled by the

private sector entrepreneur, wholesaler or exporter. Attempts to establish cold chains for fruit and vegetables have been inefficient and expensive because of low capacity of use and operational costs. In some cases, refrigerated warehouses have been funded by government programmes for the benefit of small-scale organic farmers.

The case studies show that the burden of responsibility for post-harvest operations falls on producers and their organizations. Whether in rice, coffee or fruit and vegetables, farmers' skills and facilities, together with the timeliness of their activities, affect the quality of the final product when it reaches the buyer and, ultimately, the consumer. More support in post-harvest training is required at the farmer level, as the value-added associated with organic certification is lost if the quality of the final product is not acceptable to the consumer. In several cases, efforts have been made to improve post-harvest operations and quality management through the implementation of training on the farm and at other key points in the chain. For processed products, most farmers passed their produce on to a processing specialist in the chain. Only in a few cases have farmers diversified into processing their produce in order to capture more of the value-added in the supply chain.

Private sector partnerships were the key source of financing for organic supply chains. In other cases, fairtrade partnerships between producers and buyers in developed countries were able to finance production and post-harvest operations in a reliable way through provision of advance payments. However, this was not always sufficient, so that farmer organizations needed to find additional funds locally. Overall, financing of crop production for smallholders continues to be problematic in developing countries, irrespective of whether the product is organic or not. Where private sector or fairtrade<sup>1</sup> partnerships are being developed or are functioning, it would be desirable for commercial banks and government-backed programmes to be encouraged to develop financing mechanisms that facilitate the smooth functioning of all essential activities along the supply chain.

In all case studies, a range of factors that influenced success were identified. Key among these were: secure access to stable markets through value chain integration; active participation by private sector partners able to take responsibility for financial and managerial resources and provide support to farmers; support services from Non-governmental Organizations (NGOs) and government agencies, and adequate investment and access to finance. In addition, the organization of farmers in efficient groups was a key factor in facilitating fairtrade certification; access to inputs and training; and price guarantees for both organic and in-conversion crops, motivating farmers to participate and stay in the supply chain.

As in conventional markets, factors limiting the success of the ventures included technical issues such as inadequate post-harvest training for farmers and the lack of appropriate drying equipment and storage facilities. Other constraints included the low volume of products for marketing to wholesalers and supermarkets; lack of differentiation between organic and non-organic products in some markets; and limited access to finance for inputs, purchase of harvested crops and post-harvest handling, processing and cold chain facilities.

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<sup>1</sup> The term *fairtrade* is used here when referring to products certified by the Fairtrade Labelling Organization (FLO).

Based on the review, a number of recommendations are made for strengthening viable organic supply chains for the benefit of smallholders in developing countries.

**Governments** should consider providing an enabling environment so that organic supply chains can develop for both the export and domestic market. This will mean including organic production techniques and post-harvest operations in extension services; developing credit lines for conversion and certification costs, purchase and storage of harvested crops, post-harvest and processing equipment, cold chain facilities and transportation; and support for training in food handling, food safety and quality management, business and marketing management and associated consulting services from local private suppliers.

In association with environmental NGOs, the private sector and leading producers in the organic sector, governments should also promote organic products for domestic consumption through consumer awareness campaigns; support the development of organic marketplaces in partnership with municipalities; and promote the procurement of organic products for public sector health, food and nutrition programmes. Furthermore, development of organic standards and certification and fostering the establishment of local certification bodies – when volumes are considerable – will build confidence in organic products and reduce certification costs for producers.

**Partner companies** should identify feasible markets abroad as a preliminary step prior to participating in or developing export-oriented organic supply chains.

They should also have the necessary business, marketing and technical skills to back the development and operation of the organic supply chain. They should be open to forming alliances and partnerships and working with other organizations such as farmer groups, NGOs, government agencies and banks with different philosophies in order to capitalize on synergies that lead to greater supply chain efficiencies.

**Private companies** should take special responsibility in ensuring adequate investment and availability of funds for the effective operation of the whole supply chain.

**Financing institutions** are encouraged to develop appropriate financing mechanisms that take the idiosyncrasies of organic production into account, such as the conversion period and product segregation along the supply chain. They should facilitate the smooth functioning of all essential activities along the chain.

**Support groups**, such as NGOs that work with small-scale farmers on organic projects, should have the necessary capacity to deal with post-harvest, food safety and quality, finance, marketing and business management activities with their own staff or with alliances or subcontracts with specialist groups at universities, consultants and technical service companies.

They should also evaluate opportunities for accessing fairtrade markets, obtaining certification as a first option, given the benefits and motivation this provides for smallholder farmers and their communities. Certification schemes for farmer organizations must be kept to a minimum, since record-keeping and understanding the different certification requirements present major challenges.



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# Acronyms

AOPA	Association for the Development of Agroecology (formerly Association of Organic Producers from Paraná) (Brazil)
ARDP	Agricultural and Rural Development Programme (Hungary)
BAAC	Bank for Agriculture and Agricultural Cooperatives (Thailand)
BRFO	Bak Rueva Farmer Organization (Thailand)
CATI	Coordenadoria de Assistência Técnica Integral (Brazil)
CBS-KTB	Community Bank Services of the Krung Thai Bank Public Company Limited (Thailand)
CODI	Community Organizations Development Institute (Thailand)
COOPERAFLORESTA	Cooperativa dos Produtores Agroflorestais de Barra do Turvo (Barra do Turvo Agroforestry Producers Cooperative) (Brazil)
COPAÉCIA	Cooperativa Aécia de Agricultores Ecologistas (Aecia Ecological Farmer Cooperative) (Brazil)
CWA	Chai Wiwat Agro-Industry (Thailand)
ECOCITRUS	Cooperativa dos Citricultores Ecológicos do Vale do Caí (Cai River Valley Ecological Citrus Farmer Cooperative) (Brazil)
ENF	Earth Net Foundation (Thailand)
EPOPA	Export Promotion of Organic Products from Africa
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FLO	Fairtrade Labelling Organizations International
GLOBALG.A.P.	Global Partnership for Good Agricultural Practice
GNC	Green Net Cooperative (Thailand)
HACCP	Hazard Analysis and Critical Control Point (system)
ICCOA	International Competence Centre for Organic Agriculture (India)

ICS	Internal control system(s)
IFAD	International Fund for Agricultural Development
IFOAM	International Federation of Organic Agriculture Movements
ISO	International Organization for Standardization
KCCS	Kisan Credit Card Scheme (India)
MBA Nucleus	Núcleo Maurício Burmester do Amaral (Brazil)
MoAC	Ministry of Agriculture and Cooperatives (Thailand)
NABARD	National Bank for Agriculture and Rural Development (India)
NAIS	National Agricultural Insurance Scheme (India)
NCOF	National Centre of Organic Farming (India)
NGO	Non-governmental Organization
NPOF	National Project on Organic Farming (India)
NRDP	National Rural Development Plan (Hungary)
OAFT	Organic Fair-trade Rice Committee (Thailand)
PAA	Food Acquisition Programme (Brazil)
PRONAF	Programa Nacional de Fortalecimento da Agricultura Familiar (Brazil)
SHGs	Self Help Groups
SIDA	Swedish International Development Cooperation Agency
TOPS	Top Organic Products and Supplies Company Limited (Thailand)
UNCTAD	United Nations Conference on Trade and Development
UNEP	United Nations Environment Programme
UOCB	Uttarakhand Organic Commodity Board (India)

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## Chapter 1

# Introduction

Despite the attention given to organic supply chains over the past decade, significant market opportunities remain. Demand for organic products in developing countries continues to grow and price premiums for these products, albeit not comparable with those of a decade or more ago, continue to exist. Organic agriculture is important because it has the potential to maintain and increase yields while improving soil fertility, biodiversity and other ecosystem services. It is particularly suited to smallholder farmers, who are less dependent on external resources, since it makes use of their traditional knowledge. These farmers have found it relatively easy to adjust to the demands of organic certification. In fact, the majority do not use chemical inputs so are already producing organically. Nevertheless, their products need to be certified by specialized agencies so they can be sold under the organic label and thereby attain premium prices. Several reports have confirmed that small farmers who have shifted to organic production and marketing enjoy higher and more stable yields and incomes, thus enhancing their food security (IFAD, 2003, 2005; UNEP-UNCTAD, 2008a, 2008b).

International markets for organic products continue to grow at a rapid rate of 10–30 percent per annum in most countries and over US\$5 billion per year globally, with fresh fruit and vegetables as the leading sector. For instance, organic vegetables comprise over 5 percent of all vegetable sales in northern European countries and exceed 10 percent in some Scandinavian and Alpine countries. The organic fruit market is reporting even higher growth, as more tropical and exotic varieties come on the market (Organic Monitor, 2010b).

In 2009, the global market for organic food and drink rose to over US\$54.9 billion, with the vast majority of products being consumed in North America and Europe (Willer and Kilcher, 2011). The leading areas in organic food production are Australia (12.14 million ha), Europe (8.18 million ha) and Latin America (8.07 million ha) (Organic Monitor, 2010a), while the countries with the highest number of producers are in Latin America, Asia and Africa, reflecting the high predominance of smallholder organic agriculture farms in these regions (Willer and Yuseffi, 2007). Organic products from developing countries are increasingly in demand in export markets. Similarly, demand for fairtrade products (often certified as organic) is also increasing, with product sales in 2008 estimated at US\$3.5 billion as a result of the growing interest in social and trade issues involving developing countries. Some European supermarkets have gone so far as to convert their entire supply chains of certain products to fairtrade (Organic Monitor, 2009). Domestic markets for certified organic products in developing countries are much less developed, with the exception of China (IFAD, 2005). Nevertheless, the potential for active exchange between countries in an emerging Asia-Pacific regional organic market is consolidating an organic industry that had originally developed to supply Europe and North America (Cadilhon, 2010). While

TABLE 1

**Cost benefits at the farm level in certified organic products (US\$/ha/year)**

	India 1 Rice	India 2 Rice	Thailand 1 Rice	Thailand 2 Rice	Brazil Fruit/ vegetables	Hungary Fruit/ vegetables
Ongoing costs	444	238	213.7	135	1 887	740
Gross income	796	678	547	562	3 863	7.48
Gross margin	1.79	2.84	2.55	4.16	2.04	1.22

Source: FAO, 2007a.

organic premiums are high in a few export and domestic markets, there are some concerns that these may not continue as more and larger commercial producers enter the market, so that premiums may fall in the future (IFAD, 2005).

Given the interest in organic supply chains and their potential and benefits for small farmers, in the mid-2000s, FAO developed a comparative cost/benefit analysis of different certification schemes aimed to understand better the alternatives in organic certification and the economic implications for farmers and their support organizations (FAO, 2007a). Findings clearly showed that these certification schemes are embedded in specific market relationships that determine business and technical services, inputs and post-harvest needs. Moreover, it was clear that establishing organic policy and institutional frameworks at national level facilitates market access to export markets in the United States of America and Europe. Additionally, establishing internal control systems (ICS) within farmer organizations and promoting local certification bodies are crucial for lowering costs and improving farmer profitability.

The present study builds upon the previous work on certification costs by investigating marketing strategies and sources of financing for small organic farmers and intermediary organizations.

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## Chapter 2

# Case studies

### INDIA

In recent years, the central and state governments have taken a number of steps to promote organic farming among farmers and consumers. These include a National Project on Organic Farming (NPOF) and a National Centre of Organic Farming (NCOF). Some state governments have also initiated programmes to encourage farmers to convert to organic farming and to facilitate the organic certification process, which is necessary to obtain a premium price in the market. As a result, the area under organic cultivation had increased to around 1.2 million ha in 2008 (ICCOA, 2009). A large proportion of certified organic production goes to export markets, mainly Europe, the United States of America, Australia, New Zealand, Israel and the Middle East. Exports consist of about 35 commodities, including cotton, spices, tea and basmati rice. The domestic market for organic produce is much smaller.

This study focuses on the supply chains for the export of organic basmati rice in the state of Uttarakhand, situated in northern India, through a review of two case studies (Alam, 2007). One project was initiated by a private company, Sunstar Overseas, which is one of the largest traders of basmati rice in India. The other was developed by a public sector agency, Uttarakhand Organic Commodity Board (UOCB), which was set up by the Uttarakhand government to promote organic farming in the state. The Sunstar production chain includes about 500 farmers while that of UOCB has more than 1 200 farmers. Most of these are small and medium landholders.

### THAILAND

In 2005, organic farming in Thailand covered about 21 701 ha (up from 2 000 ha in 2000), representing 0.1 percent of the total agricultural land area, with 7 186 farmers, representing 0.14 percent of the total number (IFOAM, 2010). Thai organic agriculture is dominated by rice and field crops, with organic rice produced on 18 000 ha or 85 percent of organic farmland (Willer and Yuseffi, 2007). Organic sector growth in the last few years has been quite impressive, thanks to a combination of factors, including the rapid growth of international organic trade, the emergence of domestic markets for organic produce, favourable government policies and the establishment of organic conversion systems.

The major export markets of Thai organic farm produce are the European countries, particularly Germany, the United Kingdom and France. Export markets in the United States of America, Japan and high-income countries in Asia such as Singapore, Hong Kong and Malaysia are also expanding significantly. There are no official statistical data on Thailand's organic exports. Besides rice, the second most important export to the European Union (EU) is fresh vegetables. Other exports are sugar, palm oil and vegetable seed. The domestic market is much smaller, estimated at around US\$20 million.

This study focuses on two organic jasmine rice producers – Top Organic Products and Supplies Company Limited (TOPS) and the Bak Rueva Farmer Organization (BRFO) (Panyakul, 2006). TOPS' supply chain begins with 133 individual contract farmers, who cultivate 240 *rai* (38 ha). These farmers are organized in three local groups, according to location. The supply chain of BRFO organic rice comprises 218 individual organic farmers, and the area covered is 961 ha.

