e-Learning Course on

Successful Organic Production and Export (SOPE)

Module 2: Organic Production

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Acronyme

CB	certification body
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FiBL	Research Institute of Organic Agriculture
GAP	good agricultural practices
GMO	genetically modified organism
IBS	IFOAM Basic Standards
ICS	Internal Control System
IFOAM	International Federation of Organic Agriculture Movements
ITF	International Task Force on Harmonization and Equivalence in Organic Agriculture
NOP	National Organic Program
UNCTAD	United Nations Conference on Trade and Development
UNEP	United Nations Environment Programme
US	United States
WHO	World Health Organization

2.1 Intoduction: Starting up a organic agriculture venture

Most successful organic producers are well informed, highly trained (formally or informally) and very committed. In organic production, a good understanding of the natural environment surrounding and constituting farms is key to being successful. A fairly good knowledge of organic production standards and regulations as well as of the markets that host these standards is very important for meeting market obligations and getting products to the marketplace. This is true for successful organic farmers in developed or developing countries, whether small, medium or big.

Because of the requirements for knowledge, skills and experience, not all organic ventures end in success; in fact, there are many situations where farmers have tried to produce organically and failed. However, this should not be discouraging since, in most cases, these failures are directly related to a lack of information (both on production methods and marketing issues), a lack of understanding of organic production as a holistic process, a lack of support or abrupt and poorly planned transition processes. As elaborated in Module 1, organic agriculture is not conventional agriculture with different agro-inputs, but rather a whole system approach to agriculture.

Organic farming is a highly professional activity and, as such, it takes study and practice to master before farmers can be fully prepared to do it successfully. This is highly challenging because, in the meantime, farmers must continue to make their living based on agricultural production. Learning to farm organically is a process that can take several years. Fortunately, as more and more farmers have successfully met this challenge, there is now plenty of information on the key elements to take into consideration when embarking on an organic initiative.

This module presents an overall vision of the key factors that an organic farmer needs to know, and plan for, when converting to organic production. These issues include options for production methods, ways to plan and implement the conversion process, the most common challenges during the conversion period, the importance of quality assurance in organic products and the role of certification within the context of the organic markets. With a good grasp of the issues laid out in this module, anyone planning to take on the challenge of starting up an organic venture should be well prepared for avoiding the mistakes that have riled organic enterprises in the past.

2.2 The Conversion Process

When starting up an organic production project, a number of activities have to be implemented by the producer in order to facilitate the transition from conventional to organic farming. This period of transition is more often referred to as the conversion period. According to the International Federation of Organic Agriculture Movements (IFOAM) Basic Standards (IBS), the conversion period is *the time between the beginning of organic management and the certification of crops and animal husbandry as organic* (IFOAM 2006).The length of this period will vary according to different standards and regulations. In order to qualify for some standards, farm land must be under organic management for a fixed period of three years for all kinds of crops; however, under other standards, this period could be shorter, depending on the kind of crop and/or land use practices in the past. The Food and Agriculture Organization of the United Nations (FAO)/World Health Organization (WHO) Codex Alimentarius guidelines require a minimum period of two years under organic management before annually harvested crops can be certified as organic and three years in the case of perennials (FAO/WHO 2005) [1]. In any case, most regulations generally conform to IBS requirements for conversion.

IBS requirements for conversion

There shall be a period of organic management, *meeting all the requirements* of these standards, before the resulting product may be considered as organic.

The start of the conversion period shall be calculated from the date of application to the certification body (CB) or, alternatively, from the date of the last application of unapproved inputs providing the operator can demonstrate that the full standards requirements have been met for at least the minimum period stated (in sections 4.2 and 5.2 of the IBS). Calculation of the conversion period may not start before the date of the last non-compliant input or practice.

Source: IFOAM (2006).

[1] For more specific references on conversion periods and requirements, see the different standards and regulations in force.

Converting a conventional farm or a piece of uncultivated land into an organic farm should be seen as a process. As such, it will take a certain amount of time, resources and effort to successfully complete the process. Success relates to the recovery of degraded soils and/or biodiversity, the elimination of toxic residues in the soil or water sources from the use of synthetic agrochemicals and, in general, the enhancement of the natural agro-ecological functions of the farm.

How fast (or slow), inexpensive (or costly) and simple (or difficult) the process will be depends on a multiplicity of variables, including human aspects (knowledge, planning and organizational capabilities, motivation, etc.), agro-ecological systems (current environmental systems, climate conditions, availability of biomass [organic matter] on the farm, etc.) and socio-economic variables (availability of financial/technical resources, markets, policy environment, support institutions, etc.). These issues should be taken into consideration when planning to convert to organic production.

2.2.1 First steps and main issues to consider when planning to convert to organic

Organic production and assessing conversion

Organic agriculture is dynamic and, in practice, there are different ways of being successful in organic production. Learning about these different options and their applicability to your specific organic project is important to minimizing conversion costs and other problematic issues. Making the initial decisions and drafting the conversion plan will require a general understanding of organic principles and relevant standards. Such knowledge should also make it possible to evaluate how far (or close) an agrosystem is from being organic.

First steps in understanding organic systems:

1. Acquire general knowledge about organic agriculture regarding technological requirements and standards. It is important to know which inputs and practices are permitted or prohibited. Also, search for information regarding the crops you intend to cultivate. Taking a basic course on organic agriculture is a good idea. (Please see section 1.4.2, in Module 1, for further information on organizations and web sites that provide training and general information on organic agriculture.)

2. Make an analysis of whether practices currently implemented on the farm would be permitted or prohibited by organic farming principles, techniques and standards. What main changes are necessary? What are the opportunities and risks involved?

3. Identify the most challenging issues and their origin (for example, lack of knowledge, labour costs, lack of resources for infrastructure or crop diversification investments, highly contaminated soils, strongly degraded biodiversity).

4. Identify other experiences in your area. Are there other farmers who have undergone the conversion process? Find out how these farmers met their main challenges.

The potential markets

Although organic agriculture can be pursued for on-farm own consumption, this course is designed for organic production sold on the market.

It is assumed that participants have some level of expertise in particular crops adapted to cultural and agro-ecological conditions. In any case, the information in this module should be applicable for anything from cultivating tropical fruit in Latin America to farming olives in the semi-arid regions of North Africa. These are just examples, but the idea is that even if organic agriculture is usually more diversified than conventional agriculture, the range of crops produced will still be limited by factors such as cultural and agro-ecological conditions in the area as well as economic feasibility.

Of course, this is also true for all agricultural businesses, organic or not, but in organic production it is even more important to try to define the possible markets in advance, since the standards (and consequently the practices) that need to be implemented may vary slightly depending on the country or region where the market is located.

Assessing the organic market and organic regulations

In assessing whether the United States (US) is the best market for his coffee, a coffee producer should take into consideration location, quantitative productive output, the quality of coffee produced, the expected price, transportation costs, business partners and other aspects important to export. If the market and product seem to align, then a producer should acquire information about the general organic techniques required to fulfill standards set by the United States National Organic Program (NOP) regulations. Compliance with these regulations will be key to certified organic export to that market.

However, if the US market is not the best place for this producer's coffee, the local market may present an opportunity. In some cases, the local market may not require certification (some countries do not have mandatory certification guidelines for organic products), in which case, focus should be placed on choosing the best organic technologies for the production unit (in accordance with agro-ecological conditions, know-how, for example).

