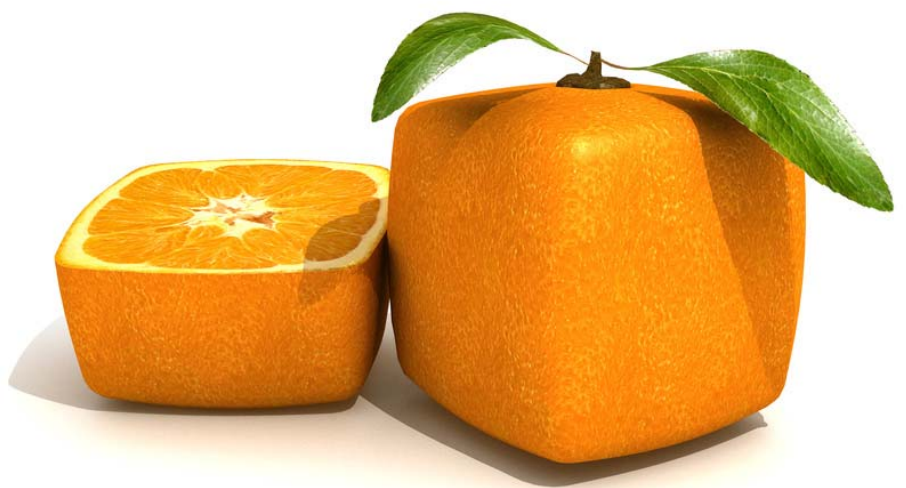


e-Learning Course on Successful Organic Production and Export (SOPE)

Module 1: Why organic agriculture?



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A joint project by the UNEP-UNCTAD Capacity Building Task Force on Trade Environment and Development (UNEP-UNCTAD CBTF)
in partnership with the United Nations Institute for Training and Research (UNITAR)

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Acronyms

CBTF	Capacity Building Task Force on Trade, Environment and Development
EAOPS	East African Organic Products Standard
EPA	Environmental Protection Agency
EPOPA	Export Promotion of Organic Products from Africa
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FiBL	Research Institute of Organic Agriculture
GDP	gross domestic product
GMO	genetically modified organism
HIVOS	Humanist Institute for Development Cooperation
IAASTD	International Assessment of Agricultural Knowledge, Science and Technology for Development
IFOAM	International Federation of Organic Agriculture Movements
ITC	International Trade Centre
ITF	International Task Force on Harmonization and Equivalence in Organic Agriculture
NGO	non-governmental organization
SECO	State Secretariat for Economic Affairs
SIDA	Swedish International Development Cooperation Agency
SIPPO	Swiss Import Promotion Programme
UNCTAD	United Nations Conference on Trade and Development
UNEP	United Nations Environment Programme
UNITAR	United Nations Institute for Training and Research
US	United States

1.1 Introduction to the Course

This course, offered by the UNEP-UNCTAD Capacity Building Task Force on Trade, Environment and Development (CBTF), aims to provide a general overview of organic production and trade: opportunities, challenges, global support options and success stories.

Participants in the course are expected to be representative of different stakeholder groups around the world and, therefore, we have tried to avoid focusing on any specific region or climate. For this reason, the information in these modules has been kept at a rather general level; when specific projects or experiences are mentioned, it should be understood that these are meant to illustrate circumstances, failures and successes; they are not meant to serve as specific recommendations for further action. The applicability and usefulness of the information in the modules is open to your interpretation and subject to your understanding of local conditions.



The course is structured into three modules, which are to be explored one week at a time and cover general information about organic agriculture, examples of specific organic contexts and practices, discussion topics, evaluation questions and a wide list of references for the participants to study and discuss throughout the course. A fourth component is intended for revision and to evaluate what you have learned. Once you have successfully completed all four modules and taken the course evaluation, you will receive a certificate indicating your participation, supported by the UNEP-UNCTAD CBTF and the United Nations Institute for Training and Research (UNITAR).