## **BRAZIL**

Organic production has been increasing significantly in recent years in Brazil, from 100 000 ha in 2000 to almost 900 000 ha in 2007 (De Abreu *et al.*, 2008). Pineapples, bananas, coffee, honey, milk, meat, soybeans, palm hearts, sugar, chicken and green vegetables are the main products. About 90 percent of this production is now exported to the United States of America, the EU and Japan (especially bananas, soybeans and coffee). Brazil is also a significant exporter of organic orange juice and organic sugar. Supermarkets account for 45 percent of domestic organic sales and marketplaces and specialized stores represent 26 and 16 percent, respectively. The principal products sold in these outlets are fresh fruit and vegetables, although there is an increasing trend towards processed organic products (teas, vegetable oils, cereals and milk). This growth is not only associated with consumers' needs, but is also part of the competitive strategy of the country's retailers to offer organic products to their customers. The growth of organic production in Brazil may also be explained in terms of the development of several different institutional relationships as well as an implementation of governmental policies specifically designed to support and promote the sector.

This study presents the results of a survey of five farmer groups belonging to Rede Ecovida de Agroecologia (Ecovida Agro-ecology Network) in the Brazilian states of Paraná and Rio Grande do Sul (Schultz, 2007) (see Box 1).

## **HUNGARY**

In 2004, there were 1 842 organic farms in Hungary, cultivating more than 130 000 ha, about 2 percent of the total agricultural area of the country. The area was estimated to have increased to 140 000 ha in 2005. The organic crops produced include cereals (wheat, maize, barley, oats, rye); feed crops (alfalfa, peas); industrial crops (sunflower, soybeans); vegetables (carrots, green peas, onions, cabbages, potatoes, tomatoes, green and red peppers, pumpkins); and fruit (berries, sour cherries, apples, peaches, nuts, grapes, melons). The fruit and vegetable sector is not particularly large: the area for organic vegetable production is only 0.9 percent and organic orchards and vineyards are but 1.9 percent of the total organic area. Most of the land is used for cereals, industrial crops, forage and pasture. Hungary's organic products are mainly exported (90–95 percent) to neighbouring EU markets. Conversion to organic farming and continued production is stimulated by government area payment subsidies, training and other programmes supported partially by the EU.

This study incorporates two surveys of organic farmers, one carried out in 2001 and the other in 2005 (Kürthy, 2006). Elements of a third project carried out in 2005 by the Research Institute for Agricultural Economics in Budapest on the effects of Hungary's accession to the EU are also included. There were two main groups of organic farmers in the sample of 20 surveyed in detail: fruit and vegetable producers

## BOX 1

**The five farmer groups surveyed in the Brazilian study**

**MBA Nucleus** (Núcleo Maurício Burmester do Amaral) is composed of 18 active groups of five to 12 agriculturists with a total of 180 families. Their main products are green vegetables, fruit and processed products, which are marketed mainly through organic marketplaces or fairs. The strategy adopted by MBA Nucleus is a search for flexibility, respect for diversity and for the autonomy of families to create their individual plans and choose appropriate marketing channels. Direct marketing is part of a strategy of consolidating ecological agriculture in the region where MBA Nucleus is active. Conventional markets, such as supermarkets, are perceived as risky for production activities, especially if this commercial activity is concentrated in the hands of only a small number of people.

**ECOCITRUS** (Cooperativa dos Citricultores Ecológicos do Vale do Caí [Ecological Citrus Farmer Cooperative of the Caí River Valley]) was founded in 1994, near the capital of the state of Rio Grande do Sul. It has 43 affiliates as well as 30 farms in the Caí River Valley region. Annual production is about 5 000 tonnes of fruit (tangerines and oranges) with profits of approximately US\$1.2 million). Of the total amount of fruit, approximately 10 percent is processed as juice. ECOCITRUS is well known for supplying fresh tangerines to retail networks. The cooperative has an infrastructure for processing and storing products, in which natural, pasteurized and reconstituted juice is produced. Grape juice will soon be added.

**COPAÉCIA** (Cooperativa Aécia de Agricultores Ecologistas [Ecological Farmer Cooperative of Aécia]) was the first group of farmers to be involved in organic production in the Serra region of the state of Rio Grande do Sul. It was founded in 1991, comprising 23 farmers. Fruit production is the main activity, especially grapes. Most of the production (90 percent) is destined for juice processing. Peaches, figs, persimmons and apples are also harvested. Currently, the cooperative specializes in ecological agro-industries, especially for grape juice and tomato processing. It is well known for its grape juice and its wide range of processed products, such as nectars, jellies and sweets made from apples, tomatoes, peaches and blackberries. These products are manufactured in three small agro-industries belonging to the cooperative, where manual processing is carried out by family members. Yearly sales reach US\$500 000.

**CAPANEMA** (Grupo de Agricultores Ecológicos de Capanema [Ecological Farmer Group of Capanema]). This group of 30 families is in the process of formally organizing a cooperative. It was the first group to affiliate with the Núcleos da Rede Ecológica de Agroecologia Sudoeste do Paraná, currently consisting of more than ten groups in various municipalities. The agriculturists are organized in five small community groups of six to eight families. They each have the freedom to plan their production and choose their marketing channels, so there is no group marketing. Currently, production is widely diversified in fruit and vegetables, milk, grains, sugar cane, sugar-cane



**BOX 1** (continued)

derivatives and home-made preserves. A farmers' market has been established in the municipality, which operates as a permanent fair for family farmers. Social concern is a priority of the group. It has, for instance, a project for distributing its products by bus to low-income consumers. CAPANEMA's municipality received support for building warehouses for commercializing ecological products and classifying seeds, as well as for holding production training courses.

**COOPERAFLORRESTA** (Cooperativa dos Produtores Agroflorestais de Barra do Turvo [Barra do Turvo Agroforestry Producers Cooperative]) comprises 65 families involved in agroforestry in the Ribeira Valley region of the states of São Paulo and Paraná. Its products are sold mainly in marketplaces in Curitiba. One affiliate has a structure for post-harvest activities, which has two climate-controlled chambers, scales and space for packing products. Marketing is mainly through participation in four ecological fairs in Curitiba. In 2002, with already 100 affiliated agriculturists, AOPA (Association for the Development of Agroecology) provided an agronomist to work within COOPERAFLORRESTA, consolidating work with farmers and integrating the group in 2002 with the Rede Ecológica de Agroecologia, thus making possible its participation and expansion in group marketing. Products are transported to Curitiba by an AOPA truck.

Source: adapted from Schultz, 2007.

(ten farms) and producers of other major crops such as cereals and industrial crops, and animals. These also had a significant production of fruit and/or vegetables (ten farms). Seventy percent of the farms in the sample had no employees since only family labour was used, while 10 percent of the farms had only one contracted worker.

## AFRICA

It is estimated that the African continent accounts for about 3 percent of global land under certified organic management. However, the number of farmers cultivating this small proportion of land is nearly 23 percent of African producers (UNEP-UNCTAD, 2008b). This reflects the predominance of small-scale farmers (with 1–3 ha) in organic production rather than commercial or plantation-type farms, although in some countries there is a clear presence of plantation-estate organic production because of the type of commodity (palm oil, bananas, mangoes).

Organic agriculture, whether for the export market or as a strategy to improve food security, is developing without the support of government policies or the participation of government services. It is the private sector, both NGOs and entrepreneurs, which is driving this development.

In both East and West African countries, the organic sector is still very small, with the West even smaller than the East, but it is growing. In the four countries studied, organic agriculture is predominantly export driven but in Uganda, for example, there is also a local emerging market, for the moment only in the capital, Kampala. The major export destination for organic products is the EU, although

some products are exported to the United States of America and Japan, and there is growing interest from Middle East and South African markets.

The study reviewed eight organic export projects, all fairly mature commercial export ventures, in two East and two West African countries (van Elzakker, 2006). The case studies represent different supply chains involving smallholder farmers, varying from an old cooperative with a relatively small organic crop, subsidiaries of international trading houses, links to local entrepreneurs and a commercial farmer-outgrower scheme. Four cases deal with coffee, the remaining four with pineapple. The smallholder farmers involved are defined as those who primarily use manual labour provided by the family. In the African context, they farm a maximum of 1 ha of (export) cash crop(s) in addition to food crops for home consumption.

Each of the eight cases (see Box 2) presents a different business model with its own marketing strategy. The report focuses on the main quality and value-adding opportunities associated with organic products, identifying key areas for participation by smallholder farmers in order to add value and increase incomes.

#### BOX 2

##### **Eight African exporters of organic products**

**Case study 1.** The exporter is a union of over 90 cooperative societies with an average of 1 000 members each. The union is a marketing organization that secures crop finance. Farmers produce and deliver their coffee to their primary societies where they receive payment. The primary societies sell on to the cooperative union, which ensures that the coffee is hulled and sold. The union is fairtrade certified and has received support from at least three different donor-financed projects for building up management capacity and improving financial management, coffee quality and overall performance. The organic project started in 2001 and by 2006 had grown to include more than 2 500 farmers.

**Case study 2.** The exporter is a cooperative enterprise set up by three primary societies that were part of a cooperative union. The European fairtrade buyer was unhappy with the quality of the coffee and the performance of the cooperative union, so began working directly on quality with the best three primary societies. The initiative started with fairtrade-certified coffee exports in 1998, with the mother cooperative union. In 2000, it was decided to go organic and conversion started in 2001. The three primary societies divided up and established their own cooperative enterprise, a limited liability company, exporting green arabica coffee beans. Separately, an employee-owned management and marketing company was established by the group. Currently, six primary societies are members of the cooperative enterprise, with a total of 2 400 farmers. It stores and markets 37 different kinds of coffee, some of which go into single-origin coffees. The target for 2007 was 26 containers of coffee of which 50 percent is sold as organic and 85 percent fairtrade (some coffee is also double certified) to a range of European and American buyers. The different buyers provide a large part of the crop finance, as is usual in fairtrade dealings.

**BOX 2** (continued)

**Case study 3.** The exporter is a subsidiary of an international coffee house that initiated the project in 2000 with the organic conversion of robusta coffee. By 2006, 920 smallholder farmers in one district were involved. The exporter operates with individual farmers under contract. In 2005, Utz Kapeh ([www.utzcertified.org](http://www.utzcertified.org)) certification was introduced, in addition to the organic project. At the same time, the exporter decided that the farmers, organized in groups of 20–25, should jointly market and deliver their coffee to one collection centre. There are 35 of these community groups. Although there are no great financial benefits for farmers in delivering their coffee as a group, there are other benefits. Each group has an executive committee of three, plus a lead farmer and a first-aid worker who work on community improvement (e.g. first aid, drinking water) and facilitate access to credit and savings schemes promoted by Utz Kapeh certification. However, group marketing of other crops, such as maize, has significantly increased the prices obtained.

**Case study 4.** The exporter is a subsidiary of an international commodity trader that, in 1998, decided to initiate organic coffee in Africa. By 2005, it operated with close to 4 000 contract farmers, all in one district, producing robusta coffee beans; it was not keen to work with organized farmer groups. Besides organic conversion, the project is very much about improving quality and this is managed by the field staff. It has also been certified by Utz Kapeh. Benefits to farmers are better prices for quality, an increase in production, and a premium for organic and Utz Kapeh certification.

**Case study 5.** This local entrepreneur originally exported conventional fruit and vegetables. In 2001, there was a change to organic fruit and a specialized company was established in 2002. It operates as an exporter-contract farmer scheme that began in one district and expanded to two others in order to have both a year-long supply and a range of fruit. In 2006, some 150 smallholder outgrowers were involved. Because of logistical problems, the exporter is encouraging farmers to organize themselves in groups of 20–25 farmers in order to deliver the specified quantity and quality of products according to an agreed delivery schedule, which will result in a more efficient supply chain. The exporter provides some financial support to the groups and has brought a subsidized dryer from Europe, so that more fruit can be bought from farmers and unit transport costs are lower. This diversification has made the company and farmers less dependent on airfreight costs, and has spread the relatively high certification costs across two businesses and a wider range of products.

**Case study 6.** This project started in 1994 with a large home farm producing pineapples; in 2007, 80 percent of the fruit came from 250 smallholder farmers, organized in six to ten groups in five districts. However, collection and transport are an issue. The exporter intends to develop collection centres, where farmers can bring their produce for the exporter to buy and collect. The collection centres can also be used for other products, as long as they are kept clean. Only one production manager and

**BOX 2** (continued)

his assistant run the field operation. Initially, the business exported fresh fruit, which is still done but much less than before. The business has shifted from the smooth Cayenne pineapple to other fruit such as passionfruit and apple bananas. The main interest of the company has always been in dried fruit and they have invested in various types of solar and hybrid dryers over the years, trying to find efficient equipment that delivers sizeable quantities of a consistent product at an affordable cost. From selling bulk-packed dried fruit, the company has ventured into retail packaged fruit. Over the years, it has received support from various donor-funded projects, which have provided mainly advisory services.

**Case study 7.** This relates to a local entrepreneur who initially went into farming for export, with three large home farms totalling over 500 ha. Organic certification was obtained in 2001 and one of the farms gained fairtrade certification in 2003. The company exports kitchen herbs, Asian vegetables, pineapples, passionfruit and mangoes. The entrepreneur invested heavily in a cold chain, with loans from various banks. Following the lead of an exporter who planted 68 ha with drip-irrigated mangoes, a group of 50 mango smallholders was encouraged to plant mangoes in order to become suppliers for the exporter in the future. They started as an informal group in 2003, but in 2006 finalized their constitution and registered as an association. Their trees are just coming into production. Because of problems with marketing his own fruit, including mangoes, the entrepreneur is not yet marketing any of the fruit of the outgrowers.