There is yet another possibility; a producer may have no idea which market is best or may want to access more than one international market. In this case, compliance with several different regulations and standards may be required, as well as compliance with non-organic standards such as "good agricultural practices" standards.

First steps regarding organic markets selection and certification issues:

1. Make a list of all the crops (and, if possible, animals) that could potentially be integrated into the organic farming system, according to cultural background and agro-ecologic conditions of the region.
2. Search for market information (and/or advice) regarding potential crops (both for domestic and export markets). Determine which crops seem to provide the best opportunities in the targeted markets.
3. Decide whether you would like to sell the organic products at the local level (in domestic markets) or at the international level (for export). For export markets, if possible, decide which specific countries or regions to target.

4. Ask for advice on the regulations and standards relevant to the selected markets. Specifically, ask about the main differences regarding permitted practices or inputs, and integrate this information into the analysis recommended in the previous subsection ("First steps in understanding organic systems", point 2).

The MaikaalbioRe Cotton Initiative in India: A successful partnership for integral support from conversion to marketing

The initiative in brief

MaikaalbioRe is an initiative for biodynamic (certified) cotton located in the State of Madhya Pradesh, in central India. The cotton is exported to the European market. Over 1,000 farmers cultivate the cotton fields, which are situated in an area where cotton is traditionally grown. The region enjoys deep, dark soils rich in clay, a good water supply and irrigation systems and complementary production of sugarcane, bananas, guava and vegetables.

The initiative was started by Remei AG, a Swiss cotton-yarn trading company, in partnership with MaikaalFibres Ltd., an Indian spinning mill. Remei AG worked on developing the market in Europe and providing links to the textile chain. A project team from the spinning mill worked in the villages with the farmers to convert their lands to organic. An independent company called MaikaalbioRe Ltd. was formed. Farmers are simultaneously suppliers (cotton) to and customers (support services such as training, consulting/crop monitoring, inputs, etc.) of the company.

The main task of MaikaalbioRe is to provide efficient assistance to the farmers of the area. This involves enabling farmers to convert their land to organic and, subsequently, constantly improving organic practice in order to produce good yields. This involves:

> organizing farmers;
> providing training and advice;
> assisting with documentation;
> supplying organic inputs;
> crop monitoring;
> quality management;
> organizing certification and Internal Control System (ICS);
> buying organic cotton at 20 per cent higher price from the farmers;
> identifying organic markets for the food crops.

Success factors:

> shared vision and partnership (communicates confidence to investors);
> integrated supply chain (secures sales channels and constant supply);
> clear profile and controls (creates trust and marketability);
> well-trained extension personnel and farmers (offering the technical support needed);
> cooperation (an innovative approach to expanding the market, proving effective);
> premium (a critical factor especially in conversion);
> consideration for social concerns (builds up confidence and stabilizes cooperation).

Source: Adapted from Weidmann and others (2007).

The support framework

As was elaborated in Module 1, organic agriculture is a multifaceted opportunity for producers all around the world, particularly for small and medium farmers in developing countries. If correctly applied, organic farming methods are sure to have a positive impact on the environment and natural resources. However, for producers, the potential economic benefits of organic farming and trade are neither instant nor guaranteed. Although, most likely, once the organic system is in place and the farm has reached its proper natural balance, soil and water quality will improve, yields may rise, pest problems may decrease, infrastructure, and market access and income may improve (Hine and Pretty 2007; Nichols and Altieri 2009).

Nevertheless, the conversion period can be quite difficult because these benefits are not yet fully accessible. Many farmers, who do not have proper support during the conversion period, may drop out of organic farming despite the opportunities and potential benefits. Therefore, one of the most important things to do when preparing an organic project is to look for local or international support options.

Finding and acquiring support:

1. Research the national organic movement in your country. Contact the organization and inquire whether support from them or from others is available.
2. If no national organic movement has been organized, search the Internet, or talk with fellow producers to find out whether local non-governmental organizations or government offices are working on organic agriculture promotion. Contact these organizations and make sure you are informed about the different support options.
3. Organic farming and trade seminars, fairs, workshops, both at national or international levels, are good places to acquire information and support; try to attend and participate.
4. Always be willing to participate in or aid with the local organic movement. Countries with strong organic movements usually have stronger organic agriculture support policies (UNEP/UNCTAD 2008).

2.2.2 The Conversion Plan

The transition period should be easier if a good conversion plan has been developed. A sound plan should help to prevent the main problems that usually arise, minimize risk, avoid bad investments and inform and encourage all those involved in the process.

The first step in drafting a conversion plan is a careful analysis of the modifications that need to be implemented on the farm, based on the current system or situation, regarding the production objectives and the requirements of the targeted organic market. Since the "ideal" system cannot be established all at once, it is important to implement adaptations in steps or phases. Using a chronogram (see Table 1) to map out activities and expected results could be very helpful.

It should be kept in mind that in order to achieve certification in the shortest period possible, all minimum requirements of an organic system[2] must be implemented as soon as possible. Once these have been implemented, it is of the utmost importance to document all practices on the farm and to keep a record of all expenses, in order to prove that no prohibited inputs or practices have been applied from the particular date of conversion onwards. Farmers may want to contact a CB or other competent authorities to register or gain official recognition as being "in conversion". In some countries, the competent authority provides an "in conversion" registry service at a very low cost or even for free. Registration will most likely require the conversion plan, although there is no specific format for this kind of plan and it is not mandatory to do it[3]. (The transition or conversion plan should not be confused with the management plan, which is mandatory for certification purposes). Table 1 represents an example of a conversion plan.

[2]This would mean eliminating the use of unapproved inputs or practices, according to the relevant standards (see sections 2.2 and 2.2.1 of this module).

[3] In some cases, when there is parallel production, it could be mandatory to have a conversion plan for the different parcels, as this is permitted only for a fixed period of time and solely as a conversion strategy.

Table 1. Conversion plan

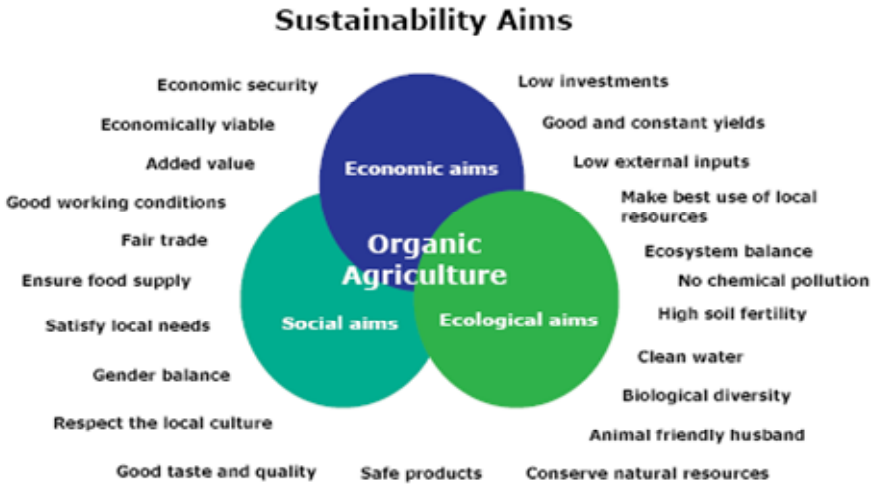
Issues to consider	Necessary adaptations	Phase 1	Phase 2	Phase 3
Soil management	Increase organic matter content Prevent erosion	Stop burning of crop residues Sow on contour lines	Use mulch before the rainy season Sow green manure after harvesting	Sow pastures around the contour lines
Production system				
Plant nutrition				
Plant protection				
Animal husbandry				
Post harvest and processing				
Marketing				

Source: Adapted from Garibay and others (2009).