Module 1 is introductory and contains information on agriculture in general and its importance for economic development as well as a very general analysis of the current advances, shortcomings, opportunities and challenges inherent to mainstream agriculture (or conventional agriculture). It also contains a comprehensive list as to why more and more farmers and consumers are opting to practise and support organic agriculture. The main challenges posed for promoting organic production and trade are also laid out. Finally, Module 1 describes the main organizations and global initiatives currently involved in supporting farmers, traders and other organic stakeholder groups facing these challenges.

The learning targets of Module 1

- Acquire a general knowledge of the current state of agriculture

worldwide, the benefits and challenges implicit in organic agriculture and the role organics play in the present world context of agricultural production.

- Acquire or refresh knowledge regarding the main benefits and challenges involved in organic production.
- Be able to identify the main international organizations working on organics and gain knowledge about the initiatives and projects they undertake to support production and trade of organic products.

Module 2 delves into organic agriculture production issues. It elaborates step-by-step information on "setting up an organic farm", either by converting from chemical-based production to organic, or by converting uncultivated land into an organic farm. The themes covered by this module include: the conversion process, success factors in organic production and certification issues.

The learning targets of Module 2

- Understand basic organic production techniques.
- Learn to design and implement a conversion plan for starting an organic venture.
- Identify risks and acquire key tips for ensuring success.
- Comprehend the certification issues necessary for compliance with market requirements.

Module 3 focuses on organic trade. It contains recent information regarding major markets, including specific examples from the developing and developed world as well as an extensive reference list for further reading. This module provides an overview of rules and regulations governing organic trade, focusing on import into the European Union (EU) under a recently instituted set of regulations. It describes procedures for setting up organic marketing initiatives and elaborates the main challenges and success factors present in trade in organics. Finally, the module introduces marketing techniques tailor-made for collective marketing initiatives and pro-poor growth.

The learning targets of Module 3

- Comprehend the different roles, perspectives and challenges faced by stakeholders throughout the supply chain.
- Appreciate recent development and trends in international and domestic organic markets, including developing country markets.
- Acquire knowledge regarding the trade-relevant aspects of organic regulations, including the new EU requirements, Global GAP, TESCO and other relevant marks.
- Comprehend how to successfully start up an organic market initiative and employ relevant marketing techniques.

1.2 Agriculture: A Key Sector

1.2.1 The role of agriculture in economy

Agriculture, in general, has played a key role in the economic and cultural development of all societies. It first appeared over 5,000 years ago, when humans discovered the art of cultivating land for food, and irrevocably changed society by ending the need to



constantly hunt and move in search of wild animals, vegetables and fruit. Agriculture has undergone major changes since this time and, despite revolutionary transformations, it continues to play a fundamental role in economic, environmental and social development, both in developing and developed countries.

Today, the multifunctionality of agriculture is widely recognized by the main intergovernmental organizations, most governments and a large number of stakeholders involved in agricultural development. The International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD) [1] defines agriculture as a range of linked production systems; a dynamic social-ecological system based on the maintenance, utilization and regeneration of ecosystem services, managed by people. Agriculture is a multifunctional, multi-output activity; it not only produces commodities (food, feed, fibres, agrofuels, medicinal products and ornamentals), but also other outputs as well such as environmental services, landscape amenities and the enhancement of cultural heritage.

As mentioned above, agriculture is important in social, environmental and economic terms. Agriculture provides a livelihood for 40 per cent of the world population. The poor are particularly reliant on agriculture, especially in developing countries, where 70 per cent of the poor live in rural areas and are directly or indirectly dependent on agriculture. Furthermore, agriculture has a major influence on essential ecosystem services such as water supply and purification, pollination, pest and disease control, and the uptake and release of carbon (IAASTD 2009). On the economic front, in most developing countries' economies, the vast majority of export earnings come from basic agricultural products. Often, one or two primary commodities make up the bulk of exports. On average, in these countries, agriculture accounts for 40 per cent of gross domestic product (GDP), and employs nearly 80 per cent of the labour force (Barbier 2009).