**Case study 8.** This packer/exporter started exporting organic fruit in 1998. Although production began on two of his own 20-ha farms, it was soon delegated to smallholders and his own production halted. The company works with 30 groups of farmers, each with eight to 20 members, in three different ecological zones. The total number of farmers is 440, cultivating a total of 230 ha and producing 2 500 tonnes of fresh pineapple, of which 500–800 tonnes are exported fresh via sea freight. The groups are organized in four legally registered associations that are now organic and fairtrade certified. There has been no donor or support organization involvement. The main advisory services come from the buyers and the certification bodies.

Note: company managers/owners explicitly requested anonymity both for their enterprises and their countries.

Source: adapted from van Elzakker, 2006.

## METHODOLOGICAL ASPECTS

The methodological tools used by the different studies were quite similar. In all cases, questionnaires were prepared and direct interviews undertaken with organic farmers, processors, exporters and other market agents. For Brazil and Hungary, secondary data sources were also important. In the Hungarian case, information

was based on a questionnaire study carried out four years previously and on a study used to provide a fuller picture of the marketing and financial aspects of organic agriculture. In the eight African cases, six involved repeated visits to the sites for interviews and follow-up to ensure accuracy of the data, while in the other two cases information was obtained from available reports.

The information obtained was quite diverse. In the Indian and Thai studies, information specific to two different organic rice operations in each country was obtained, so there are risks in generalization of the findings across the whole organic sector. The Brazilian study reported on the experiences of five different agro-ecological farmer organizations, which produced a range of crops and utilized a variety of domestic marketing channels. Again, this information may have limited value across the wider organic sector where larger volumes are commercialized through supermarkets and the food industry. Information specific to eight organic coffee and fruit case studies was obtained in the African review of the general status of organic agricultural exports involving smallholders. The Hungarian report provided a more general discussion of the marketing and financial situation of its small organic sector, without focusing on any individual farmer or farmer organizations.

In short, the case studies offer various alternative ways of organization of the supply chain and business strategies that are typical of the organic sector.

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## Chapter 3

# Marketing strategies

A marketing strategy combines product development, promotion, distribution, pricing, public relations and other elements. It identifies a company's marketing goals and explains how they will be achieved, ideally within an established time frame (Miles and Snow, 1978; Kotler, 1991). This definition illustrates that the case studies reviewed adhere strictly to a marketing strategy.

What the cases reflect are the attempts of organic businesses to capitalize on emerging market opportunities, which correspond to the adaptability dimension underlined by Miles and Snow (1978), as well as attempts by businesses to create a unique product (or set of products) that is perceived by consumers as clearly superior in value. This specialization, generally termed differentiation, has also been suggested as a key strategy dimension in marketing (Abell, 1980). Therefore, the strategy here is to supply a differentiated certified product through the particular market channel for organic produce. Product, price, promotion and distribution strategies are determined by demand from particular niche markets. Thus the marketing term refers to how the supply chain is organized and organic products are commercialized with respect to market channels and participants in the chain. The following review summarizes the information obtained in each of the five reports on the marketing methods used in the case studies.

### MARKET INITIATION

In the majority of the cases, market initiation was undertaken by the entrepreneur, business or exporter. Having identified a market opportunity, they set up a business and supply chain to meet it. Sunset organic rice in India, 'TOPS' organic rice in Thailand and several of the coffee and fruit export cases in Africa began in this way. In only a few cases did the farmers themselves initiate the establishment of the supply chain to fulfil a market demand or opportunity. Examples are BFRO, the farmer organization in Thailand, the agro-ecological farmer organizations in Brazil and the organic producers in Hungary. Two of the African coffee projects were initiated by farmer organizations. However, three of the four fruit chains were originally initiated by a single farmer/entrepreneur from his home farm, after which links to outgrowers were established.

In a few cases, the supply chain and market link were actually initiated by a government agency or NGO as a means of promoting organic farming as an alternative for small farmers. An example is UOCB in India, a government agency that supported basmati rice farmers in converting to organic production in order to supply a private sector company that sold the rice for both export and domestic markets. BFRO in Thailand linked up with Green Net Cooperative (GNC), a social enterprise that acted as a market agent for European fairtrade importers.

In Brazil, NGOs and federal and local government agencies supported farmer groups in adopting agro-ecological and organic production methods while facilitat-

ing the development of organic marketplaces in urban areas for direct marketing to consumers, and opening up government social programmes as a market for organic and agro-ecological products. In East Africa, many organic farming projects for small farmers have been established through the Swedish International Development Cooperation Agency (SIDA)-funded organic programme, EPOPA (Export Promotion of Organic Products from Africa, [www.epopa.info](http://www.epopa.info)), which has promoted links between the private sector and smallholders. The fairtrade organization and its affiliates, particularly in Europe, have contributed to the initiation of some of the cases reviewed by providing a market for smallholder production, thereby engendering higher incomes and community development.

### **ORGANIZATION OF THE SUPPLY CHAIN**

Among the cases studied, supply chains ranged from very short where farmers market directly to local consumers, to the more elaborate chains where various actors are involved in moving the organic products along from farmer to consumer.

#### **Farmer to consumer**

In Brazil, direct marketing is popular for producers of agro-ecological products who sell their products at marketplaces or “ecological fairs” provided by municipal governments. Farmers transport and sell their produce directly to consumers according to schedules set up by the marketplaces (MBA Nucleus and COOPERA-FLORESTA). The farmer groups are supported by an NGO (AOPA – Association for the Development of Agroecology) in their production, and in the organization and development of these fairs. Prices are established through producer group negotiations with the local municipality and state government bodies responsible for the fairs. Another direct marketing link to consumers is through home delivery of baskets of organic products, which is also carried out by MBA Nucleus. COPAÉCIA in Brazil sells its processed products directly to consumers through organic fairs, but also takes orders directly from consumers via the Internet.

In Hungary, the smaller organic farms produce a variety of crops including fruit and vegetables, which are marketed directly to consumers through organic fairs, home delivery and at farms.

#### **Farmer to retailer or supermarket**

In Brazil, some agro-ecological producers are organized collectively to sort and pack fresh and processed products for shipping directly to supermarket and retail stores. This is the case of ECOCITRUS, which produces certified organic and agro-ecological fresh oranges, tangerines and juice. The cooperative collects fruit from its members, processes and packs the products and transports them to the retail outlets. Here, supermarkets make no differentiation between organic and conventional fresh fruit and no premium is paid. However, differentiation is made for juice, so higher prices and visibility are achieved. The agro-ecological production movement appears to question the appropriateness of marketing its produce through supermarkets where target consumers are looking for quality and health benefits, rather than the environmental and social benefits associated with the products. COPAÉCIA, for example, markets its grape juice and range of processed fruit products to retail stores via sales representatives.

In Thailand, the private retailing company TOPS markets organic produce under its own brand name in its supermarkets located in the various cities. Rice, coconut milk, coffee and shrimps are some of the products marketed under its brand. The company also operates a home delivery scheme.

### **Farmer to institutional buyer**

In Brazil, a number of local and federal government programmes are encouraging the inclusion of organic foods in school meals in some areas, as well as promoting links between agro-ecological producers and social programmes, such as supplying low-income families through the national Food Acquisition Programme (PAA). All the Brazilian farmer organizations reviewed have supply chains to these types of institutional markets, which is very much part of the social agenda in the agro-ecological farming philosophy.

### **Farmer to processor**

In the two organic basmati rice cases in India, farmers supply a rice mill with their paddy and the processed rice is shipped in bulk or put in retail packs before exporting. In the first case, a private company organizes the supply chain, where a federation of farmers produces the rice under contract, and the company transports, processes, packages and distributes the product to both domestic and export fairtrade and organic markets in Europe. In the second case, a public-private sector partnership links up with the federation of farmers. The Uttarakhand Organic Commodity Board (UOCB) is a state government organization that oversees production with farmers and negotiates contracts with the main buyer who processes the rice at his own mill, and packs and transports it to domestic and foreign markets.

In Hungary, large- and medium-scale farms sell to wholesalers who then supply the retail and food industry. Medium-scale farms generally supply the food industry directly.

In Thailand, for domestic marketing, TOPS sells and trucks bulk organic rice to its parent company in Bangkok, which then organizes its own retail packing and domestic distribution, mainly through modern conventional supermarket chains and specialized health food stores. For domestic marketing of the organic rice produced by the farmer organization BRFO, its marketing partner GNC sells both bulk and retail-packed rice. Bulk rice is transported directly to domestic company facilities where it is packed and distributed to retail outlets. A small volume of retail-packed products is sold mainly to specialized health food stores by GNC at its office in Bangkok, under its own brand name.

### **Farmer to importer**

In the African cases, the coffee cherries are cultivated by farmers, harvested and brought to a collection centre where they are pulped to separate the beans, which are then dehulled and dried. Some of these operations may also be done on the farm. The beans are then bagged and exported directly to the importer. The beans are sometimes sent first to an exporter to be graded and repacked before being shipped to the importer for roasting or selling on to the roaster and packer for retailing.

In one case, the union of farmer cooperatives receives the coffee beans from primary cooperatives and dehulls, grades and packs them. Some are also roasted. The cooperative



union exports directly to a fairtrade buyer in Europe. In the second case, three cooperatives formed a limited company for exporting their green organic and fairtrade coffee beans. The company receives the coffee beans from member farmers, grades, cleans and packs them into 37 different products for export directly to fairtrade importers abroad.

### **Farmer to exporter**

In the two organic rice cases in Thailand, a buyer purchases the rice and exports it to clients abroad. One case (TOPS) is private-sector led while the second deals with a farmer organization (BRFO), which supplies a social enterprise (GNC) responsible for exporting the product to the buyer in the European fairtrade and organic markets. TOPS' supply chain begins with individual farmers, who produce organic jasmine rice under contract to the company, although they are organized in three groups for scheduling collection. TOPS subcontracts a rice mill owned by another private company, Chai Wiwat Agro-Industry (CWA), to mill the rice. CWA provides transport for paddy collection from the three farmer groups. As the milled organic rice is exported in bulk, TOPS is responsible for trucking the bulk milled rice to port and container loading. TOPS has an exclusivity agreement for organic rice trading in Europe with a major Italian rice trading company through its relation with its mother company, which also trades conventional rice through the European importer. The importer cleans the rice and puts it in retail packs for distribution to conventional supermarket chains and organic shops.

The second Thai case, which follows a similar supply chain, is described in Box 3.

In Hungary, the larger organic farms produce major quantities of cereals and oilseeds and so are able to supply export markets directly and sell to the food processing industry. Some farms use export agents who collect the products from a number of farms before exporting them.

In two of the African cases, organic coffee farmers supply an exporting company, rather than exporting directly themselves. One of the exporters is a subsidiary of an international coffee house. It is supplied directly by over 900 farmers on individual contracts. The exporter encouraged farmers to organize themselves in community groups of 20–25 persons, in order to transport and deliver their bulked coffee to one collection centre. In another case, the supply chain involves around 4 000 contract farmers in one district, who supply the exporting company, which is a subsidiary of an international commodity trader. The exporter buys at the farmgate from each individual farmer on scheduled days.

The supply chains for African organic fruit in the cases reviewed are all similar: farmers are linked directly to an entrepreneur who exports fresh and sometimes dried organic fruit, mainly pineapple. In the first case, the community group farmers are contracted to deliver fruit to the exporter's packing house according to an established schedule. Some of the fruit is dried and the remainder marketed fresh. The supply chain in the second case includes both fruit from farmer groups (80 percent) and from the entrepreneur's home farm (20 percent). Most of the fruit is dried in solar or hybrid dryers by the entrepreneur, packed in bulk and in consumer packs and exported. In the third case, the supply chain is set up to receive organic mangoes both from the entrepreneur's home farm and from an association of 50 outgrowers. The entrepreneur has invested in a cold chain for handling, packing and transporting the mangoes to the port for export. In the final case, pineapples produced by four

**BOX 3****A supply chain for organic rice in Thailand**

BRFO handles organic paddy collection, storage and milling of rice in its own mill. Local paddy transportation is organized by member farmers. The milled organic rice is either exported as bulk rice or retail-packed according to the orders coordinated by GNC, BRFO's marketing partner. Bulk rice is trucked down to Bangkok and loaded into containers for export. For retail packing, the bulk rice is transported to the packing unit in another province. Transport is organized by BRFO. GNC subcontracts retail packing, according to the importer's requirements, to a packing unit operated by another organic farmer cooperative. Claro Fairtrade AG, a Swiss-based fairtrade organization, coordinates GNC's exports to fairtrade importers in European countries, each of which distributes the packed organic rice to retail outlets in its respective country.

Source: adapted from Panyakul, 2006.

producer associations link up with a single buyer who sorts, packs and exports the fresh fruit by sea freight. These associations have formed a union and have thus received fairtrade certification.

**ROLES AND RESPONSIBILITIES**

Within the supply chains, the various actors have a range of roles and responsibilities as the organic products move along from farm to consumer, while meeting the certification and quality criteria demanded by markets and consumers.

*Farmers* are responsible for cultivating crops according to organic procedures that can be certified by the appropriate authority. In several cases, individual farmers sell their products or deliver them directly to a collection point organized by the buyer. Farmers may also be contracted by the buying company so they need to comply with scheduling, quality and other contractual requirements. At COPAÉCIA (Brazil), individual farmers process their product and then sell it themselves. In Brazil and Hungary, individual farmers are also responsible for transporting their products to organic marketplaces in urban areas where they sell directly to consumers.