2.2.3 Technical tools for implementing the conversion plan: General description of organic farming methods and techniques

The first step in the conversion process is changing a conventional farmer's general approach towards agriculture. Conventional farming focuses on achieving maximum yields of a specific crop and is based on a rather simple understanding: crop yields are increased by nutrient inputs and reduced through pests, diseases and weeds. Conversely, organic agriculture is a holistic approach to farming based on principles of sustainability. Similar to conventional agriculture, issues such as sufficient and sustained yields and income, food security, profitability and socio-economic development remain goals of organic farming. However, additional aims are involved in organics, such as enhancing the whole agricultural system, including natural and human resources, so it is conserved and employed to achieve an overall balance. Figure 1 illustrates organic farming's aims for sustainability.

Figure 1: Sustainability aims of organic farming



Source: Eyhorn and others (2004).

Organic farming aims to make the best use of natural and self-regulating forces and ecological principles and processes. Organic farmers can learn much from studying the interactions in natural ecosystems such as forests, as the principles underling a natural ecosystem can be used for designing an organic farming system (Eyhorn and others 2004; Scialabba and Hattam 2002).

The fundamental aspects of this natural systems approach to agriculture can be based on the following general principles and practices.

Recycling nutrients.

Plant and animal residues on the farm constitute some of the most valuable resources in organic agriculture, as they consist of organic matter and nutrient inputs. Organic nutrient management is based on assisting nature in the process of biodegrading and integrating the nutrients of organic matter into the farm's nutrient cycle. This process is aided by composting, mulching, green manure sowing, crop rotation and mixing methods.

Soil conservation and enhancement.

Soil fertility is one of the most important concerns of organic farmers. Soil can be considered a living organism composed of millions of micro-organisms that enhance soil structure and nutrient availability. Taking good care of organic soil includes: prohibiting pesticides or other harmful agrochemicals, using organic fertilizers (both liquid and solid) that incorporate micro-organisms into the soil, and employing mulch and cover crops to prevent soil erosion.

Crop diversification and integrating farm animals.

Nature is diverse. Ecosystem studies show that, more likely than not, the more diverse a natural system the more resilient it is as well. In organic farms, several crops should be integrated into mixed cropping or rotation systems. It is also desirable to integrate animals as part of the system, as they provide one of the most important materials to make compost (manure) and are a source of dairy and meat for farmers. Diversification can be seen as a type of economic "insurance", providing food security and market opportunities.

Biological interrelations: Pest and disease protection.

Enhancing the health and resistance of crops, mostly by ensuring robust organic nutrition and mixing crops to foster beneficial synergies, minimizes plant diseases. Providing hospitable conditions, such as habitat and food that attract beneficial insects and natural enemies (insects, fungi or birds), can help control pests.

At a formal or scientific level, there are several different "schools" of organic farming. According to their origin and founders, different systems have evolved for successfully practicing organic agriculture, although most of them rely on technologies related to the principles mentioned above. Some of the best-known schools of thought regarding organic farming methods are shown in Table 2. Different methods may be better adapted than others to local conditions, thus it is best be well informed of their differences, attributes and shortcomings.

Table 2. Schools of thought regarding organic agriculture

School of thought or method	Founders	Date
Organic	Dr Hans Müller (Switzerland), Sir Albert Howard (Europe), J. I. Rodale (US)	1920s – 1950s
Biodynamic or anthro-posophic	Rudolf Steiner, Ehren-fried Pfeiffer (Europe)	1920s – 1950s
Natural	Mokichi Okada (Japan)	1940s
Permaculture	Bill Mollison, David Holmgren (Australia)	1970s
Bio-intensive	Alan Chadwick, John Jeavons (US)	1970s

Source: Authors' analysis.

While informative, the list of initiatives in Table 2 is not exhaustive, as there are other research, technologies and organic methods employed and developed throughout the world. In fact, an immense amount of local and indigenous farming methods and techniques, which have been successfully developed and applied in developing countries for many centuries, can be considered organic. This includes biodynamic agriculture, integral farming and self-sustaining farming initiatives. However, in the developing world in particular, organic or near-organic practices and knowledge are not well documented nor well disseminated and thus it is difficult to discuss the founders and origins of these types of organic agriculture.

2.2.4 Expectations for the conversion process: Possible challenges and solutions

Converting to organic will most likely bring changes to the agro-ecosystem, the farming household and the organization of work on the farm, among others things. In Module 1, the benefits and generally positive changes were discussed in depth. However, it is also important to be prepared for negative changes that might pose challenges, especially during the conversion period.

Decreases in yields and income

Certainly, not all farms experience decreased yields in converting to organic. In fact, for low-input, small-scale agricultural systems in developing countries, studies have demonstrated that, in most cases, the farm's productivity increases considerably after implementing organic practices (Scialabba and Hattam 2002). However, decreased productivity is a very real possibility. During the conversion process, for example, some intensively managed coffee plantations suffered reductions in output of up to 20 per cent in the first few years. This is especially true for crops that are grown in strict monocultures and are highly dependent on agrochemicals for both nutrition and plant protection. In some cases, it is safe to consider the possibility of a 20–50 per cent decrease in yields (Garibay and others 2009). The main reasons for these reductions include: less availability of nutrients for crops, dependence on rapidly soluble agrochemicals, highly degraded or compacted soils, using high-yield seed varieties that are extremely dependent on pesticides, inexperience in applying organic practices, among others. The lower yields that results from these issues could negatively affect farm income, and farmers need to be prepared for this possibility.

Investment in infrastructure, additional tools and machines

Organic farming is a system that permits a high degree of self-reliance. Small and medium organic farmers who are in control of their own production factors and inputs are usually very successful [4]. In the long run, producing compost on the farm, diversifying crops and closing nutrient cycles on the farm has proven to have a positive impact on farm incomes and reduces expenses related to inputs, food and feed. However, to reach this self-sufficient point and reap the highest benefits from an organic system, some investments in infrastructure and tools may be required during the transition period (for example, buying tools for weed control, building a storehouse for organic fertilizers, purchasing composting machines, reallocating land use for different plants or more livestock).

Increased labour needs

Organic farming transfers expenditures from external inputs (such as agrochemicals or improved seed varieties) to labour, as many inputs that were previously purchased would now be produced on the farm. Moreover, weed control and some pest control will be achieved through mechanical, and not chemical, means. In addition, some of the new activities introduced for diversification (for example, new crops, animal husbandry, etc.) may require additional labour. In countries where labour costs are high, this could mean a considerable increase in the farm's expenses, whereas where labour is relatively cheap expenses may decrease. During the conversion period, when special adaptations have to be done on the farm, these costs could rise even more. Finally, sometimes there is resistance to change from the farm's regular workers and individual productivity may drop.

[4] For a concrete example of successful experiences of this type, see Kilcher and others (2007).

Difficulty in accessing organic markets

Successful organic farmers are usually very much aware of organic markets (whether domestic or abroad) and often become directly involved in the marketing of their products. When selling locally, marketing is a logical, almost necessary step, as organic farmers build bonds that lead to regular costumers and foster confidence in their products, which in some cases may alleviate the need for certification. The export market, however, is highly demanding in terms of quality and reliability (and less reliant on personal bonds). Therefore, competing in well-developed export markets may require more extensive marketing. Most farmers are not used to thinking about marketing, demands of the market (in terms of quality, appearance, etc.) or linking their product directly to the market. Therefore, acquiring knowledge about the greatly specialized market environment for organics (both locally and internationally) and learning how to operate in this market are challenges for farmers new to organics. Additionally, market access during the conversion period is quite limited, and products produced generally do not obtain the price premiums or other organic market advantages during this time.