[1] *The IAASTD is an initiative launched in 2002 by the World Bank and the FAO. Its objective was to assess the impacts of past, present and future agricultural knowledge, science and technology on the reduction of hunger and poverty, the improvement of rural livelihoods and human health, and equitable, socially, environmentally and economically sustainable development.*

Currently, however, the state of agriculture is confronted by multiple world crises, in terms of the world economy, access to food, energy needs and climate change. In this context, one of the main roles of agriculture, at a very basic level, is to meet the challenge of providing adequate output to assure global food security. If the poorest portion of the world's population does not have access to adequate food and nutrition, the capacity and possibility to learn, work and earn a decent living are hampered. This population is also more susceptible to disease. Overall, prospects for economic development are dim when there is not enough food on the table, and agriculture is even more important in economies that are reliant on agricultural exports. Thus, with a majority of the developing world's population living in rural areas, agriculture remains a key livelihood activity, providing a way for people to feed themselves, either by producing their own food or by providing a source of employment and income and, thereby, access to food supplies (Reimenschneider 2003). Agriculture remains a key source of security for many people, despite the crises prevalent on a global scale.

Another key role played by agriculture in this context is, potentially, to contribute to poverty alleviation as well as improve personal livelihoods and enhance, conserve and sustainably manage natural resources such as water^[2], biodiversity and soils. Currently, three billion people live on less than US\$ 2 per day, 854 million are undernourished, 1.3 billion live without access to clean water and 2 billion are in need of sustainable energy sources (IAASTD 2009). These issues are intrinsically linked and have the potential to develop into vicious or beneficial cycles with respect to poverty, environment and social development. As will be shown, a new kind of agricultural development can, and must, play a significant role in addressing these challenges and the cycles they play into.

Finally, trade in agricultural products is an economic activity that links agricultural production and the global economy, and constitutes a major source of GDP for many countries. However, current trends in agricultural trade are affected by instability in financial markets, high food price inflation and volatility, weakening global economic growth and food security concerns (OECD/FAO 2008). These uncertainties have always been present in agricultural commodity markets but currently they are even more prevalent, as heightened by multiple global crises.

All of these crises do, however, present opportunities for improvement and change. Some of these opportunities can be linked to the ongoing negotiations to reduce agricultural trade barriers that, if concluded successfully, have the potential to reduce global poverty by as much as 8 per cent, according to Barbier (2009). Opportunities are also linked to the development or strengthening of market and policy instruments that contribute to the recognition and support of agricultural products with

[2] Irrigation for agricultural purposes utilizes from about 70 to 90 per cent of the world's fresh water supplies (Barbier 2009).

Vicious cycles of poverty and environmental degradation: Haiti



Haiti is the poorest country in the Western Hemisphere, according to the CIA World Factbook, and suffers from one of the most highly degraded environments in the region. Over 60% of its GDP comes as aid from the US and other countries and 65% of its people survive on less than \$1 a day. Originally, almost all of the country was covered by forest, but now less than 3% of that forest cover remains. Furthermore, from 1950 to 1990, the amount of arable land fell by more than two-fifths due to soil erosion, a consequence of deforestation.

Deforestation has diminished the amount of evaporation back to the atmosphere over Haiti, and total rainfall in many locations has fallen by as much as 40%, reducing stream flow and irrigation capacity. For example, the Avezac Irrigation System supports only half of the initially planned 9,500 acres (3,845 hectares). When the rains do come, hillsides no longer effectively retain or filter water and thus, even moderate rains can produce devastating floods. Moreover, due to such flooding, sediment has clogged the Peligre Dam and Haiti has lost half of its hydroelectric power potential as a result. Groundwater and streams are laden with sediment and pollution, which has degraded estuary and coastal ecosystems. Therefore, nearly 90% of Haitian children are chronically infected with intestinal parasites acquired from the water they drink.

Haiti is a stark example of a “vicious circle” of extreme poverty and environmental degradation. Much of Haiti’s poverty and human suffering derives from the loss of its forests, and extreme poverty itself is one of the root causes of deforestation and a powerful barrier to sustainable forest management in Haiti. The alleviation of poverty clearly must be a central strategy to restore Haiti’s forest and biodiversity, and the restoration of natural ecosystems can contribute significantly to the fight to alleviate poverty.