*Farmer organizations.* In cases such as those of organic rice in Thailand and India, farmer federations are organized to represent the farmer groups that are producing the requested volumes of organic product to be supplied in bulk to the buyer. In one of the Thai cases, the farmer organization BRFO owns the rice mill itself, so it is also responsible for collection, storage, milling and transportation of the milled rice. In two of the African cases, the farmers are organized in cooperatives or a cooperative union that see to the collection, handling, storage and shipping of the product to buyers for export markets. The agro-ecological farmer organizations and cooperatives in Brazil act more as solidarity groups in their relations with municipalities and government programmes, although the ECOCITRUS group is a production cooperative that also processes citrus juice for marketing directly to supermarkets.

In Hungary, the absence of farmer organizations has been mentioned as a limiting factor in the development of the organic sector, especially for small-scale farmers.

**Buyers.** There are a number of different types of buyers with diverse roles in the supply chains of the cases studied. They include individual entrepreneurs, international trading houses, food processing companies, supermarkets, wholesalers and retailers as well as government programmes. At the simplest level, a buyer receives the organic product and pays the supplier, whether farmer, farmer organization or other intermediary (wholesaler, export agent). In the cases cited, however, all buyers played a greater role (see Box 4). Most buyers assisted farmers with some level of extension, training and credit in terms of inputs, and in some cases were active in promoting the formation of farmer groups and associations to facilitate collection, training and/or certification, etc. Fairtrade buyers, as a key component of their partnership with farmers, provided advance payment for the product as well as a premium for supporting community investments as part of their fairtrade agreements.

In Thailand, TOPS facilitates the provision of extension support to farmers from government agencies; it is also responsible for trucking the bulk rice to port, container loading and shipping to its rice marketing partner in Italy. For domestic marketing, TOPS sells and transports bulk rice by truck to its parent company in Bangkok, which organizes its own retail packing and domestic distribution. In the second case, BFRO sells rice from its farmer members to its marketing partner, GNC, which subcontracts retail packing, according to the importer's requirements, to a packing unit operated by another organic farmer cooperative. Claro Fairtrade AG, a Swiss-based fairtrade organization, coordinates GNC's exports to fairtrade importers in European countries, each of which distributes the packed organic rice to retail outlets in its respective countries. For marketing within Thailand, GNC sells both bulk and retail-packed organic rice from its office.

In the case of UOCB organic basmati rice in India, the buyer is a private company that accesses its large infrastructure for transporting, storing, processing and marketing the rice, primarily to markets in the United Kingdom and the United States of America. The company also provides farmers with farm inputs on credit.

In one of the African cases, three cooperatives formed a limited company for exporting their green organic and fairtrade coffee beans. The company receives the coffee from member farmers, grades, cleans and packs it into 37 different products

#### **BOX 4**

##### **Responsibilities of a private sector buyer**

In India, the Sunstar Overseas company provides organic basmati rice farmers with training and farm inputs (certified seed, biofertilizers and biopesticides) on credit. It has facilitated and coordinated the organic certification of farmers by setting up an ICS, which has led to a significant reduction in the cost of certification. The company is also responsible for purchasing the produce at a pre-established price under a five-year contract. It is subsequently in control of processing and exporting the organic products.

for export to its fairtrade partners in Europe. A separate management and marketing company coordinates the programme, ICS, internal and external inspections and training, and work on improving quality in association with leaders of the cooperative. It is also responsible for warehouse management and marketing quality.

Buyers play a similar role in organic fruit exports from Africa. They contract supplies of fresh fruit from farmers who are usually organized in community groups. The buyer provides a packing house and sometimes processing facilities for producing dried pineapples. In one case, the buyer has invested in a cold chain for handling, packing and transporting the fruit to the port for export.

In Brazil, supermarket buyers do not pay any premium to ECOCITRUS or differentiate its fresh organic produce from any other, so prices paid are low; however, they do pay a premium for processed juice, so ECOCITRUS has become a major producer of organic citrus juice.

**Support organizations.** In several of the cases reviewed, a number of organizations – both governmental and non-governmental – support farmers so they can be certified as organic and participate in organic food supply chains. This is in addition to the support given by farmer organizations or private sector buyers.

In India, for example, the public sector agency UOCB performs a facilitating role through its field officers in motivating farmers to become organic growers and to form federations; it provides training in cultivation technology, pest and disease control, documentation and technical inputs; arranges for organic certification, which includes an ICS system to facilitate and reduce the cost of the certification process; and negotiates marketing the organic rice at a premium through a large rice company that supplies export markets. UOCB has also arranged for the certification of a rice-processing mill for export as well as at least ten warehouses. The farmer federations have become competent in negotiating terms and conditions for the sale of their produce, training member farmers and supplying farm inputs.

There is a similar situation in Thailand, with the support provided by the NGO Earth Net Foundation (ENF) to farmer members of BRFO. Five field staff are employed by ENF for extension and managing the ICS required for certification.

In Brazil, the agro-ecological farmer groups are supported by the NGO AOPA in the production, organization and development of organic fairs or marketplaces in urban areas. Prices are established through producer group negotiations with local municipal and state government bodies responsible for the fairs. Government agencies at the federal, state and municipal levels promote organic production and consumption as well as providing support for training, marketing and procurement for a range of social food supply programmes.

In Hungary, it appears that farmers act individually, with no services from NGOs, the government or other support organizations.

Most of the coffee projects in Africa have had some degree of support from international donors as well as from fairtrade and Utz Kapeh certifiers and partners. This support has been in the form of technical assistance and training for organic conversion and certification; building management capacity; improving production methods and product quality; and establishing community development in water supplies, health services and education.

African organic fruit exports have not had the same level of support from external agencies. This may be because of the lack of organization by producers in the cases

studied or because these projects are all private sector operations where the entrepreneur plays the key role of exporter and is the major stakeholder in helping farmers grow organic produce. Some advisory support, financed by donors, has been received on organic production, food safety and technical and financial assistance for fruit drying in a few cases.

### **TRANSPORTATION, LOGISTICS AND INFRASTRUCTURE**

In any agrofood chain, the maintenance of product quality from farm to consumer is paramount in order to achieve good prices and a sustainable business. This means that transportation and logistics of the harvested product are important components of the supply chain. Organic products have specific additional requirements in that handling, transportation, storage and packing must be undertaken under certified conditions and separately from non-organic products. Therefore, once the product leaves the organic farm, transportation and handling facilities must be able to meet these requirements. More recently, traceability has become increasingly required by export markets as a means of ensuring product quality along the chain. This places additional demands on producers, processors and market agents for organic products sold in these markets.

In both sets of organic rice cases in India and Thailand, transportation of the rice from the farm is arranged by the private sector buyer or the farmer organization involved. The rice is transported to a mill, where it is stored separately from conventional rice, should this also be milled there. In some cases, the farmer organization has its own warehouses where it stores the rice prior to transfer to the mill.

In the Brazilian cases, CAPANEMA farmers transport their own produce by bus. The local municipality has also supported them by building warehouses for commercializing ecological products and classifying seeds. Another farmer cooperative has its own truck and also uses one provided by the city to transport its produce to organic fairs. In the African cases, coffee farmers mainly transport their coffee cherries individually to a central facility for processing, which is owned by the cooperative union or other farmer group. The green coffee is then delivered by truck to exporters, who may supply the transport. As regards fruit, transportation is critical because of the perishable nature of the fresh produce. The logistics of collecting fruit from outgrowers has been a problem for entrepreneurs. Buyers have

#### **BOX 5**

#### **Organic rice in Thailand – transportation and logistics**

TOPS has no marketing logistics and infrastructure. Since its main role is trading, all logistics are contracted out to various suppliers and service providers. At the processing level, it subcontracts milling to the Chai Wiwat Agro-Industry (CWA) for storing the paddy and milling. It hires a private transport company to truck the milled rice to Bangkok. For export arrangements, it relies on the support of its parent company, Capital Rice. Moreover, TOPS does not have its own rice export licence but uses that of Capital Rice.

encouraged the formation of farmer groups in different locations, so that growers transport their own fruit to a central collection point from where the entrepreneur can transport it to the packing house. This is usually done on a scheduled basis to minimize the time between harvest and packing, thereby keeping damage to a minimum and retaining quality.

With respect to infrastructure, two main situations exist. First, the individual farmer does not have the resources to invest in transport, storage or processing facilities in order to ensure good-quality products for market. Therefore, the trend has been to form farmer groups that can establish a collection centre or a group packing facility for transportation of products to their processor, exporter or directly to the consumer. In some cases, this has extended to processing such as rice milling (India, Thailand) coffee dehulling (Africa), fruit juice processing (Brazil, Africa), fruit drying (Africa) and even retail packing of products (India, Thailand, Brazil, Africa). Generally however, processing, storage and trucking are handled by the private sector entrepreneur, wholesaler or exporter. Attempts to establish cold chains for fruit and vegetables have been inefficient and expensive because of low capacity of use and operational costs, especially in African rural areas. In some of the Brazilian cases, refrigerated warehouses have been supported by government programmes for the benefit of small-scale organic farmers.

It is clear that transportation and infrastructure components are critical to the success of the organic and conventional supply chains of developing country farmers. More attention needs to be given by government and international cooperation agencies to supporting farmer organizations as well as by private sector partners to ensure that adequate financing and technical support are available to overcome limitations in this area.

### **DISPUTE RESOLUTION AND ARBITRATION**

Only in a few of the cases reviewed were farmer contracts mentioned, where there would normally be provisions for resolving potential disputes between farmers and buyer.

In India, the UOCB-fostered linkage between the farmer federations and Satnam Overseas Limited, the private sector buyer, is governed by contracts stipulating that disputes between the two are to be settled directly. UOCB has no role in the resolution of such disputes. However, since it is a public agency, it may provide advice to the farmers involved. There was no indication as to whether any dispute had yet occurred.

In Thailand, TOPS has a direct relationship with its farmer suppliers. It organizes an annual meeting in order to negotiate prices with farmer representatives. There is no legally established dispute resolution and arbitration mechanism at this level as problems are discussed directly and compromise solutions agreed upon at the meeting.

Again, in Thailand, BRFO has a contract agreement with GNC for marketing. The agreement is not a purchase contract but more a memorandum of understanding between the two parties. There is no clause in the agreement relating to dispute resolution and arbitration. However, as an attempt to institutionalize fairtrade practices, GNC has set up an Organic Fairtrade (OAF) Rice Committee of representatives from producer organizations (including BRFO) as well as NGOs involved in these projects. OAF is responsible for deciding the fairtrade price structure for organic rice, the coordination of production and processing, and policies related to joint marketing of organic fairtrade rice through GNC. Any disputes between GNC and

producer organizations are supposed to be brought to the attention of the OAFI committee meeting for resolution. It is not clear whether any other mechanism exists for further arbitration if a trade dispute cannot be resolved by OAFI since no such case has arisen.

## Chapter 4

# Financing

A wide range of funding sources to support organic farmers in their development, operations and marketing exists across the countries and cases reviewed. Table 2 illustrates this range. The specific sources of funds for each country and case study are discussed in the following section.

### STATE AND COMMERCIAL BANKS – FORMAL CREDIT OR LOANS

In general, formal credit is particularly important for organic farmers as they may undertake farm investments during the conversion period without premium price rewards. However, there are no credit lines specifically available for these farmers – they are treated like any other farmer.

In India, agricultural credit is facilitated by the National Bank for Agriculture and Rural Development (NABARD), through commercial banks (50 percent), cooperative banks (43 percent) and regional rural banks (7 percent). The main schemes for short- and medium-term loans are shown in Box 6.

#### BOX 6

##### Government loans available for farmers in India

- *Crop loan* is available for all farmers for cultivation purposes. The repayment period is 18 months or less.
- *Produce marketing loan* helps farmers store produce to avoid distress sales. The loan is available for a maximum of six months.
- *Kisan Credit Card Scheme (KCCS)* provides farmers with account facilities to meet their credit needs as they occur. The credit limit is based on the size of landholding and cropping patterns. It is available for farmers who have good track records over the previous two years. Almost 60 million credit cards have been issued.
- *National Agricultural Insurance Scheme (NAIS)* provides farmers with insurance and financial assistance in the case of crop failures from natural causes and pest or disease attacks, as well as encouraging them to adopt efficient cultivation practices and inputs.
- *Agricultural term loan* is a long-term loan given by commercial banks to create assets for increasing agricultural income. These cover small irrigation facilities; farm mechanization; introduction of horticultural crops, dairy, poultry, sericulture; and dry/wasteland development, etc. The loan is offered to farmers as direct finance with a repayment period of between three and 15 years.



**TABLE 2**  
Sources of funds for each case reviewed

FINANCE SOURCE/ CASE	State/ commercial banks	Informal banks, orgs	Microfinance input, suppliers, traders	Self- financing	Govt grants and subsidies	Donors	Value- chain finance
Sunset basmati rice, India	Bank						Buyer
UOCB basmati rice, India						National support	Buyer
TOPS organic rice, Thailand	Bank						Buyer
BRFO organic rice, Thailand					Grant for facilities		Buyer (fairtrade advance payment)
Brazil				Farmers		NGOs	
Hungary			Intermediaries	Farmers			
<i>Africa</i>							
Case 1				Farmers			Buyer (fairtrade advance)
Case 2				Farmers			Buyer (fairtrade advance)
Case 3							Buyer
Case 4							Buyer
Case 5				Farmers		International donor	
Case 6				Farmers		International donor	
Case 7	Bank			Farmers			Buyer
Case 8				Farmers			Buyer

Source: authors' elaboration based on Alam, 2007; Kürthy, 2006; Panyakul, 2006; Schultz, 2007; van Elzakker, 2006.

Although the amount of credit for agriculture has increased, it is still too little to meet farmers' needs. Only a very small number of farmers have access to institutional credit. Unless the credit resources available are increased substantially, the government policy objective to meet farmers' need for credit will be only partially fulfilled.