Possible solutions

Successfully meeting these challenges will depend a great deal on the farmer's creativity, learning from others and receiving good advice. In addition to these suggestions, some general solutions follow:

- Implement partial conversion of the land, when standards permit. This is especially useful when the risk of decreased yields is high, the farmer is not well trained or completely convinced, or agro-ecological conditions are difficult.
- Discuss the expected changes and difficulties as well as the long-term benefits with the family and farm workers as much as possible. Ensure that their needs for maintaining productivity are met.
- Look for governmental or international support for conversion. Some countries do have specific policies and funds to support conversion. Some United Nations environmental funds in cooperation with local offices, such as the Global Environmental Facility[5], have small grants that could be accessed for this purpose.
- Diversify market possibilities. For example, have an on-farm market day, sell products at local outlets (such as supermarkets or specialty stores) and export high-quality products (gourmet markets do not necessarily require organic certification).
- Add value to products that enjoy robust demand or provide good market opportunities. For example, gourmet artisan cheese, coffee liquor or sweets and dehydrated tropical fruits.

[5] www.gefweb.org/.

A small coffee farm's conversion to organic in Costa Rica: Diversification and self-sufficiency strategies

The farm

This Costa Rican coffee farm is comprised of 3 hectares of land, located in the community of San Jeronimo in Perez Zeledon, in the Province of San Jose, about 175 kilometers from San José city. A family of five lives on the farm, including three children under 18 years of age. Before the conversion process began, the house (located on the farm) was in good condition and cooking was done with electricity and commercial gas. There were also a storage room and a small building to make bocashi (fermented organic fertilizer). The farm had always been dedicated to the production of coffee, although annual crops (green beans and coriander) were planted in a small area and approximately 300 citrus trees were dotted among the coffee plants. At the time, 30 per cent of the coffee plantation was fertilized with organic fertilizers made on the farm, with the balance made up by commercial synthetic fertilizers. A forestry component on the farm consisted of approximately 200 trees, used as windbreaks or shade. Besides coffee and a small number of lemons, no other marketable products were produced on the farm.

Changes implemented

The possibility of substituting coffee with any other crop was limited by the steep and stony nature of the land and the family's unwillingness to give up coffee production. Therefore, the basic strategies for augmenting this farm's income were increasing organic coffee production and adding value by processing it on-farm. A very small processing plant was installed. Shade for the coffee plants was improved by planting *Musa paradisíaca, Erythrinapoeppigiana* and other forestry species such as *Terminaliaamazonia*. Furthermore, making the farm completely organic was made a top priority. A gas flame-thrower was introduced for weed control, and adaptations were made to the building where organic fertilizers were produced. Production of bocashi was abandoned as this required some external inputs such as semolina and charcoal. Instead, the family started producing worm compost, which recycles the coffee pulp left over after processing coffee and requires no other additional materials.

In addition to optimizing organic coffee production and processing, diversified production strategies were introduced. Corn, fodder crops and sugar cane (all for feeding small animals) were substituted on a small area located on the oldest part of the coffee plantation. Three small separate buildings for goats, pigs and chickens were built. A biogas bag was installed and fed with the pig dung, which produces enough gas for the family's cooking needs. Effluents from the biogas system are also used to fertilize the coffee plants. The family consumes some of the milk from the goats, while some is transformed into cheese and sold in the surrounding community. Surplus eggs, chicken and pork are also sold in the community. Another small area on the plantation is now used to grow a wide variety of vegetables. These vegetables are fertilized with worm compost, which incorporates coffee pulp and goat dung. A 60 square meter green house was built for year round production and cultivation of crops difficult to grow in the natural environment. A hydraulic ram was also installed in order to bring water up from the river, located on a lower elevation than the farm.

A small coffee farm's conversion to organic in Costa Rica: Diversification and self-sufficiency strategies *(continued)*

Today, in addition to milk, cheese, eggs and meat, the family enjoys an enriched diet composed of a large variety of vegetables and some fruits. Other community members appreciate these vegetables and come to the farm weekly to buy surplus production. Planting precious wood species also enhanced the farm's forestry component and will provide an important source of income for the family in the middle to long term. Today, the farm still predominately focuses on the production of coffee, however, it is now fully organic and pursues a diverse set of alternative activities. Due to these changes, this Costa Rican family now enjoys a variety of food and additional income for other needs.

Source: Kilcher and others (2007).

2.3 Organic Food Processing

Organic food processing constitutes an entirely different world of opportunities and challenges. Adding value to organic products via processing that adheres to organic tenets holds much opportunity in terms of increased income and market access. Furthermore, considerable work has been dedicated to developing high-quality products and low-input technologies based on the ethics and principles of organic agriculture. These developments may relate to the taste, authenticity, degree of processing, concern for specific additives, nutritional composition, degree of convenience, the level of energy use and food miles as well as food safety. The Code of Practice for Organic Food Processing[6] is a basic document for guidance on these issues as they relate to processors and certification bodies. The code lays out the requirements maintained by the organic food sector on a very practical level, including guarantees for food quality and safety of organic products. The document makes a clear distinction between requirements that are compulsory (mandatory regulations) and optional (voluntary practices important for business success).

Organic food processing requirements

The basic regulatory framework for organic food processing held up by governments, such as the European Union (EU), or private standards bodies, such as IFOAM, include some basic tenets:

- food production must comply with basic quality standards;
- no mixing of organic with non-organic products;
- reduce and prevent mistakes in producing organics as much as possible;
- enable transparency through the documentation, traceability and verification of production/processing methods.

Source: Beck and others (2006).

[6] The content of this chapter is based on Beck and others (2006).

Organizational requirements

An organization interested in processing organic products can and should implement some basic organizational tools. These tools can help guarantee that the organic requirements for processing food are fulfilled.

- **Business goals:** Organic principles need to be set out as clear business goals. Elaborating and implementing strategies for achieving these goals will help to establish a high level of credibility with customers.
- **Management and organization:** Management and other organizational structures must facilitate successful planning and implementation of the complex requirements for purchasing, storage, processing and handling of organic foods. Clear responsibilities on all levels and departments are a vital requirement for meeting the strict organic industry standards.
- **Capacity-building:** All staff members involved in the different stages of production must be informed of the requirements for handling organic products. Their knowledge should be continuously refreshed and updated.
- **Process description:** The processing steps and activities should be represented in a flow chart or some other pictorial form. Specific considerations for organic products should be clearly laid out, e.g. for storage, cleaning and treatment of storage areas, labelling, recipe specifications and to prevent mixing of organic and non-organic products.
- **Bookkeeping:** The product chain and processing steps should be clearly documented to guarantee the traceability and organic nature of the product, from when it is first procured to when it leaves processing facilities.

Procurement

A trusting relationship with the suppliers of the raw good used in organic processing is crucial for guaranteeing the organic quality of products.

- Suppliers: Suppliers should be able to prove they comply with the organic standards. Personally knowing the suppliers may help you get a better idea of the quality of the goods procured. These quality aspects are best addressed by establishing a supply agreement.
- Raw materials: Certificates, documentation indicating delivery and clear labelling in addition to the usual specifications and product checks are important in accepting the delivery of raw materials. The existence of chemical residues and genetically modified organisms (GMOs) should be checked, especially with new suppliers.