Source: *European Communities (2008).*

reduced environmental negative externalities or with positive externalities (such as biodiversity and ecosystem services) (IAASTD 2009). As changes in trade patterns, terms of trade, prices, and trade reforms affect national income, wealth and its distribution, and have a direct impact on the ability to access food and to improve livelihoods, a major concern is how developing

countries can face and even benefit from the new, emerging framework of agricultural trade (Reimenschneider 2003). Organic agriculture is one way to face these challenges, profit from the potential for change and instigate a better future in economic, social and environmental terms.

1.2.2 Mainstream agriculture: Advances, shortcomings and challenges

Mainstream agriculture today is referred to as “industrialized”, “commercial”, “modern” or “conventional”. In any case, these terms mainly reflect the worldwide implementation of the so-called Green Revolution of the 1960s and 1970s that consisted of a package of technological advances, including: monocropping, improved seed varieties (high yield), intensive soil tillage (usually mechanized), better irrigation, herbicides, pesticides and intensive chemical fertilization. These technologies were highly successful at meeting the primary objectives of the Green Revolution: increase crop yields and augment aggregate food supplies. Crop yields increased tremendously, especially in the temperate zones of Europe and North America. Some developing countries also enjoyed successes due to the Green Revolution, though the yield increase usually lagged behind the developed world. In Asia, where the Green Revolution package was widely adopted, food production increased substantially in the 1960s and 1970s. India, which was once subject to severe famines, managed to become self-sufficient in cereal production. Worldwide, increases in productivity have contributed to a net increase in global food availability per person: from 2,360 kcal in the 1960s to 2,803 kcal per person per day in the 1990s, and achieved at a time when world population significantly increased (Eyhorn and others 2004, IAASTD 2009).

Despite the Green Revolution's success at increasing aggregate food supply, implementing the system as a development approach has not necessarily translated into benefits for the lower strata of the rural poor, either in terms of greater food security or greater economic opportunity and well-being. The success of the Green Revolution in the developing world was unevenly spread; while the technology brought considerable yield increases on fertile river plains or irrigated land, it often failed on marginal, weak soils. Additionally, as the most fertile lands usually belong to wealthier farmers, marginal, impoverished farmers did not benefit much from the new technologies of the Green Revolution (Eyhorn and others 2004).

Negative effects of the Green Revolution

After some decades, it became evident that conventional farming has many negative impacts, both on the environment and on human health. These impacts include:

Soil: Vast areas of once fertile lands were subject to soil erosion, salinization or a general loss of soil fertility, this degradation could be in large part due to the use and overuse of chemical agro-inputs.

Water: The intense use of agrochemicals and excessive irrigation lead to pollutants trickling into lakes, streams and other fresh water sources, and the overexploitation of water resources.

Biodiversity: Many wild and cultivated plant and animal species have become extinct or depleted in number as chemicals are spread to natural habitats surrounding conventional farms and farmers focus exclusively on producing one sole crop.

Human health: Residues of harmful pesticides in food or drinking water endanger both farm workers' and consumers' health; further health risks arise from antibiotics in meat, BSE infection (mad cow disease) and genetically modified organisms (GMOs).

Energy: The excessive use of external inputs instigates intense consumption of energy from non-renewable resources and greenhouse emissions.

Source: Eyhorn and others (2004), IAASTD (2009).

Compounding these failures is the fact that inputs are quite expensive, especially considering that labour is relatively cheap and abundant in many developing countries^[3]. Expenses for agrochemicals can make up a large proportion of production costs for farmers who pursue conventional agriculture. Frequently, these inputs are purchased on loans, which are to be paid back when the harvest is sold. If yields are lower than expected (e.g. because soil fertility decreased) or crops fail entirely, farmers still have to cover the costs of the agrochemicals. Moreover, in the past, prices for agricultural products have tended to decrease while prices for inputs increased, making it difficult for many farmers to cover costs and earn a sufficient income using conventional agricultural techniques (Eyhorn and others 2004). Thus, indebtedness is a widespread problem among farmers, and many are plunging further and further into the "debt trap".