In Thailand, organic farmers already have access to credit from the Bank for Agriculture and Agricultural Cooperatives (BAAC), which provides credits for all farmers. This is a state enterprise under the jurisdiction of the Ministry of Finance, whose objectives are to extend credit to individual farmers as well as through

farmer organizations in order to promote agriculture and help farmers and their institutions increase their productivity and incomes. The loan is made directly to individual farmers with either land collaterals or personal guarantors. Farmers can apply for loans at branches of BAAC and obtain the loan within a few days. The interest rate is fixed at around 9 percent per annum.

As a registered farmer organization, BRFO has also received financial support from the Ministry of Agriculture and Cooperatives (MoAC) for investments in its rice mill and all major infrastructures. These funds were provided free of charge with no interest under the condition that they be used only for the approved projects.

The Community Organizations Development Institute (CODI) is a public organization under the supervision of the Ministry of Finance whose main objective is to promote the development of community organizations and civil society by coordinating the efforts of stakeholders involved in community development. One of its key activities is to provide credit and loan facilities to community organizations in order to improve the quality of life of their members. Organic and sustainable agriculture are one of CODI's main intervention strategies. It has a special loan fund for local community organizations undertaking business related to organic agriculture. Loans do not need collateral but the loan proposal must be reviewed and approved by the regional and national committees.

The Community Bank Services of the Krung Thai Bank Public Company Limited (CBS-KTB) constitute a social programme of KTB whose majority shareholder is the Ministry of Finance. Its aim is to provide favourable loan funds to community organizations as well as assist them in improving their business operations. Collaterals or at least guarantors are required to underwrite the loan. CBS-KTB then recommends the loan conditions – volume, interest rate and payment terms – to the KTB branch nearest to the borrowers, where the final decision will be made. In effect, the community organization undertakes the loan agreement directly with the nearest KTB branch and CBS-KTB only has an advisory role for loan approval. GNC coordinated with BRFO and another three organic rice producer organizations to apply for the CBS-KTB loan as a single project. The credits are provided individually to each organization by separate branches of KTB. The loan conditions are like an overdraft credit where interest rate is applied when cash is drawn out. If the producers have some cash to repay part of the loan, the interest charge is reduced accordingly.

The credit mentioned most frequently by Brazilian agro-ecological farmers is that of PRONAF (Programa Nacional de Fortalecimento da Agricultura Familiar [National Programme for Strengthening Family Agriculture]), which has a specific line of credit earmarked for agro-ecology. The difficulty is in actually receiving the resources, since there is a requirement for certification and proof of recent purchase of all materials needed for planting crops. Thus, because credit for organic agriculture is so restricted in Brazil, farmers have to use their own private resources, or else depend on other organizations to support them.

From the survey undertaken in Hungary, it appeared that organic farmers prefer subsidies to bank loans. The use of bank credit was the least popular among the farmers, since the banks evaluate the risks very strictly and charge high interest rates. Moreover, they often require farmers' houses as collateral, but farmers are not willing to risk their homes. They prefer to offer buildings, land, machinery, equip-

ment and vehicles instead. Guarantee funds are available for agricultural producers as a kind of government support for agricultural enterprises, but using these makes the loan more expensive.

For fruit exports in Africa, entrepreneurs have had difficulty managing their businesses with their own personal funds, but have only had loans from a national bank and, in one case, a Pan-African bank. They find interest rates expensive and collateral requirements and lending conditions restrictive, so prefer to seek loans from European banks or through their buying partners in Europe.

### **INFORMAL BANKS AND ORGANIZATIONS**

In Thailand, BRFO receives advance payment from GNC, its buyer, during the harvest season to pay for 30–50 percent of the organic paddy. When the paddy is milled and delivered to GNC, this amount will be deducted from the final payment. GNC provides this advance with no interest. However, BRFO is responsible for and bears the cost of storage of the paddy. GNC, for its part, secures this advance payment from its fairtrade partner in Europe. The advance payment is based on agreed prices and the quantity to be exported.

The African coffee cooperative union finances its own operational costs, but receives crop finance from a fairtrade organic crop financing scheme provided by a group of European institutions. These loans are guaranteed by special funds so that no collateral is needed from the farmer organizations. In the second case studied, fairtrade buyers provide crop financing according to the volume they want to buy. They charge normal commercial interest rates but do not require collateral. This cooperative also has a substantial loan from another fairtrade fund to build warehouses, complementing funds provided by its members. When these loans are repaid, the cooperative has some assets that can enable them to borrow locally. However, because of the high interest rates in local banks, they prefer dollar- or euro-based financing, which can be guaranteed by its European buyers.

### **MICROCREDIT AND INFORMAL LENDING**

Self Help Groups (SHGs) are an important source of microcredit for small farmers in India. The SHG programme is linked with commercial banks, regional rural banks and cooperative banks that permit village-level SHGs and microfinance institutions to borrow with relaxed security requirements. The agencies involved in the schemes are NABARD, banks, NGOs and SHG members. India's SHG programme is now the largest in the world, with more than two million functioning groups. However, the resources available for financing the credit needs of SHGs can only meet 5 percent of requirements. The average loan amount per beneficiary is too small to make a significant contribution to organic farming.

The survey in Hungary indicated that many organic farmers rely on creditors or personal contacts to provide them with personal loans, which often have little or no interest. For smaller and poorer enterprises, the short-term loans provided by intermediaries are important, since these are paid back after the harvest and no instalments are paid during the production season. To acquire new machinery, leasing is often a preferred solution, because no collateral is required and loan approval is obtained in two to three days. In most cases, the trader provides a guarantee to buy back the equipment. The producer benefits by paying only a proportion (10–30 percent)

of the price of the equipment, so is able to renew farm machinery, pay a monthly fee and increase competitiveness.

### SELF-FINANCING

In Brazil, producers are inhibited by low access to commercial bank financing, so they predominantly use their own resources or borrow from family members.

Four African fruit producers were self-financed by the entrepreneurs managing them, but some found that their finances were being severely stretched because of the long lead times for receipt of payments from their buyers abroad. As lending conditions and interest rates from local banks are exacting, the entrepreneur is attempting in one case to obtain partial funding from one of the European buyers and a commitment to increased orders as guarantee for the loan.

### GOVERNMENT GRANTS AND SUBSIDIES

The cases in Brazil demonstrate how access to grants from a range of government programmes has been effective in promoting the agro-ecological farming sector, municipal markets and community and sustainable development. Box 7 illustrates one such case. Government subsidies are an important source of finance for organic farmers in Hungary. The findings show that farmers rely on these for financing their production and associated investments. All agricultural producers receive a subsidy according to their cultivated area. Organic farms receive the same subsidies as those available to conventional farmers, but receive additional payments from special environment programmes. Before 1997, there were no subsidies for organic farming at all. Between 1997 and 2001, organic farmers were able to apply for a subsidy for specific costs of transition to organic production (which ranged between 40 and 70 percent of costs). In 2002, the National Agri-environmental Protection Programme was initiated,

#### BOX 7

##### Government grant financing in Brazil

Funds were obtained for CAPANEMA from the Secretaria de Desenvolvimento Territorial do Ministério do Desenvolvimento Agrário (Bureau for Territorial Development of the Ministry of Agrarian Development). This agency's principal goals are to: promote and support the strengthening of social capital and social cooperation networks based on the criteria of social development, autonomy and participation; make territorial economies more dynamic; and integrate public policies better. Access to these government grant funds requires partnerships with municipalities, which are responsible for receiving and then allocating the resources, as well as contributing complementary funds towards projects. Several producer organizations have benefited from these grants that have been used for establishing marketplaces, purchasing equipment for agro-industries, and acquiring vehicles for transporting products. CAPANEMA's municipality has received support for building warehouses for marketing ecological products and classifying seeds, as well as for holding training courses on production.

which included organic farming as one of its five subprogrammes. This provided an area payment for five years to farmers who applied to the programme and undertook to continue organic farming for at least five years. The amount depended on the type of land (grass, arable, vegetable, vineyard or orchard) and whether the farm was in transition or organic production. When Hungary joined the EU in 2004, the programme was integrated into the National Rural Development Plan (NRDP). Some small changes were made in the structure of the programme, but the subsidy for organic farming was raised and 80 percent of the programme was financed by the EU.

Since 2004, organic farmers enjoy some degree of preferential treatment within the Agricultural and Rural Development Programme (ARDP). This programme is also co-financed (EU 75 percent, Hungary 25 percent) and its most important aims are to develop agriculture and diversify rural activities. Organic farmers are prioritized in certain subprogrammes: agricultural training and education; development of processing and trading of agricultural products; and diversification of rural activities. In 2005, a new Agricultural Development Loan Programme was implemented in Hungary with components that support organic farmers, but without preferential treatment when compared with conventional farming.

#### BOX 8

#### **Brazilian farmers receive donor grants through international NGO**

**COOPERAFORESTA.** Activities began with three families, supported by the Coordenadoria de Assistência Técnica Integral (CATI) of the Secretariat of Agriculture in the state of São Paulo and by World Vision, an international NGO. These resources financed production activities and agroforestry formation. As the group expanded, financial support was obtained from the local municipality and World Vision to buy equipment and establish marketplaces in the city of Curitiba. A truck for transporting products was purchased with partial support from, a Canadian NGO. A portion of the funds was repaid to establish a microcredit facility coordinated by AOPA.

From the beginning of COOPERAFORESTA's activities, it received financial support from World Vision for the purchase of banana-processing machinery. World Vision is active all over Brazil and supports the promotion of sustainable development in the poor regions of the country.

The municipality purchased a truck, with finance from PRONAF, to enable family agriculturists to transport their produce to marketplaces. Donations are also received from Projecto Iguatu, financed by the Programa Petrobras Ambiental, in which a consortium of farmer associations, government and NGOs work together to enhance the skills, technology and production of family farms in the area. The resources provided to COOPERAFORESTA were used to purchase seeds and to provide "green" fertilization. The monthly resources received from this project are complemented by World Vision and by AOPA.

## DONOR GRANTS

ENF, an NGO, derives its finance from various domestic and international sources; the grants are all made available by donor organizations to support organic agriculture development in Thailand. ENF used this donor support to provide technical assistance to the BRFO rice project in Thailand. These grants are becoming less and less available as donors' priorities have shifted to African countries, where they do not specifically address organic farmers.

## PRIVATE SECTOR/VALUE CHAIN FINANCING

Private companies in the supply chains, such as buyers, provide their own funding to support their partners' activities and those companies collaborating in fairtrade agreements. In Thailand, for example, TOPS has access to finance from its parent company, Capital Rice, to cover the required cash payments for organic paddy. For this internal loan, TOPS pays 7 percent interest. These funds are part of Capital Rice's loans obtained from commercial banks in Thailand.

Two of the coffee exporters in the African cases reviewed are part of global coffee companies, so their financing is set up by the parent company in Europe through complex deals with European merchant banks.

Boxes 9 and 10 illustrate the two cases in India where private sector financing partnerships have been essential for the functioning of organic rice supply chains.

The case studies reviewed show that setting up and operating an organic production chain require substantial financial resources, which are often beyond the means of small farmers and their organizations, so they have to rely on partnerships with buyers and others to finance their participation. Formal credit and loans from commercial banks and government programmes generally have no specific component for organic farming

### BOX 9

#### Private sector partner financing of organic supply chain

Costs of setting up the Sunstar organic production chain in India have been borne by the company from its internal resources. Since the company is a large trader, it has adequate resources to initiate and sustain the chain until it becomes profitable. In addition to the expense of initiating the project, the company has borne heavy expenditure in establishing separate storage, transportation, processing and marketing facilities. It has also paid the farmers a premium during the period of conversion. Most farmers in the organic chains are smallholders and their access to credit is limited. By and large, they have to depend on their own resources to finance farming operations. Although most farmers working with Sunstar are found to use agricultural credit from various commercial banks, the loans are small. Those from banks are available at interest rates varying from 9.5 percent to 12 percent per year. Local money-lenders give credit at much higher rates, between 24 and 36 percent. In addition to credit from banks, the farmers receive inputs (seeds, biopesticides, etc.) on interest-free credit from Sunstar. This amount is deducted at the time of harvest.

**BOX 10****Public-private partnership financing of organic supply chain**

In Uttarakhand, the government supports the activities of UOCB, while the Ratan Tata Trust gives financial support to the Centre of Organic Farming that manages the training of farmers and ICS. The buyer of organic basmati rice (Satnam) finances post-harvest operations. Farmers do not receive direct financial support or subsidies. As with other small farmers, they have only limited access to institutional credit. Although they have formed SHGs, the loans available through microcredit schemes are insufficient for their credit needs. However, they receive seed and other inputs (biopesticides and biofertilizers) from Satnam on credit. This amount is deducted at the time of harvest. Inputs are supplied to farmers through the federations.

*Source:* adapted from Alam, 2007.

operations, with the exception of Hungary that has links to EU programmes, and Thailand and Brazil, where specific financing mechanisms for community organizations and family agriculture give preference to organic farmers. In general, farmers did not seek financing from commercial banks because of their high interest and collateral demands. They prefer to rely on their own resources or borrow informally.

Private sector partnerships were the key source of financing for the organic supply chains. Their finance came from personal or internal sources and in some cases from commercial banks. In other cases, fairtrade partnerships between producers and buyers in developed countries were able to finance production and post-harvest operations reliably, through provision of advance payments. However, this was not always sufficient to pay for all the harvested crops, particularly in the case of rice, so that farmer organizations still had to find more funds locally.

In summary, financing of crop production for smallholders continues to be problematic in developing countries, whether the product is organic or not. Where private sector or fairtrade-type partnerships are being developed or are functioning, it would be desirable for commercial banks and government-backed programmes to be encouraged to develop appropriate financing mechanisms in order to facilitate the smooth functioning of all essential activities along the supply chain.