- **Procurement from third countries:** Certification requirements with respect to third country imports are discussed in Module 3, section 3.3. Particular attention should be given to the quality of the raw materials, their precise origin and manufacturing and/or production conditions.
- **Transport:** Third party carrier companies frequently transport supplies. These parties should be informed about the specific requirements of handling organic products. During transport, organic batches must be clearly separated from non-organic products and should not be contaminated with prohibited substances. Special attention during loading, unloading and transfer of goods and correct documentation during these stages is important to ensuring the organic quality.

Storage

- The integrity and quality of organic raw materials also must be protected when in storage. Organic raw materials should be labelled and easily identified. Organic products can be stored in any facility as long as the following requirements are fulfilled:
- Storage facilities: Facilities should be designed to ensure that organic materials are not contaminated by non-permitted substances. Special attention should be given to cleaning storage areas and pest control. These measures must be documented.
- Identification: Storage areas used for organic products must be clearly marked and documented. This is particularly important when organic and non-organic products are handled in parallel in nearby areas.
- Minimize mixing: Any mixing of organic and non-organic products in the handling of the products must be eliminated. Staff should follow precise instructions and have knowledge of critical aspects of handling. Preventive measure must be documented and inspected.

Processing and/or handling

The integrity and quality of the organic raw material must be protected and maintained during processing. There are no special requirements regarding processing in EU regulations: organic foodstuffs can be produced in any facility, as long as: (i) all ingredients are permitted for use in organics; (ii) organic and non-organic batches are separated; and (iii) and non-permitted substances do not contaminate organic products.

- Recipe composition: Ingredients, additives and processing aids must be described in detail for processing instructions. Any non-organic ingredients as per Annex VI of the EU regulations must be GMO-free.
- Pre-processing: Organic production and non-organic production must be separated by time and place when using the same equipment. Appropriate cleaning measures must be carried out between processing and should be documented.
- Production procedures: All equipment, especially transfer containers and production equipment, must be labelled when organic foodstuffs are being processed (for example, with a specific colour). The production of all individual batches must be documented; traceability of product flow must be assured.
- Mixing minimization: When organic and non-organic foodstuffs are processed with the same equipment, staff members must be precisely informed on how to eliminate or minimize possible mixing. Procedures and their implementation must be documented.

Cleaning and disinfection

Organic food must be free of substances used to clean, disinfect and sanitize food processing facilities. Ecological and health effects of the cleaning process and agents used must be considered. A range of "ecological cleaning agents" is available today and should be used when possible. A list of cleaning and disinfection substances and measures must be documented.

Pest control

Protection from pests and diseases in organic food processing is carried out without chemical treatment or irradiation. Organic pest management requires good manufacturing practices, proper cleaning, sanitation and hygiene. Preventative pest control measures play a prominent role and should be documented. Companies that only produce organic products must have an organic pest control system. Parallel producing facilities are strongly encouraged to introduce pest control systems suitable for organic food throughout processing to reduce the risk of contamination.

2.4 Certifying Organic Production

Organic certification requires undergoing a process that guarantees consumers that production follows the principles and practices of organic farming. In most countries, certification is a service offered by nationally or internationally accredited private certification bodies. In a few countries, such as Denmark, certification is offered at no cost by a governmental body. Farmers and processors attain certification for compliance with specific standards or regulations. The certification process can begin only after the conversion period has been completed and the requirements of the specific standard or regulation demanded by the market have been met. At the request of a farmer or a group of farmers, a CB will send an independent inspector to visit the farm and verify compliance. Based on this information, usually compiled in an inspection report, the CB makes a decision whether the farm is being managed in compliance or not.

In some countries, organic products can be sold locally without mandatory certification, while in others certification is mandatory for the local market. For export markets, no organic product can be traded without certification. The main export markets (EU, Japan, US) have official regulations in place and imports of organic products must comply with them. In addition to the official regulations in the EU, different countries sometimes demand additional certification under specific private standards – both to fulfil organic requirements and to ensure good agricultural practices (GAP).

2.4.1 Current standards and regulations in force in the organic world

Official country regulations on organic agriculture

The official regulatory arena for organic production, processing and marketing is an ever changing one and it has been growing at an explosive speed. Therefore, although the situation changes often, in general, today it could also be said that a vast majority of countries in the world (at least 60 per cent) has already achieved some level of development with regards to drafting, approving and implementing regulations for organic certification.

Since this is a process in development, three categories are commonly used to describe the status of the regulations in each country.

These are:

- **Drafting**. In the process of drafting or finalizing regulations, but not yet officially approved.

- **Not fully implemented**. Drafted and officially approved regulations are in place, but the institutional development is needed to implement the registration, accreditation and control of the certification process.

- **Fully implemented**. Officially approved regulations are fully implemented under the supervision of competent local or regional authorities.

Most European countries, including those that are not in the EU (a total of 38) have official and fully implemented organic regulations, with the exception of Albania and Kosovo, which have drafted regulations but are yet to implement them. Five countries in the Asia and Pacific region, nine in the Americas and one in Africa also have official, fully implemented regulations, along with China, Japan, and the US.

Four countries in the Asia and Pacific region, seven in the Americas and two in Africa have not fully implemented regulations. And at least three more countries from Europe, seven from the Asia and Pacific region, four from the Americas and seven from Africa are currently in the drafting stage. See Annexes 1 and 2 for the lists of countries in each category.

Most of these regulations are probably similar in general terms and, very likely, have been based on a combination of the Codex Alimentarius guidelines, EU regulations, NOP regulations and IBS, which are the four documents most commonly referenced in official regulations. Most of these regulations can be easily located at their respective governmental web pages. Nevertheless, for the purpose of this course we will only relate to those regulations and standards that have a direct impact on international trade, emphasizing the European market.

Although it is important to note that recently other local markets of large countries are growing and are beginning to demand

more imported organic products (e.g. Canada and China), the most important markets for organic products, in terms of international trade, are still the EU, Japan and the US, therefore, the main regulations affecting the international trade of these products are:

- The US Department of Agriculture NOP regulations for production, handling and labelling standards for organic agricultural products. (www.ams.usda.gov/NOP)

- The EU Council Regulation (EC) No. 834/2007 of June 2007 on organic production and labelling of organic products and repealing Regulation (EEC) No. 2092/91 and its detailed rules for implementation. (http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2007:189:0001:0023:EN:PDF)

- The Japanese Japanese Agriculture Standard (JAS) for organic plants and organic processed foods. (www.maff.go.jp/soshiki/syokuhin/hinshitu/e_label/specificJAS-organic.htm)

Although it is not the purpose of this course to study the organic regulations in detail, we do suggest that you take the time to look through them and know their most outstanding differences. There are documents that compare the main technical differences between these importing countries' regulations. However, because of the changing nature of regulations, these kinds of comparisons easily become outdated; therefore, when looking for specific comparisons between regulations, it is always best to ask a CB.

It is important to keep up with both local and international regulations and standards when involved in an organic production and trade project, especially in developing countries, because:

- Organic farmers will always have to comply with the organic regulations of the importing country, unless domestic regulations are recognized as equivalent by the importing country.

- Different regulations may call for different (sometimes contradictory) technologies. In some cases, it takes a considerable amount of time to implement different technologies (a transition period may be involved).