[3] *This is notable because labour needs are often higher in organic production.*

In addition to the negative effects of the Green Revolution model, modern mainstream farmers face emerging issues that make for

an uncertain future. In the current context, the main issues stand as follows:

- an upward trend in real commodity prices (affecting net commodity importers):
 - market pressure on commodities due to demand for biofuels;
 - higher demand for food from Asia (especially in China and India) due to emerging changes in consumption pattern (OECD/FAO 2008);
- public expenditures and external assistance to agricultural production is decreasing in the very countries where hunger is most widespread;
- trade regimes are often not favourable for countries at an earlier stage of industrialization or with an agriculture sector comprised mainly of small-scale farmers (Barbier 2009, IAASTD 2009);
- new environmental concerns (climate change and extreme weather conditions);
- water management issues (growing scarcity, floods, droughts, landslides) (European Communities 2008);
- the spread of transgenic production (GMOs and the intensified use of the pesticides linked to some GMOs) (Benbrook 2004).

These issues all have widespread consequences for conventional farms and trade in conventional agricultural products. As will be clear further on, the pursuit of organic agriculture can help to mitigate some of these issues, and make for a more certain future in the field of agriculture.

1.3 Organic agriculture: A viable alternative

1.3.1 Definition of organic agriculture

Organic farming is a form of agriculture that relies on non-chemical inputs and ecologically sustainable techniques (such as crop rotation, green manure, compost and biological pest control) to maintain soil productivity and control pests. The defining factors of organic agriculture are its holistic approach to farming systems and its exclusion or strictly limited use of synthetic fertilizers and synthetic pesticides, plant growth regulators, livestock feed additives and GMOs.



Organic agricultural methods are internationally regulated and legally enforced by many nations, based in large part on the

standards set by IFOAM, an international umbrella organization for organic organizations established in 1972, and the Codex Alimentarius Commission, established in 1963 by the Food and Agriculture Organization of the United Nations (FAO) and the World Health Organization.

Principles of organic agriculture [4]

The defining principles of organic agriculture, as set out below, are in constant development, and are open to adaptation and interpretation according to local conditions. However, they instruct the implementation of organic techniques, the rules that govern organic practices and the standards and certification that provide recognition for organic products.

The overarching goal of organic farming, according to the International Federation of Organic Agriculture Movements (IFOAM):

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

Source: Eyhorn and others (2004).

- **Principle of Health:** Organic agriculture should sustain and enhance the health of soils, plants, animals, humans and ecosystems in a way that takes into account the entirety and interrelationships of these systems; it is a holistic approach to farming. The health of individuals and communities cannot be separated from the health of ecosystems – healthy soils produce healthy crops that foster the health of animals and people. Immunity, resilience and regeneration are key characteristics of health and thus of organic systems. Organic agriculture is intended to produce high-quality, nutritious food that contributes to preventive healthcare and well-being.
- **Principle of Ecology:** Organic agriculture should be based on living ecological systems and cycles, working with them, emulating them and helping to sustain them. Pursuing organic agriculture within living ecological systems means that production is to be based on ecological processes already present in a given ecosystem, and the recycling of elements with the system. Organic farming, pastoral and wild harvest systems should conform to and emulate the cycles and ecological balances found in nature. Organic management

[4] *Adopted by the IFOAM General Assembly, September 2005, Adelaide, Australia.*

must be adapted to local conditions, ecology, culture and scale. Inputs should be managed carefully and reduced, if possible, by reuse, recycling and the efficient use of materials and energy.