## Chapter 5

# Post-harvest, quality and value-added aspects

In all supply chains, produce must be handled carefully from harvest through all the post-harvest operations to ensure that the final product is of optimal quality and is safe when it reaches the consumer. This is essential for all products but, in the case of organic products, there are additional requirements to ensure the product's integrity through the various operations so that its organic nature is not compromised. This means handling, processing, packaging, storage and display operations need to be separate from conventional products to ensure that the organic product does not come in contact with nor have other ingredients added that might compromise its organic certification.

The post-harvest, quality and value-added aspects of the cases studied are reviewed below. They have been grouped into the following categories: processed products for export and fresh fruit and vegetables for export and the domestic market.

### PROCESSED PRODUCTS FOR EXPORT

#### Organic rice

Post-harvest operations in organic rice supply chains involve threshing; drying; transportation to processing; milling; packing; transportation to port, export market and buyers; retail packing; transportation to sales points; presentation for sale; consumer purchase and use. Efficient and timely post-harvest operations at the farm and rice mill and attention to storage and transportation conditions are critical to ensuring optimal quality of the organic rice at the point of sale and for consumption. This is particularly important for rice that is exported in bulk, as the grain is much more exposed to the elements than the packaged product.

The same post-harvest operations are required for Thai jasmine rice and Indian basmati rice. In the Thai case, processing results in wholegrain or brown rice, which is produced by removing the husk from the paddy rice in the mechanical mill; and white rice, where the bran is removed from the wholegrain rice. Additional steps are needed for high-quality rice, such as grading of grain size, polishing (for white rice only) and screening out the damaged grains. The rice is then ready for packing, either in bulk or in retail packs as required by buyers. In the case of TOPS, further value is added by creating a range of products such as jasmine rice, long-grain rice and brown parboiled rice.

For Indian basmati rice, Sunstar alone is responsible for the post-harvest management of organic paddy, following its procurement from farmers' stores. The company has three large, fully mechanized modern rice mills, which produce rice of a quality that is acceptable globally. The paddy is brought in clean sacks and stored in a separate area. Then it is taken to the factory where samples are tested for microbiological contamination and foreign material. The company



maintains separate facilities for storage, packing and for the delivery of the milled rice to market. The processed rice is delivered without delay so that the chances of infestation are minimized. Nevertheless, despite these precautions, between 5 and 7 percent is lost through infestation.

As special care is required for the storage, processing, transport and marketing of organic rice, handling costs are considerably higher than those associated with conventionally grown rice. Sunstar estimates that the labour costs involved in the processing, packaging and marketing of organic rice are 40 percent higher than for conventional rice. Marketing costs are also higher since the volume of organic produce sold is less than conventional produce, while marketing costs are the same. Freight costs for the export of organic basmati rice are between 20 and 25 percent higher than conventional basmati, because of the special conditions required to prevent contamination of the rice during shipment. Costs are also higher since the shortest and most direct routes are taken to reduce the risk of infestation.

In the other Indian basmati rice case, Satnam, the buyer, is among the leading players on the global market and uses world-class post-harvest management techniques and processing facilities consisting of a number of modern processing mills, including a new plant set up recently in the United Kingdom. It has long experience and extensive facilities to procure, store and transport paddy efficiently.

However, there are still some problems at the farmer level. According to the agreement with Satnam, farmers are responsible for preliminary cleaning, removing stones and dirt. This is done manually and is not very effective. After harvesting, farmers store the paddy for about a week but the stores are not well designed and considerable damage is caused by rodents and pests, and by poor control of the paddy moisture content. These problems at the farm level could be addressed by using mechanical threshers that reduce contamination with stones and dirt, and by controlling moisture with moisture meters and establishing improved storage management practices.

Both Satnam and UOCB are working on the improvement of post-harvest management techniques. Satnam has initiated improvements in the quality of the gunny bags in which the paddy is transported and giving them to farmers so that the quality of the paddy can be maintained. UOCB is planning to set up a common facility centre in each farming area, which will include a thresher and a moisture meter. The facilities will be run by the federations. The cost of setting up these centres will be borne by UOCB.

In Thailand, the deterioration of paddy quality in storage is also a major post-harvest problem for BFRO because of moisture and storage pests, leading to losses of 5–10 percent. ENF has begun providing technical assistance to BRFO to develop and install a quality management system for all stages of its post-harvest operations from paddy collection and purchase to storage, milling and delivery. However, significant improvements could be made if BFRO were able to find funding to expand its own storage infrastructure.

These examples illustrate that even with the use of sophisticated technology, attention to quality issues is essential at each stage of the supply chain, starting with the farmer. If the product is damaged at the first stage, subsequent post-harvest operations will not be able to recover its initial quality.

### Organic coffee

In the coffee supply chain, typical post-harvest operations include washing the harvested cherries, pulping the fruit to separate the beans, leaving the beans to ferment and then drying them in the sun. All this can be carried out at the farm. Subsequently, the beans are transported to a central location where they may be further dried before dehulling, grading, packing in sacks and transporting to the importer. They will then be roasted at a processor (and sometimes ground). Finally, they are packed in retail or wholesale packs for delivery to distributors and end markets. The supply chains reviewed cover operations up to packing for transportation to the importer, which are the most critical in terms of final cup quality of the coffee, and hence its value to the buyer. Most of these stages are the responsibility of farmers and their organizations. Since organic products are more expensive for the consumer, a quality product is expected, besides being certified as organic.

In the one case, the cooperative union began a quality improvement programme with its fairtrade buyer in 2001, which consisted of training and rewarding farmers for improving their fermentation and drying operations, so as to achieve more reliable quality. Some central washing stations are now being established where only ripe, red berries are processed and quality is more closely controlled. The union recently started with roasted, consumer-packed coffee targeted at the Arabian Gulf market. It also took a share in a company making instant coffee. This has essentially failed, since the process uses a spray dryer to produce instant coffee, while northern markets prefer freeze-dried instant coffees.

In the second case, the primary cooperative societies were certified organic. Substantial gains were made through improving the way their coffee was harvested, pulped, fermented and dried, but also in how it was classified and stored in 37 different types. This allowed some roasters to market a single origin coffee.

Apart from the introduction of organic and Utz Kapeh certification, in a further case the exporter worked on improving the quality of the non-washed coffee, leading to increases in prices of up to 30 percent. The double certification provides a degree of flexibility in marketing, so that different markets can be serviced.

### Processed fruit for export

Only a few of the cases in Africa indicated that fruit processing for export was being undertaken. The focus has been on dehydration, since this provides a stable product, with less complexity in post-harvest preservation and shipping and lower freight costs because of its low weight to volume ratio. Beyond the post-harvest operations for fresh fruit, additional operations are required if products are to be dehydrated, including peeling, chopping/slicing, blanching and weighing, all of which may be done manually before the product is put on trays and loaded into a dryer. The dehydrated product is weighed into bulk or consumer packs, which are then put in boxes and stored in a warehouse before shipping to buyers.

Three of the entrepreneurs have been experimenting with different types of dryers to produce dried fruit products (mainly pineapples) of consistent quality, higher throughputs and accessible energy sources. In one case, the exporter is investing in a hybrid dryer (solar, biomass and fuel) to have dehydrated pineapple products irrespective of season. There is a need for technical assistance from

experienced food technologists on which type of dryer, dimensions and energy sources would be most appropriate and cost effective in each case.

Only in one instance were frozen fruits considered, but high energy prices, the unreliable cold chain and the long distance to European markets did not make this feasible.

### **FRESH FRUIT AND VEGETABLES FOR EXPORT AND THE DOMESTIC MARKET**

Although the fresh fruit supply chains may be diverse, they all illustrate that timing, preservation and quality are essential for success. Typical post-harvest operations in the export of fresh fruit involve transporting the fruit to the packing house early in the morning when it is cooler; sorting to remove damaged, deformed and undergrade fruits; trimming leaves; washing; further sorting; packing in trays; and storage in a cool room or refrigerated container. The shipment is then transported to the seaport or airport for consignment to the importer. The importer checks the shipment for quality before sending it to wholesale markets or directly to the warehouses of supermarkets or distributors. Again, post-harvest operations at the farm and packing house are critical for business success.

In one African cases dealing with fresh pineapple where there is no cold chain, the product arrives at best at around 20 °C in Europe, which obviously reduces its shelf-life to a few days. The fruit is distributed in health food shops rather than supermarkets as the former do not ask for GLOBALG.A.P. certification.<sup>2</sup>

In another case, a farm outgrower scheme started with organic fresh (air-freighted) fruit, mainly pineapple but also apple banana, passionfruit and papaya. Since it has no cold chain for fresh exports, the company is moving increasingly into dried fruit, again mainly pineapple, because of high airfreight costs and increasing competition in the fresh sector.

In a third case, the venture is certified organic and fairtrade. Its vegetables and herbs are packed or semi-packed for the retail market. Its fruit exports can be both air and sea freighted. The company sells to suppliers of supermarkets in Europe. It has a modern packing house with two blast chillers, cold rooms that can hold 50 tonnes of merchandise and a cooled packing room, located between the country's main airport and seaport. The farms are GLOBALG.A.P. certified, the packing house has a HACCP scheme and the exporter is starting to implement ISO 9000 (quality management). Nonetheless, the venture is still not fully successful because of repeated quality problems with its mango exports caused by the unsuitable agro-ecological location of the farm and the susceptibility of the fruit to disease.

In the final African case, value addition is in the organic certification and, more recently, in fairtrade certification. Given the sometimes high rate of rejects (>25 percent) at the European port where its sea-freighted pineapples arrive, quality improvement, both in the field and post harvest, is needed. There are problems with ripeness and internal browning. This causes the importer to check and repack the fruits upon arrival, at significant cost to the exporter. Apparently, it is the company's activities in dried fruit operations that are profitable, although this was not disclosed by the exporter.

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<sup>2</sup> It now appears that all fruit and vegetables imported into the EU will require GLOBALG.A.P. certification.

In Brazil, by contrast, most of the cases deal with family or small group marketing of organic or agro-ecological products such as fruit and vegetables in the fresh state directly to local consumers in city marketplaces, health stores or on farm. These products require care in handling, packing and transportation. Municipalities provide clean, organized marketplaces, some of which have refrigerated stores as well as organized transport to facilitate direct marketing and quality retention.

Two farmer organizations have more extensive post-harvest operations to produce constant high value-added products, also for the domestic market. ECOCITRUS processes organic citrus juice using a modern processing plant, while COPAÉCIA produces grape juice, tomato sauce and other processed fruit products by simple manual food processing techniques in small-scale agro-industries. In both cases, raw materials are supplied by farmer members of the organization at harvest time directly to the processing unit, so that raw materials are of harvest quality, which results in final products of the highest possible quality. Both organizations achieve much better returns from supermarkets and stores where their products are sold, than from the sale of fresh raw materials. The move to processed and higher-value products has enabled ECOCITRUS production to be differentiated as organic and receive a premium, which is not the case for fresh fruit that has to be sold with conventional fruit at the normal lower price.

In the Hungarian survey, the importance of post-harvest operations and organic food processing was found to be minor. Most organic products are reported to be sold to the domestic food industry and to wholesalers, but apart from fresh products that are found mainly in marketplaces and in small health food stores, most organic products are exported in the fresh state. Organic farmers did not indicate any priority for improving or developing their post-harvest activities.

The fruit and vegetable processing companies do not want any post-harvest activity such as cleaning, sorting, packaging, transport and storage to be carried out by the producers. They prefer to control these operations themselves. The typical wholesaler has the equipment and capital to undertake post-harvest operations such as packing and labelling under their own brand. Some producers have the equipment and labour force for post-harvest operations, including processing. They prefer to sell their products through direct sales channels such as marketplaces, on-farm shops or home delivery, so they can receive the maximum retail price to recover the costs of their post-harvest operations. In addition, there are only a few locally processed organic products found in supermarkets and stores as most processed products are imported. The costs of organic processing on a small scale are not estimated to be any higher than those of conventional food processing technology when there is no interaction with non-organic production batches. On the other hand, prices of organic foods are significantly higher. However, there are extra costs for controlling, labelling and separation of organic raw materials and products that need to be recovered through the selling price.

### **ADDITIONAL MARKET REQUIREMENTS**

The safety and quality of fresh fruit in both the export and domestic market are crucial for the buyer and the consumer to be satisfied. Given the inherent perishability of fruit, and tropical fruit in particular, and the long distances and times between harvest and final consumption, increasing attention has been paid over the

past few years to food safety and quality management along the entire supply chain. In the African export cases, besides the double organic and fairtrade certification, several entrepreneurs are introducing HACCP, as well as other quality frameworks for certification, such as GLOBALG.A.P. and ISO 9000, in order to access markets and ensure the quality levels required.

All these cases show that the burden of responsibility for post-harvest operations falls on producers and their organizations. Whether in rice, coffee or fruit and vegetables, farmers' skills and facilities as well as the timeliness of their activities affect the quality of the final product when it reaches the buyer and ultimately the consumer.

The value-added aspect associated with organic certification is lost if the quality of the final product is not acceptable to the consumer. In several cases, efforts have been made or are under way to improve post-harvest operations and quality management through the implementation of training on the farm; organization of collection; central processing centres; and packing houses. The lack of functioning cold chains at reasonable cost for producers of perishable products such as fruit and vegetables is a serious limitation for the development of both export markets and higher-value domestic markets for fresh products and frozen processed products in developing countries. For the most part, improvements have been financed or sponsored by the buyers or private sector partners and delivered by government extension agencies and NGOs.