- Unless the products are intended specifically for one market, it is important to apply a technological approach acceptable for certification under any of the main regulations.

Appearance, packaging, advertising

Packaging of organic products should have minimal adverse impacts on the environment and on the products themselves. Consumers of organic products generally appreciate ecologically sound packaging and clear labelling. The quality of organic products is directly related to their production and manufacturing process and it is advantageous to communicate these processors to final consumers. Packaging material can serve to emphasize the credibility and value of organic products, which is important for marketing these products. Thus, offers, invoices, delivery documents, packaging and advertising material must include information about the relevant certification status. Labelling requirements must be observed.

Quality management

Last but not least, every business should implement and manage quality measures, assuring safe and reliable production. Such measures should be established throughout the handling and processing chains. "Organic integrity" is important for garnering the premium prices available for organic processed foods; it is the most important, vital attribute for organic consumers.

Environmental management

Organic foods should be processed and traded in a way that reduces the use of energy and water and avoids pollution and waste as much as possible. All operations in the manufacturing process, storage and transportation should consider such environmental factors. Documenting and communicating sustainability concepts and reports with respect to organic products is a good way of presenting the environmental concerns and approach of a business and can provide a competitive edge when marketing organic products.

International organic standards

There are currently two international standards for organic production and processing: (i) the FAO/WHO Codex Alimentarius guidelines for organic plant production and processing of 2001; and (ii) the IBS and Accreditation Criteria (the IFOAM Norms for Organic Production and Processing). They are not standards that are used for direct certification, but rather serve as a framework for enforced standards. Many countries or certification bodies have used them as a reference for drafting their own standards. The Codex Alimentarius is also used as a reference for judging equivalency between standards.

Private organic standards (EU, US)

Today, the private standards for organic products in the US have lost importance, as all imported organic goods must comply with the US NOP Regulations and only in very rare cases will the importers in the US insist on having products certified by a certain private standard. This is due to the fact that most private standards must be in compliance with US NOP Regulations.

In the EU, this is not the case. In addition to the obligatory EU regulations, organic products often also must be certified under local private organic standards in order to access specific national markets. This system is a result of the perception that local consumers have more trust in organic products when they exhibit private standard labels. The most important private standards for organic agriculture in Europe are Bio Suisse (which is considered essential for the Swiss market), Soil Association (preferred in the British market) and Demeter and Naturland (for the German market). Demeter, however, is the main standard for biodynamic organic products and, therefore, is also essential for biodynamic products throughout the world. Furthermore, fair trade standards are also popular, which are certified under the FairtradeLabelling Organizations International (more information on standards is available at www.fairtradenet.com). Producers must meet Generic Standards and Product (specific) standards. Additionally, fresh food sold in supermarkets in the EU most likely must be certified according to GAP under Global GAP (*www.globalgap.org*) or TESCO Nurture schemes (previously TESCO Nature´s Choice) (www.tesco.com/nurture/). If the product is manufactured and is to be sold for retailers under a specific brand, then the manufacturing company may be asked to obtain a BRC or British Retail Consortium certificate (www.brc.org.uk/standards/default.asp). This certification, which was originally for the United Kingdom, is now being demanded by retailers in Denmark, Norway, Spain, Sweden and Switzerland as well as by some global retailers.

2.4.2 Certifications Challenges

Lack of harmonization and multiplicity of certification requirements

As discussed in the previous section, 60 per cent of all countries in the world have developed or are in the process of developing their own regulations for certifying organic production and processing. Private standards are widely used, including those not directly related to the organic integrity of the product but, rather, to social issues, traceability and/or good agricultural or manufacturing practices. Public and private standards are the basic categories for organics, however, the environment of international certification is riled with a multiplicity of different standards. There is little to no harmonization or equivalency between standards in different markets. The fact is that even if, in general, there are no strong differences among the various standards, differences do exist. Standards can vary to such an extent that they become contradictory or excessively demanding. For example, EU and US NOP regulations with respect to manure restrictions are as follows:

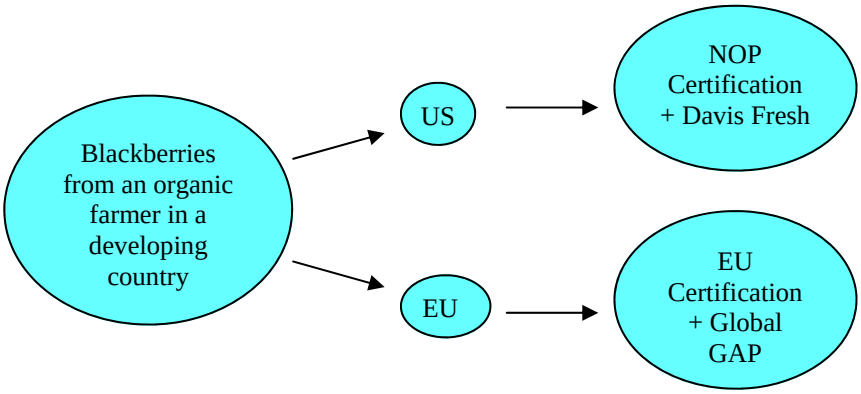
- US NOP: Manure must be composted if applied within 120 days of harvest.
- EU: Preference for manure from organic farms and load limits on a per acre basis are required.

A producer working to access both the EU and US markets, thus, has to comply with both requirements. The use of manure is more limited than for farmers aiming to sell exclusively to either the EU or the US.

Additionally, private organic standards in the EU are usually more stringent than official regulations and vary widely on very specific issues concerning agricultural processing and marketing practices.

The need for multiple certifications can be illustrated by the case of an organic farmer producing blackberries (see Figure 2). These blackberries, produced in a developing country with no regulations and intended to be sold as fresh fruit in EU and US supermarkets, face a multitude of certification requirements.

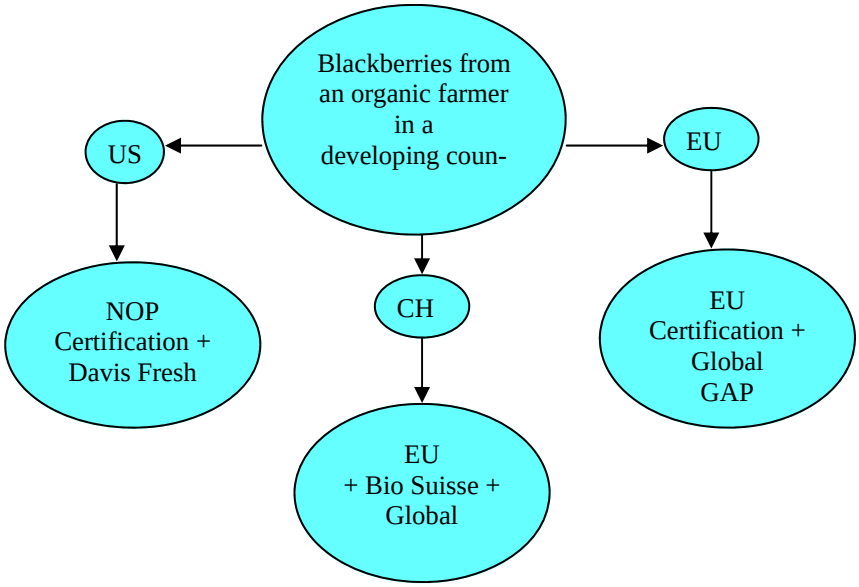
Figure 2: Certification requirements for organic fruit sold in the EU and US



If pursuing export to both markets, this farmer needs four different certifications: NOP and EU (organic certificates), Davis Fresh, (GAP certificate for American supermarkets) and Global GAP (GAP certificate for EU supermarkets).