- **Principle of Fairness:** Organic agriculture aims to build on relationships that ensure fairness with regard to the common environment as well as livelihood opportunities. Fairness is meant to apply to all levels and to all parties – farmers, workers, processors, distributors, traders and consumers. Organic agriculture should aim to provide all those involved with a good quality of life, contribute to food sovereignty and the reduction of poverty, when possible. Producing a sufficient supply of quality food and other products is also vital. Fairness requires systems of production, distribution and trade that are accessible and equitable for all and incorporate the real environmental and social costs involved with production into the price.
- **Principle of Care:** Organic agriculture should be managed in a precautionary and responsible manner to protect the health and well-being of current and future generations and the environment. Organic agriculture is a living and dynamic system that responds to internal and external demands and conditions. Organic farmers can enhance efficiency and increase productivity, but this should not be at the risk of jeopardizing health and well-being. Given the incomplete understanding of ecosystems and agriculture, care must be taken in employing all farming techniques, and especially with new technologies. Scientific knowledge alone is not sufficient. Practical experience, accumulated wisdom and traditional and indigenous knowledge offer solutions, tested by time.

1.3.2 The benefits of organic agriculture

Organic agriculture offers tremendous opportunities for developing countries and it can contribute substantially to sustainable development. Organic agriculture is considered a viable option for sustainable agriculture in developing countries because it offers a unique



combination of low external input technologies, environmental conservation, food security enhancement, climate change mitigation and adaptation capacities, and social, economic and health benefits. Indeed, the agro-ecological and socio-economic benefits of organic agriculture have been widely recognized. The following is an extensive, although not exhaustive, list of these benefits (Zundel and Kilcher 2007).

Food security

- **More sustainable and higher yields per hectare** can be achieved in employing organic agriculture techniques, especially in the developing world. Crop yields increased, on average, by 128 per cent in East




Africa after conversion to organic. Although it depends on the environment and initial soil quality (yield increases are higher when cultivation was previously on poorly managed and marginal soils), organic production can attain the same yields as conventional agriculture, even in high-yield environments (Fließbach and others 2009). Biomass availability and the integration of livestock into the agrosystem are also important variables in increasing output. In the arid and semi-arid tropics, considerable yield increases in staple food crops (sorghum, millet, maize, rice) and fruits (mango, citrus) in the context of organic agriculture projects are observed in Asian and African countries. Key to these achievements have been soil fertility management practices such as integrated stall-fed livestock, effective composting systems, introduction of green manure, cover crops and legumes in the rotation, use of bone meal and rock phosphate against phosphorous deficits, localized placement of ash and manure and soil conservation methods.

- **Improved food security and consistent agriculture production** follow as important benefits of organic agriculture. Increases in yields per hectare and income (as shown in the economic benefits section) result in an increased availability of food and more people to purchase food. Levels of food per farm and food per person increase, enhancing food security. In fact, Hine and Pretty's (2008) study "Organic Agriculture and Food Security in Africa" showed that access to food increased in 11 of 13 case studies related to food production that were examined. Organic farms also produce more efficiently, with more sustainable and stable yields over the long run than conventional agriculture. Improved soil fertility is guaranteed over the long term because of the absence of chemical inputs (Fließbach and Mäder 2005). Soils on organic farms are also more resistant to water stress, which can ensure crops survive despite recurrent droughts. The diversity of crops usually found on organic farms provides insurance in case of natural or financial threats – if one crop fails due to pests or suffers from a plunge in asking price

on the world market, other crops can serve as a fall-back option for accessing food or cash.

- At the international level, it is difficult to measure the contribution of organic agriculture to international food security. No figures are available and it might be rather speculative to make an estimate, considering that the organic sector barely caters to 2 per cent of world markets. However, the high potential of organic agriculture in production and market development certainly is a positive driving force towards improved international food security. At the macro level, it is clear that a more locally oriented and sustainable agricultural system can improve national food self-sufficiency.

Economic benefits

- **The market for organic agriculture products is growing and profitable.** Since 1990, the market for organic products has grown at a rapid pace, with sales of organic food and drink reaching US\$ 46 billion in 2007. The market for organic agriculture has experienced annual growth rates from 10 to 20 per cent, amounting, on average, to a growth of US\$ 5 billion a year (Willer and Kilcher 2009). It is possible that export opportunities in organics can improve terms of trade (export–import balances) for developing countries in the international market.
 