For processed products, farmers in the majority of cases passed their produce on to a specialized processor in the chain. In only two cases (in Brazil) did farmers diversify into processing themselves in order to capture more value-added in the supply chain. Both these cases were apparently successful but necessarily implied investment in agroprocessing plants and other technologies (FAO, 2007b). Taking this step adds further complexity to farmers' activities and responsibilities in the chain. It is often advisable for them to specialize in cultivation and on-farm post-harvest activities and deliver a high-quality raw material to their partners in successful organic product supply chains, since these partners are better able to deal with the processing and marketing activities where they have expertise, facilities and resources.

## Chapter 6

# Factors influencing success or failure

The experiences of small farmers from developing countries participating in organic supply chains were mainly positive, as evidenced by the review. This chapter highlights the major influential factors encountered that may help in future development of organic food chains elsewhere. They are summarized in Table 3.

### FACTORS INFLUENCING SUCCESS

A number of factors have influenced success or been driving forces in the development of each supply chain, some of which are particular to one case while others were found to be common across a number of cases.

#### Market access

Available access to markets is perhaps the most influential factor to encourage small-holder participation in organic farming. In India, where the Sunstar and Satnam companies are large traders in basmati rice, they provide farmers with a premium and a secure market to encourage their conversion to organic production.

Similarly, secure market access to the EU and its demand for a large volume of organic rice guaranteed through the parent company's long-term relationship with its Italian partner, enables the TOPS project in Thailand to go ahead.

**TABLE 3**  
**Factors influencing success or failure in organic supply chains**

Success factors	Failure factors
Market access	Inadequate technological development
Participation of private sector partners	Undeveloped domestic markets
Suitable support services	Multiple certifications
Task specialization	High financial costs
Improved product quality and safety	Limited management capabilities
Organized farmers	
Backing	
Adequate financing	

Source: authors' elaboration.

Fairtrade agreements with foreign buyers – for Thai rice and African coffee, for example – not only guarantee access to markets in Europe through the fairtrade network, but provide advance payments to farmers at harvest time and contribute towards investments in community development projects. Together with the premiums paid for certified organic production, this acts as a great motivator for farmer participation and adherence to organic and fairtrade certification requirements.

Organic marketplaces in Brazil facilitated by municipal governments in towns provide important direct marketing opportunities for farmers. The organic marketplace is similarly important for small-scale organic farmers in Hungary as is access to the institutional market in Brazil since government social programmes promote organic production and family agriculture.

The agro-ecological farmer group cases in Brazil demonstrate how diversity, autonomy and respect for natural production cycles and family and local agriculture emerging from agro-ecology can be inherent in the marketing methods used. This explains farmers' use of organic marketplaces, home delivery and supplying food to public sector schools and social programmes.

### **Participation of private sector partners**

Strong linkages between producers and buyers, where the private sector partner takes responsibility for financial and managerial resources and provides farmers with support for all major stages of the supply chain, are a major success factor. The organic rice supply chains illustrate how support throughout the chain – production, certification, procurement, storage, processing and marketing – ensures a high-quality product (for example, Sunset basmati rice in India) and, through the implementation of ICS, considerably lowers the costs of certification for farmers.

In the African export projects, supply chains were more successful when led and backed by private sector exporters than by farmer groups themselves. Besides market access, exporters provided extension services in organic production, quality management and ICS, which were important factors in the success of the ventures.

Private sector partners were also effective in coordinating support from a range of government agencies, especially for farmer training and extension (for example, TOPS rice in Thailand and UOCB rice in India), market linkages and development (vegetables in Brazil and Hungary). TOPS successfully coordinated with various public and private agencies to support and provide services to its organic project, which enabled it to remain small and focused on its role as a trader, without the need to invest in associated infrastructure, transportation and processing facilities. Having the large company Capital Rice as its parental company and key supporter was also critical to the success of the TOPS project.

### **Support services from NGOs**

NGOs have played an important role in the promotion of organic production and marketing as a means of generating improved incomes for poor farmers in developing countries.

In Brazil, the success of MBA Nucleus is due to support from the organic producers' association AOPA, which is involved in setting up groups of farming families and prioritizing products to be sold in organic marketplaces in the cities to maximize returns and reduce surpluses in glut seasons. Similarly, COOPERAFLORRESTA's success is due in part to financial and technical support from NGOs such as World Vision and AOPA.

In the BFRO Thai rice project, much of its success is due to the technical support provided by the local NGO (ENF) and its marketing partnership with GNC.<sup>3</sup>

### Support services from government agencies

Specific government policies and programmes designed to foster organic production, commercialization and consumption have helped the development of the sector considerably, especially at the level of smallholder and family farms, as illustrated in the Indian and Brazilian cases.

In India, UOCB successfully motivated a large number of farmers to adopt organic farming through committing technical and managerial resources over the long term, and by providing training, facilitating certification and negotiating contracts with buyers.

In Brazil, producers and organic production in general receive good support from the federal, state and municipal governments through various agricultural, commercialization and social programmes. This model of government support for smallholder production and marketing and sustainable development approaches could be more widely implemented. Farmer groups, such as COOPERAFLORRESTA and CAPANEMA, have progressed through partnerships with local municipalities, which have led to the establishment of permanent marketplaces, the purchase of equipment for agroprocessing and the acquisition of vehicles for transporting products.

In Hungary, a major driving force has been financial support given to farmers for conversion to organic production through programmes related to Hungary's accession to the EU, as well as ongoing area payment subsidies.

### Task specialization

Lessons from almost all the cases reviewed suggest that successful supply chains are those where each component of the chain specializes in their particular area of competence. For example, farmers should specialize only in the production of quality products that meet organic specifications. Again, BRFO in Thailand kept its focus on organic fairtrade rice without trying to expand its operation to new areas. It was able to develop expertise and specialization in organic rice production and handling and so improve the efficiency and efficacy of its business.

In only a few cases did farmer groups diversify their products and extend their specialization to processed products in order to capture a higher value-added further down the supply chain. ECOCITRUS' venture in Brazil to diversify into processing fruit juice enabled its product to be differentiated in the marketplace as an organic product with a premium price and thus generated higher returns for farmers. COPAÉCIA's success lies in its small but diversified range of processed fruit and vegetable products, which are highly sought after in a market with limited offerings of this type. The cooperative seeks constantly to specialize in products with high value-added, thus making it possible to attain higher margins.

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<sup>3</sup> ENF and GNC are the same organization with shared staff, although they have different statutes. How this model works is briefly shown in Box 11.



**BOX 11****Multistakeholder effort as driving force in the successful export of organic rice**

Much of the success of BRFO in its organic fairtrade rice project is due to the collaborative efforts with ENF and GNC. Since BRFO kept its focus on organic fairtrade rice and did not attempt to expand its operation to new areas, it was able to develop expertise and specialization in organic rice production and handling and so improve the efficiency and efficacy of its business. The leadership of BRFO remained constant and committed to the organic rice project as well as to its collaboration with ENF and GNC, which was essential for such a long-term development project. BRFO was also able to find crucial loan finance regularly in order to pay farmers at harvest time (to make up the difference from the 50 percent advance payment provided by its fairtrade partner) and be able to store organic paddy during the year. This was crucial to supply its marketing partner GNC throughout the year. The contribution of ENF's technical assistance and capacity building for BRFO farmer extension, handling and processing was also fundamental to success.

Source: adapted from Panyakul, 2006.

**Improved product quality and safety**

Besides the requirement to satisfy organic certification, organic product initiatives should aim for a specific market and develop the capacity to supply products that consistently meet specified quality standards. In the two African coffee and pineapple projects, the introduction of quality programmes such as HACCP had positive impacts on the buyer and seller, enabling them to work together on quality in order to develop a “preferred supplier” relationship.

The implementation of a participatory quality assurance scheme contributed to improvement of product quality as well as management efficiency for BRFO rice in Thailand. By analysing the hazards affecting the quality of the product and operations with the active participation of staff, critical points for quality and management control were established.

**Organized farmers**

In all cases, the organization of farmers in groups, associations, federations or other more formal alliances improved the success and sustainability of the supply chain, and also apparently the returns for individual farmers. In only a few cases did buyers deal directly with individual farmers for their supplies. The presence of an efficient and effective farmer organization facilitated much of the interaction with the buyer, the certification body, technical support, financial agencies and the provision of training and farm inputs.

**Backing**

The driving force behind a venture and its ultimate success depends on the backer behind the project motivating everyone in the supply chain to play their part. This

backer tends to be more the exporter, buyer or NGO than the producers, but in some cases may be the farmer organization (see Box 11). It is important to recognize the authority of the backer and provide appropriate support.

### **Adequate financing**

The case studies with the most reliable financing, essentially from private sector or fairtrade partners, had the most success with their organic ventures. Where there were difficulties in accessing finance for post-harvest equipment, storage facilities or purchase of harvested crops, the organic venture was more precarious. Given the requirement to preserve organic attributes, financing needs to be assured for all value chain activities, not just for individual components.

### **LIMITING FACTORS CONTRIBUTING TO FAILURE**

A number of factors have been identified that are limiting the success of the organic ventures under review.

#### **Inadequate technological development**

The extent of technical training and the availability of technologies are considered inadequate in most organic farming activities. The majority of farmers in the Indian rice ventures considered training to be in short supply especially in the preparation of compost, control of disease and pests, documentation and grading of rice.

Furthermore, farmers often do not respond to the call for better harvesting and post-harvest handling, which are key to achieving a high-quality product for export. While it is essential that farmer training in post-harvest practices and their impact on product quality be implemented and extended, the installation of central processing units may also be appropriate for these operations in some situations. The deterioration of stored paddy, a constraint faced by BRFO in storage, is causing losses in the region of 5–10 percent, and this needs to be addressed by implementing a quality management programme. Appropriate training and technological development in improved quality management are also issues in organic coffee, fruit and vegetable projects in Africa and Hungary.

The choice of technology, especially in fruit drying, has not been successful in the African cases reviewed, leading to high investments and running costs and an inability to produce quality products consistently at a competitive price. More information, technical assistance and access to appropriate dryers and other processing equipment are needed to assist processors in selecting the most appropriate equipment to ensure a good-quality competitive product.

#### **Undeveloped domestic markets**

In the Brazilian agro-ecological projects reviewed, the majority of cases are limited in their marketing because they produce a wide range of farm products but in small volumes. While this is their philosophy and choice, it does limit their potential for supplying conventional markets such as supermarkets, wholesalers or processors. A similar situation exists in Hungary.

In Brazil, ECOCITRUS is organized to supply supermarkets with fresh organic citrus fruit. However, low prices for conventional fruit and lack of differentiation between that and organic fresh fruit mean low returns for producers. This situation

has consequently motivated them to diversify into organic juice production, where differentiation and a price premium are feasible.

Consumer confusion about the characteristics of organic products in both Hungary and Thailand has limited development of domestic demand. Lack of identity and appreciation of the value of organic products in health food shops in Hungary limits market growth and explains why it is estimated that 90 percent of organic fruit and vegetables are exported. In Thailand, supermarket managers are not keen to differentiate products since they want to keep prices low in order to be competitive.

Low domestic demand for organic products is common across all cases cited, with the possible exception of those in Brazil. This situation has forced farmers to become involved in more complex export supply chains, which are highly competitive and risky. There is a need for campaigns to promote domestic consumption of organic foods, involving organic grower organizations, NGOs and government agencies, following the experience of Brazil.

### **Multiple certifications**

Farmers have limited capacity to deal with other types of certifications such as Utz Kapeh or GLOBALG.A.P. in addition to managing organic certification. Benefits to smallholder farmers from these schemes are not clear; they mean additional obligations and costs for exporters or farmers, without the benefits of a higher price or a better farming system. It is difficult to comply particularly with GLOBALG.A.P. in a smallholder situation.

### **High financial costs**

Loan costs are relatively high in most developing countries, leading to high production costs and lower returns.

In Africa, apart from fairtrade and organic coffee projects, which are often financed by exporters and importers, financing of rural agroprocessing projects, especially for equipment, is a major limitation. Borrowing from local banks is too costly. Fruit exporters struggle to obtain funds for investments in equipment such as dryers and refrigeration. This may partly be due to the small scale and thus minimum attraction of projects but also because there is little experience to draw on.

### **Limited management capabilities**

Other factors limiting success in organic projects relate to management capabilities such as literacy, organization, professional skills, business knowledge and planning.

The low level of literacy among farmers makes it difficult for many to join the organic basmati rice projects in India since they have difficulty in maintaining records.

In Hungary, one major limitation concerns the lack of organization of smaller producers for efficient marketing to processors, wholesalers and export markets.

The large old cooperative unions in Africa have problems when competing in a liberalized market since they do not always work in a professional manner – they lack business orientation and have a limited understanding of quality or innovation. There is a scarcity of qualified personnel in Africa willing to work in rural areas on organic farming, product quality and supply chain management for domestic and export markets. This is common in many developing countries. Field staff are usually not paid well and lack the incentive to stay. Even when exporters appear to be

keen business people, many have limited capacity in decision-making and management of logistics and finances. This affects the sustainability of their business which in turn risks the livelihoods of farmers supplying their ventures.

The relative inefficiency of the BRFO rice mill operation in Thailand, because of a lack of professional skills and business knowledge in its farmer management, results in very high operational costs, a higher price for its organic milled rice and lower competitiveness in the organic rice market.

Support for organic projects does not generally extend over a sufficiently long period for sustainability to be achieved. Positive impacts are not likely to be seen when certification is achieved after three years. Consolidating the changes and relationships needs a longer-term enabling environment, and real achievements may only emerge after seven or eight years. Planning an organic project or business needs to take into account that a more flexible and long-term approach is needed. Lack of government support and lack of an enabling environment and institutional framework for organic production are major constraints.