Furthermore, if the blackberries are bought into Switzerland, Bio Suisse certification would be necessary, bringing the total number to five. Figure3 illustrates this situation.

Figure 3: Certification requirements for an organic fresh fruit sold in the EU, US and Switzerland



The lack of harmonization and recognition for equivalency between the multitude of governmental regulations and private standards limits and burdens producers. This situation has really only emerged in the last 5 to 10 years, but represents one of the main challenges for organic trade growth.

The main problems arising from the multitude of certification requirements are as follows:

- costly (direct and indirect costs related to multiple certification processes);
- skewed (tailored in favour of industry and other developed country stakeholders);
- duplication (lack of recognition among different systems);
- constantly growing demand (certification is becoming more stringent and detailed).

While several certification bodies are aware of this situation and are making some efforts to remedy this situation for their clients, it is important to be aware that many of the above mentioned constraints are beyond the reach of single certification bodies.

To address this problem, an international working group, the International Task Force on Harmonization and Equivalence in Organic Agriculture (ITF), was established in 2002 to address this issue. It is a joint initiative of the FAO, IFOAM and UNCTAD and has produced several studies on the impact of this problem on the growth of the organic sector worldwide as well as proposals for solving this problem. The ITF web page (www.unctad.org/trade_env/itf-organic) outlines this work in detail.

Another way to address the challenge of certification costs for small farmers in developing countries is group certification. Currently, both the EU and the US accept this system, according to some general requirements in each case (which can be found on the respective regulations' web sites)[7]. In general, organized smallholders that wish to be certified under this option need to develop and run an ICS. This type of system is composed of a team of internal inspectors (who could be farmers) directed by the ICS manager, who should be a person with decision making power within the organization. The ICS would be responsible for setting up and documenting a system that guarantees that all farmers will be inspected internally to verify compliance with the relevant regulations or standards. When the CB performs its yearly visit to inspect compliance with the standards and decide whether the group can be certified or not, it does not visit each farmer in the group, but rather it verifies the good management and effective functioning of the ICS. This is done by conducting a thorough revision of all documentation and carrying out an inspection of a sample of the farmers to contrast the information that is found with what is happening at the field.

[7] US: www.ams.usda.gov; EU: http://ec.europa.eu/agriculture/organic/eu-policy/legislation_en.

2.4.3 Which standard or regulation should a producer use?

In answering this question, two additional questions are required:

- How can a producer decide which certification or certifications to apply for?
- When is the right time to make this decision?

The answer to these questions is directly related to the potential markets for the organic products. However, the target market is not usually known in the first stages of conversion, and thus it is difficult to foresee certification requirements.

For example, a farmer just beginning the organic production will typically have to undergo a conversion period for two to three years (depending on the specific crop, the agricultural practices applied on the land before conversion and the actual standard or regulation to be observed). During this time, a farmer generally does not have a clear idea of who may purchase the products. Unfortunately, the first thing a potential trader usually inquires about is what certification the organic production has attained. This leaves it to the farmer to decide on certification before a buyer has been determined, a potential bottleneck for facilitating trade.

Farmers and processors with high investing capacity can certainly choose to acquire at least the obligatory certifications for the main organic markets. Some small and medium farmers or farmers groups in developing countries who have access to international cooperation funding can also choose to do the above.

For other small and medium farmers or producers with less access to support, a less costly way of dealing with this challenge is probably to pursue the following:

- acquire knowledge about the different regulations and standards needed to access the main markets;
- ensure that agricultural practices applied on the farm do not contradict any of the main relevant regulations and standards (although this could restrict organic agricultural practices);
- document the conversion period since this documented proof will be necessary for certification;
- as the conversion period nears its end, the farmer is then in the position to put organic products on the market and this is the best time to choose to certify according to the requirements of a certain market.

2.4.4 The right CB

A CB is a service provider that should be chosen according to considerations of quality and price. Although this may seem evident, farmers often see inspectors and certification bodies as some kind of police force or superior authority that must be feared and not questioned, rather than a service body working for their benefit. Furthermore, traders or international organization representatives simply inform suppliers which CB they trust or prefer, imposing a certain choice on the supplier. This situation is slowly changing as certification bodies in developing countries begin to develop expertise and recognition and more choices emerge. The new EU regulations are expected to have a positive impact on this situation as they incorporate more transparency into the processes of accreditation and surveillance of certification bodies.

In any case, farmers or farmers associations should evaluate a number of things before choosing a CB:

- **The number of standards and regulations a CB is accredited to offer.** The more certifications possible, the better. If a CB is able to offer certification for all major markets, no other CB will be required; however, alliances with other CBs can also remedy the need for multiple certifications.

- **Efficiency and flexibility in meeting farmers' needs** (to the extent that regulations will permit). Simplified procedures, well-trained (and preferably local) inspectors, inspecting once for multiple certifications and a commitment to timelines for each part of the process are important ways that certification bodies can make the process easier for farmers.

- **Prestige and recognition.** Certification is intended to guarantee transparency, impartiality and compliance with standards and regulations. Therefore, if all stakeholders in the value chain do not fully trust a CB, this can then threaten a farmer's capacity to sell products and, in some ways, defeats the purpose of certification.

- **Accessibility and availability.** Between visits from inspectors, questions on standards or regulations may arise and a CB should be readily available to address and answer general questions and concerns.

- **Price.** Although it should not be the most important issue, undoubtedly the price of certification is an important consideration.

2.5 Conclusions

Organic farming requires study and practise in order to be successfully pursued and this module is designed to address that fact. At a scientific level, there are several different "schools" of organic farming that have developed an ample selection of technologies and methods. In addition, an immense quantity of local and indigenous farming methods and techniques, successfully developed and applied in developing countries for many centuries, are indeed organic.

The conversion period is a key factor in attaining success, especially in addressing the adjustment of the agro-ecological system back to a natural balance. According to the IBS, the conversion period is *the time between the start of the organic management and the certification of crops and animal husbandry as organic* (IFOAM 2006).The length of this period varies.

- Before commencing the transition to organic, it is important to have a general understanding of organic agriculture, the aspects that distinguish it from other farming systems and the efforts required in conversion. An interested party should take into consideration:
    - potential markets;
    - standards and regulations in those markets;
    - necessary modifications to the current production
    - system;
    - support possibilities.
- Organic farming requires that farmers abandon an adherence to specialized crop yields and maximization and adopt a holistic–systemic approach to agriculture. The fundamental aspects of this approach are based on natural processes, including:
    - recycling nutrients;
    - soil protection and enhancement;
    - diversification of crops and integration of farm animals;
    - pest and disease protection through biological interrelations.

These practices should be considered when planning an organic system.