- One of the most important benefits provided by certified organic products is related to the ability of producers to access **lucrative local and international markets**. Organic products are mostly destined for the United States and the EU, with 95 per cent of all organic products sold to these markets. Organics constitute between 1.5 and 2.5 per cent of total food sales in North America and the EU, and up to 5 per cent in Denmark and Switzerland (Willer and Yosseffi 2006). Integrating farmers into the supply chains (networks of production, export and purchasing) facilitates access to these markets and can increase profits, enhance predictability (ensuring buyers for agricultural products) and generate higher incomes.
- **Organic products are sold at a high price premium.** Because consumers increasingly want to know that their purchases are produced in an environmentally and socially responsible manner, they are willing to pay more for products that assure these conditions are met. The UNEP-UNCTAD CBTF studies have documented that organic

products garner up to a 300 per cent higher price than conventionally produced goods (Naturinda and others 2008). These higher prices translate into profits for farmers and other stakeholders in the organic value chain.

- The manner in which organic agriculture is pursued also tends to open up **employment opportunities**, all along the supply chain. Organic agriculture is more labour intensive than conventional agriculture because maintaining soil fertility without using fertilizers requires labour rather than chemical inputs in applying compost and manure and anti-erosion landscaping. The money that farms save by not purchasing expensive agro-inputs allows them to hire more workers. Also, non-farm labour opportunities can emerge, as added-value activities such as processing and packaging create jobs. A University of Cambridge study found that employment opportunities could grow from 10 to 30 per cent as a result of conversion (University of Cambridge 2002) and, in 2007, 178,000 jobs in Mexico were created after farmers converted to organic (UNEP 2009).

Environmental benefits

- Organic agriculture techniques **reduce soil erosion and improve soil fertility** by applying organic compost and biofertilizers, mulching, using cover crops, agroforestry, crop rotation and multiple cropping. These techniques increase the density and richness of soil and contribute to biological activity, which is instrumental for maintaining soil fertility. Employing organic techniques has been shown to reduce erosion due to wind, water and overgrazing by ten million hectares per year (Pimentel and others 1995).
- **Organic farming is more resilient with respect to the effects of climate change.** Organic agriculture leaves farmers better prepared for changes in precipitation patterns as organic soils are more adapted to drought and desertification due to increased water and nutrient retention capacity of the soil. Water moisture content was found to be significantly higher in organic soils (Reganold and others 1987). In fact, irrigation on some Indian farms dropped from 30 to 50 per cent after converting to organic (Proctor and Cole 2002).



- Prohibiting the use of chemical inputs also **reduces agriculture's contribution to global warming**[5], utilizing fewer non-renewable external inputs (as fertilizers and pesticides use fossil fuels in their production and emit greenhouse gases in their use) results in less energy use. Organic agriculture consumes from 20 to 56 per cent less energy per unit of crop dry matter produced (Mäder and others 2002); and CO₂ emissions per hectare of organic agriculture are from 48 to 68 per cent lower than conventional agriculture (Scialabba and Hattam 2002). Organic agriculture has also been found to sequester three to eight more tonnes of carbon per hectare than conventional methods (Rundgren 2008).
- The lack of chemical inputs **enhances agriculture's contribution to ecosystem services and prevents environmental damage**. Pesticides and fertilizers can be damaging to the habitats surrounding farms thus by preventing their application, organic agriculture enhances biodiversity and results in more diverse landscapes and wildlife. Furthermore, because organic agriculture relies on cultivating more than one species of plant (instead of monocropping), it is, itself, a more biodiverse agrosystem. In addition, chemicals do not trickle into streams, lakes and groundwater, safeguarding water supplies. As a study conducted by the US Environmental Protection Agency (EPA) concluded, agriculture was the greatest source for pollution in lakes and rivers (US EPA 1994).
- Organic agriculture **favours natural synergies that are ecologically and economically sustainable**. Relying on on-farm resources is important and techniques for recycling farm-owned nutrients and organic carbon are among the most important assets of organic agriculture. This is also important for small-scale farmers in developing countries faced with lack of capital and low product prices. In many Asian countries, such as the Republic of Korea and Viet Nam, integrating fish in rice paddies provides benefits as the fish selectively feed on pests and animal droppings fertilize rice, and similar effects are achieved with agroforestry. These synergies are the result of a holistic agriculture system, dependent on the interrelations between a diverse set of crops, animals and other agro-inputs that make the systems more resilient and productive over the long term.