## **FUTURE DEVELOPMENT AND CHALLENGES**

### **Market expansion**

Market expansion both at home and abroad is a key challenge in the successful organic rice projects in India. Growth in the market would open up further business opportunities as well as help extend organic production and farmer benefits. To this end, these projects need to expand business to incorporate many more farmers and cover a larger area. As an incentive for farmers to expand their production area, a premium market needs to be found for other organically grown crops other than rice.

In Thailand, as a trading company, TOPS has a secured access to EU markets through its business partners, but now it needs to explore opportunities in new markets in other Asian countries and the United States of America.

### **Maintaining a balance between business and social/environmental objectives**

Like many other business operations undertaken by producer organizations and developmental NGOs, the BRFO-ENF-GNC project in Thailand attempts to run a profitable business while maintaining a social and environmental agenda. Regrettably, there are few institutions that offer support for community organizations such as BFRO, operating socially and environmentally accountable enterprises in a competitive market.

For non-traditional business ventures, such as this organic and fairtrade collaborative project, the most pressing challenge is business survival through increasing competitiveness. As global business becomes more competitive, survival particularly for smaller companies becomes increasingly difficult, and it is equally difficult to fulfil social objectives that may further increase costs. The challenge is for BRFO to move wholly into organic paddy and abandon trading in conventional paddy, but this is constrained by the slow growth of the organic rice market and increased competition from other suppliers, leading to a smaller market share for BRFO and possibly downward pressure on the premium price.

Furthermore, market expansion needs additional funds to purchase the paddy at harvest time, since financing the existing revolving fund is already critical. BFRO would have to expand its infrastructure and therefore access to investment funds, especially for larger storage facilities. If BFRO's project is to survive and prosper, it

will have to reduce its high operational and management costs and tackle inefficiencies in the system that have reduced its competitiveness.

### **Quality and food safety**

Quality management and food safety along the chain, especially at the farm level, will be essential as more farmers are incorporated and markets become more competitive. Promoting the quality attributes of organic products provides great opportunities for product differentiation and capturing a premium market share.

### **Training**

A common challenge encountered in the African projects reviewed was the lack of training for those in the supply chain in a range of disciplines, particularly group organization, business skills and post-harvest and quality management. While there may be good experience of training in organic production, little attention has been paid to farmer group organization; production planning; group production and marketing; post-harvest and quality management; and record-keeping for smallholders.

Curricula for training in the development of ICS and internal inspections as well as market requirements are available. Training materials on business management, market research value chain financing and contract farming have also been produced by FAO. Yet training in sales agreements and trade financing is not well developed. On-farm research and other participatory learning methods, including reciprocal visits along the supply chain, are needed to understand better the needs of others. The challenge is to bring this all together in packages appropriate for farmer organizations, project field staff and private sector partners and to identify how these can be institutionalized, delivered and financed. Where possible, locally based service providers and exporters' in-house extension services should provide such training, with support from government, the private sector and donors.

### **Motivating farmers**

Another challenge is to continue to motivate farmers to become and stay involved in farmer groups in these organic ventures. Many farmers are motivated by the possibility of farming successfully without needing to purchase external inputs such as fertilizers and pesticides. In conventional farming, they have all experienced deductions for inputs when delivering their harvest, resulting in reduced income. In some cases, the development of a new farmer organization has been an important motivating factor, especially when linked to guaranteed advance payments and markets through fairtrade agreements. However, resistance towards producer organizations remains, as there have been too many experiences of groups operating without adequate transparency, lack of trust between members, and leaders emerging who sooner or later take advantage of their position. Participatory and transparent management and relevant ongoing training as mentioned above could assist all farmers to participate fully in their ventures.

### **Adequate finance**

Organic supply chains depend on adequate finance at different stages in the chain in order to be able to function efficiently and competitively. The challenge is for banks and other lenders to take a holistic chain approach in their evaluation for

loans for any or all of those participating in the chain, so that adequate financing is made available where it is needed.

### Domestic market supply chains

Since most of the cases reviewed focused on export ventures, little mention was made of the significant opportunities that exist in the large urban centres of developing countries to expand domestic markets as a means of diversification, reducing the risk of relying solely on export markets, and raising consumer awareness of the environmental and health benefits of organic products. This provides great opportunities and challenges for the future expansion of organic product supply chains in African cities, as well as supermarkets and tourist markets in Thailand and India and public sector programmes that are successful in other countries.

The challenges faced by domestic Thai markets are consumer confusion about organic agriculture, price competition and retailers who are unconcerned about differentiating organic products. Consumers are confused about organic agriculture *vis-à-vis* other product attributes, resulting in their unwillingness to pay higher prices for organic produce. As prices of conventional products are relatively low, organic products cannot be priced much higher. So, efficiency and cost reduction are critical issues for the competitiveness of organic projects targeting the domestic market. The dominance in retailing of modern supermarket chains and discount stores results in a focus on price competition and cheap rather than quality products on sale. Supermarkets have little interest in promoting organic products at a premium, which explains the slow growth of organic market development in Thailand.

The main challenges for agro-ecological farmers in Brazil relate to whether the direct marketing approaches being used at present will become saturated in the future, supply will exceed demand and producers will receive lower prices. At this point, they will have to deal with conventional markets and their demands for volume, quality, consistent supply and price. In those cases where retail markets are already being served, efforts will need to be made to promote the differentiation of organic or agro-ecological produce, so that a premium can be received in return for the values and environmental benefits inherent in the product. The already close links to government programmes should be explored to undertake this consumer and retailer education challenge.

In Hungary, organic farmer organizations need to be promoted so they can provide adequate volumes of their produce efficiently and consistently to buyers in the food industry, to supermarkets and the wholesale trade. Incentives for this development could be included in current government subsidy policies by extending them to and prioritizing farmer groups, as well as providing capacity building support.

As in Thailand, farmers in Hungary need to tackle consumer confusion by promoting their products and clearly describing the values and attributes of organic farming. This can be done through alliances with relevant government agencies and private sector partners.

To take advantage of opportunities to develop and expand domestic markets for organic products, government agencies should promote and support the organic sector, especially by improving communication with consumers and procurement of organic products for health and nutrition programmes as described in the cases from Brazil. Efforts are also required in the development of standards, certification and labelling to build consumer confidence.



## Chapter 7

# Conclusions and recommendations

### CONCLUSIONS

The diverse cases reviewed in this paper demonstrate that organic supply chains are successfully operating in developing countries for export markets and, to a lesser extent, in domestic markets for the benefit of small-scale farmers. The premium obtained for organic products when differentiated in the market and the fact that organic production methods eliminate the purchase of chemical pesticides and other chemical inputs both act as motivating factors for farmers to convert their production; undergo and maintain organic certification; and organize themselves in groups, associations and federations. Efficient farmer organizations facilitate commercial relationships with buyers; access to finance; assembly of adequate quantities; post-harvest value addition; and the delivery of services such as training, inputs and transport. In short, they improve the success and sustainability of the supply chain.

Partnerships in the supply chain with others in the private sector, particularly buyers or importers, can provide secure market access and access to finance, inputs and support services such as training and quality management provided by the company directly or through other support groups, including government agencies. It is common to find participation of buyers in the organization and management of ICS. These partnerships can also be effectively managed by a third party group, such as an NGO that can deal with farmers' production and quality on the one hand and the deliveries and conditions demanded by buyers on the other.

As evidenced by the cases reviewed, much still needs to be done in domestic markets to communicate the value and attributes of organic products and their production to consumers, so that they are willing to pay a premium price and retailers can differentiate products in supermarkets and stores. Domestic markets need to be developed in order to reduce the risks of farmers producing solely for export markets and by providing initial local markets for small-scale organic producers. The cases indicate the importance of direct marketing to domestic consumers through organic marketplaces or fairs, home delivery and on-farm sales.

With regard to financing, in most of the cases reviewed no distinction appears to be made between organic and conventional farming and their supply chains. Organic farmers have to compete with conventional farmers for credit through commercial banks and government programmes. However, these do sometimes provide credit targeted at community groups and organic and sustainable production. In some supply chains, the private sector provides financial resources through internal mechanisms to ensure the chain operates smoothly. Fairtrade agreements to export organic products are particularly valuable because of the i) advance payments made to farmers even during the in-conversion period; ii) secure market price (which can be higher than the conventional international price); and iii) contributions made for community development projects.



The financing of organic supply chains is generally problematic no matter whether it is required for equipment or for some or all of the stages of conversion, cultivation, transportation and post-harvest operations. Farmers find it difficult to access affordable credit for production, while farmer associations also have problems in obtaining finance for post-harvest equipment such as threshers and dryers, and for transportation. Equally, entrepreneurs and buyers have difficulty in financing post-harvest facilities for drying, refrigeration and cold chain development. Although the private sector can sometimes provide the resources needed for operation of the supply chain, commercial banks, backed by government programmes and international finance institutions where necessary, should take a holistic chain approach and provide financing to those activities in the chain that are critical to its smooth and efficient operation, in a timely and cost-effective manner.

There is increasing awareness that more attention needs to be given to improving post-harvest operations for organic products, in order that they meet food safety standards and reach the market with optimal quality so as to capture the organic premium, which is the main motivation for farmers and others in the supply chain. The operations and equipment required are no different from those required for conventional produce, except for the requisite that organic products be managed separately in post-harvest operations. When further value-adding activities are undertaken, such as processing and packing, these have been most effective when carried out not by farmers themselves but by specialists in the supply chain with the appropriate equipment, quality control and organic certification.

The importance and the lack of adequate training and support services are highlighted in many of the cases reviewed. In some cases, the government extension service has been able to supply or provide training in organic production techniques while in others this support is provided by NGOs with environmental backgrounds. In African countries, there is little or no government extension for organic production. Private sector partners have sometimes been able to coordinate support from government agencies for training or have hired specialists, but this is rare. There appear to be major gaps in training with regard to other supply chain activities such as post-harvest operations, record-keeping for certification, organization for marketing and business management. Initiatives in training and implementation of quality management need to be promoted and supported more widely, since quality assurance is essential for the sustainability of the supply chains and benefits to farmers.

Government support for the establishment and operation of organic supply chains is mixed. In the African cases, government policies and support services were absent, despite the considerable potential for organic product exports and the benefits that could be generated for small-scale producers. However, the cases from India, Brazil and Hungary demonstrate how government support has encouraged the development of organic farming and marketing, particularly in Brazil where government policies encourage procurement of organic produce for public sector food and nutrition programmes.

## RECOMMENDATIONS

### Governments

- Governments should consider promoting an enabling environment to facilitate the development of organic supply chains for both export and domestic markets by establishing a task force or other appropriate body along the lines of UOCB in India. This will mean expanding extension services to include organic production techniques and post-harvest operations; developing credit lines for conversion and certification costs, purchase and storage of harvested crops, post-harvest and processing equipment, cold chain facilities and transportation; and support for training in food safety and quality management, business management and associated consulting services from local private suppliers.
- In association with environmental NGOs, the private sector and leading producers in the organic sector, governments should also promote organic products for domestic consumption through consumer awareness campaigns; develop organic marketplaces in partnership with municipalities; and promote the procurement of organic products for public sector health, food and nutrition programmes. Furthermore, where the organic sector is becoming consolidated, the development of organic standards and certification and promotion of local certification bodies could build consumer confidence in organic products and reduce certification costs for producers.

### Companies partnering with farmers

- Partnering companies should identify market opportunities in domestic or foreign markets before participating in or developing organic supply chains.
- Companies must ensure they have the capacity in human and financial resources to back the development and operation of the organic supply chain. They should be open to forming alliances and partnerships and working with other organizations such as farmer groups, NGOs, government agencies and banks with different philosophies and working methods in order to capitalize on synergies that lead to greater supply chain efficiencies and competitiveness.
- Companies should play a special role in ascertaining that sufficient funds are available for smooth operation and quality management along the supply chain. In this way they can, for example, support farmers' credit applications for production and post-harvest operations, and facilitate training in quality for farmers provided by government agencies, NGOs and private service providers.

### Financing institutions

- Financing institutions are encouraged to develop appropriate financing mechanisms that will take the idiosyncrasies of organic production such as the conversion period and product segregation along the supply chain into account. They should facilitate the smooth functioning of all essential activities along the chain.

### Support groups

- Support groups such as NGOs that work with small-scale farmers in organic projects should have the capacity to deal with food safety and quality, finance, marketing, business management activities and post-harvest issues with their own staff or through alliances or subcontracts with specialist groups at universi-

ties, consultants and technical servicing companies. They should maintain regular training and skills upgrading of their staff in these areas to support farmer groups in their negotiations with buyers and markets and in updating farmers' understanding and knowledge.

- The groups should evaluate opportunities for accessing fairtrade markets and obtaining double certification, given the benefits and motivation this provides for smallholder farmers and their communities; secure markets for small volumes of an expanding range of products, international branding and publicity, advance payments, higher premium for certified organic products, and contributions to community development projects. The support groups should aim to minimize the number of different certification schemes that farmer organizations adhere to, since record-keeping and an understanding of the different certification requirements present major challenges for farmers.

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## Organic supply chains for small farmer income generation in developing countries

*Case studies in India, Thailand,  
Brazil, Hungary and Africa*

Despite the increasing attention given to organic supply chains over the past decade, there are still significant market opportunities to pursue. The demand for organic products in developing countries continues to grow and price premiums for organic certified products are available, albeit not comparable with those of a decade or so ago. This paper focuses on case studies on organic rice in India and Thailand, horticulture products in Brazil and Hungary, and coffee and fruit in African countries. It first summarizes findings on the marketing, financing, post-harvest and value-added components of these organic ventures and then provides conclusions and recommendations for policy-makers, the private sector and support organizations for the future development of organic supply chains in developing countries.

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