- When starting a conversion process it is also important to be prepared for challenges that accompany the changes to the agrosystem. Possible challenges involve:
    - decreased yield and income (especially during conversion);
    - increased need for infrastructure or additional tools and machines;
    - increased labour needs;
    - difficulty acquiring market access.
- Successfully meeting these challenges will depend a great deal on a farmer's creativity, learning from other's experiences and access to good advice. Some general suggestions are:
    - implement partial conversion of the land;
    - ensure that family and farm workers understand the expected changes and difficulties as well as the long-term benefits;
    - look for governmental or international support;
    - diversify market possibilities;
    - pursue value-added activities for some of the farm's products.
- The main aims of organic food production are as follows:
    - produce high-quality food, compliant with the standards;
    - prevent mixing of organic with non-organic products;
    - enable transparency through traceability and verification of production/processing methods.
- Businesses interested in processing or otherwise managing organic foods must incorporate consumers' demand for "low-input" processing. This may relate to the taste, authenticity, degree of processing, concern regarding specific additives, nutritional composition, degree of convenience, level of energy use and food miles as well as food safety. Efficient organizational tools are also important in guaranteeing the proper implementation of all requirements for the processing of organic foods, from management to capacity-building to documentation. A trusting partnership between the suppliers and the customers is also crucial for guaranteeing the organic status of the product. The organic quality of products should also be considered in storage and transport.

- Organic certification is the process by which the organic farmers obtain a certificate guaranteeing consumers that their products have been produced according to the principles and practices of organic farming.

- Although recently other local markets of large countries are growing and are beginning to demand more imported organic products (e.g. Canada and China), the most important markets for organic products, in terms of international trade, are still the EU, Japan and the US. Regulations from these three countries are the most important in terms of certification and for accessing international markets. In the EU, imported organic products often must be certified under local private organic standards in addition to EU regulations.

- The lack of harmonization and equivalency recognition among governmental regulations, and private standards limits and burdens farmers and others involved in the organic supply chain. Notably, the following constitute the main challenges in terms of certification:

    - cost;
    - skew (designed for industrial or developed country producers);
    - duplication;
    - growing in demand (becoming more stringent and detailed).

  These challenges need be taken into consideration when launching an organic venture.

- Additionally, it is important to evaluate the following before choosing a CB:

    - the number of standards and regulations the CB is accredited to offer;
    - efficiency and flexibility of the CB;
    - prestige, recognition and credibility;
    - the CB's availability and accessibility for providing general information and answering questions;
    - price of services.

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Annex 1. Countries with regulations on organic agriculture

Region	Country	Remark	Web site (where available)
European Union (27)	Austria	Fully implemented	http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2007:189:0001:0023:EN:PDF
	Belgium	Fully implemented	As above
	Bulgaria	Fully implemented	As above
	Cyprus	Fully implemented	As above
	Czech Republic	Fully implemented	As above
	Denmark	Fully implemented	As above
	Estonia	Fully implemented	As above
	Finland	Fully implemented	As above
	France	Fully implemented	As above
	Germany	Fully implemented	As above
	Greece	Fully implemented	As above
	Hungary	Fully implemented	As above
	Ireland	Fully implemented	As above
	Italy	Fully implemented	As above
	Latvia	Fully implemented	As above
	Lithuania	Fully implemented	As above
	Luxembourg	Fully implemented	As above
	Malta	Fully implemented	As above
	Poland	Fully implemented	As above
	Portugal	Fully implemented	As above
	Romania	Fully implemented	As above
	Slovak Republic	Fully implemented	As above
	Slovenia	Fully implemented	As above
	Spain	Fully implemented	As above
	Sweden	Fully implemented	As above
	Netherlands	Fully implemented	As above
	United Kingdom	Fully implemented	As above
Others Europe (11)	Albania	Not fully implemented	
	Croatia	Fully implemented	
	Iceland	Fully implemented	www.landbunadarraduneyti.is/log-og-reglugerdir/Reglugerdir/Allar_reglugerdir/nr/79
	Kosovo	Not fully implemented	
	The former Yugoslav Republic of Macedonia	Fully implemented	
	Republic of Moldova	Fully implemented	
	Montenegro	Fully implemented	www.skupstina.cg.yu/skupstinaweb/tekstovi_list.php?s_id_zakoda=110

Note:
** National framework, but no labelling regulation.*
*** National regulation expected to be passed in 2009.*
**** Regulation for national market will come into force in 2009.*

Source: *The World of Organic Agriculture. 2009. Statistics and Emerging Trends 2009. FIBL, Frick; IFOAM, Bonn; ITC, Geneva.*

	Serbia	Fully implemented	
	Switzerland	Fully implemented	www.admin.ch/ch/d/sr/c910_18.html
	Turkey	Fully implemented	
Asia and Pacific region (11)	Azerbaijan	Not fully implemented	
	Australia	Only export regulations	www.affa.gov.au/corporate_docs/publications/word/quarantine/approg/nationalstandard2.doc
	Bhutan	Not fully implemented *	
	China	Fully implemented	
	Georgia	Not fully implemented	
	India	Only export regulations **	National Programme for Organic Production (NPOP) www.apeda.com/organic/index.html
	Israel	Only export regulations***	
	Japan	Fully implemented	JAS Standards for organic plants and organic processed foods www.maff.go.jp/soshiki/syokuhin/hinshitu/e_label/specificJAS-organic.htm
	New Zealand	Only export regulations	New Zealand Food Safety Authority (NZFSA) Official Assurance Programme for Organic Products www.nzfsa.govt.nz/organics/index.htm
	Philippines	Not fully implemented	
	Republic of Korea	Fully implemented	
	Taiwan	Fully implemented	
	Thailand	Fully implemented	Homepage of the National Bureau of Agricultural Commodity and Food Standards www.acfs.go.th/eng/index.php
The Americas and Caribbean (17)	Argentina	Fully implemented	
	Bolivia	Not fully implemented	www.aopeb.org/
	Brazil	Fully implemented	www.planetaorganico.com.br
	Canada	Not fully implemented	
	Chile	Fully implemented	
	Costa Rica	Fully implemented	www.mag.go.cr/doc_d/reg_ley_mag.html
	Colombia	Fully implemented	
	Dominican Republic	Not fully implemented	
	Ecuador	Fully implemented	www.sica.gov.ec/agronegocios/productos%20para%20invertir/organicos/principal.htm
	El Salvador	Not fully implemented	www.elsalvadororganico.com.sv/
	Guatemala	Fully implemented	
	Honduras	Not fully implemented	www.senasa.gob.hn
	Mexico	Not fully implemented	
	Paraguay	Not fully implemented	www.senave.gov.py/index.php?pag=ampliamos&Cod_noticias=102
	Peru	Fully implemented	www.senasa.gob.pe/0/modulos/JER/JER_Interna.aspx?ARE=0&PFL=0&JER=671
	United States	Fully implemented	www.ams.usda.gov/nop/indexIE.htm
Africa (3)	Ethopia	Not fully implemented	
	Ghana	Not fully implemented	
	Tunisia	Fully implemented	

Source: The World of Organic Agriculture. 2009. *Statistics and Emerging Trends 2009*. FIBL, Frick; IFOAM, Bonn; ITC, Geneva.

Annex 2. Countries in the process of drafting regulations

Region	Country	Web site (where available)
Europe (3)	Bosnia and Herzego-vina	
	Russian Federation	
	Ukraine	
Asia and Pacific region (7)	Armenia	
	Hong Kong	
	Indonesia	
	Lebanon	
	Saudi Ara-bia	
	Sri Lanka	
	Viet Nam	
The Americas and Carib-bean (4)	Cuba	
	Nicaragua	
	Saint Lucia	
	Uruguay	
Africa (7)	Cameroon	
	Egypt	
	Kenya	
	Madagascar	
	Morocco	
	South Africa	www.afrisco.net/Html/Product_Stardards.htm
	United Re-public of Tanzania	

Source: The World of Organic Agriculture. 2009. *Statistics and Emerging Trends 2009*. FIBL, Frick; IFOAM, Bonn; ITC, Geneva.