[5] *About 13 per cent of global greenhouse gas emissions come from agriculture (WRI 2007).*

Comparative research trials on organics

Despite numerous reports and much research demonstrating the benefits of organic agriculture, critics



maintain that, comparatively, only conventional agriculture will be able to meet the world's food needs. Comparative research trials is one way to test this critique. One notable research trial is being led by the Research Institute of Organic Farming (FiBL). FiBL has established long-term comparisons of farming systems in various agro-ecological and agro-economic contexts to study the different parameters that are essential for sustainable development. To date, trials are being conducted in three sites:

- a sub-humid area in Kenya where farming is subsistence oriented;
- a semi-arid area in India where cotton is produced for the export market;
- a humid area in Bolivia where perennial fruits and cacao are produced for the domestic and export markets.

The key elements in these comparisons are precise long-term field trials, complemented by farm surveys and short-term trials. The trials are expected to:

- provide real proof of the benefits and drawbacks of organic agriculture,
- identify challenges for organic agriculture that can then be addressed systematically;
- provide physical reference points for stakeholders in agricultural research and development and thus support decision making and agricultural policy dialogue at different levels.

After a few cropping seasons in India and Kenya, and recently planted cacao in Bolivia, there are still no results available to publish. Even so, these trials attract a large number of farmers, scientists, advisors and authorities to these sites each year.

Social benefits

- Some of the requirements of organic agriculture (e.g. certification and quality assurance) **induce cooperation between community members and enhance social capital** (Hine and Pretty 2008). This can affect farmers' motivation, instigate the sharing of experiences related to agricultural production or produce a variety of community innovations. Developing organic farmers' organizations,

standards, certification systems, extension services, education, research and food supply value chains brings producers together in a new manner. The creation of farmer-to-farmer enterprises and farmer-owned trading companies, as well as non-farm enterprises such as agro-ecotourism, is encouraged by organic principles.

- By building on local knowledge and using local services to build skills and cooperation, **the approaches applied in organic agriculture can revitalize traditional customs and local values.** With organic agriculture, producers regain control of the production cycle and increase their self-confidence, especially if locally adapted agriculture techniques contribute to organic production, as they often do. Furthermore, employment opportunities and higher incomes encourage farmers to remain in agriculture and to invest in rural communities. Such communities are in a stronger position to demand and assert their rights and to maintain or improve their economic position.

Health

- The prohibition of chemical agro-inputs is better for **the health of farmers, the health of local populations and the health of consumers.** Evidence increasingly demonstrates that pesticides are linked to significant health problems and prohibiting their use is related to the improved health of those encountering agricultural products. The run-off of chemicals from fertilizers and pesticides into streams and other waters and the drift of chemicals after aerial application can leave residues in the air, in water sources and on produce (Vapnek and others 2007). Chemical residues have proven to be harmful; the International Labour Organization and FAO estimate that from two to five million people are victims of pesticide poisoning each year, 40,000 of which prove to be fatal (FAO 2009).
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- Connecting organic producers to markets means **consumers have access to high-quality food.** Organic agriculture provides healthy, safe and better quality products (taste, storage properties, no hormones and antibiotics in animal products, less pesticide residues in food). At the household and community levels, organic rural and rural-urban markets and networks contribute to improving food quantity, quality and diversified food availability.

Critical questions about organic farming

Although much research confirms the benefits of sustainable agriculture for farmers and the environment in developing countries, critics question whether organic agriculture can perform sufficiently to meet the world's needs in terms of agricultural production. Throughout the module, most of these questions are addressed, although sometimes only incomplete or partial answers can be provided. Following are some of the most critical questions posed regarding organic farming:

- **Why hasn't organic agriculture caught on worldwide?** Conventional agriculture persists as the mainstream approach to agricultural production, not organic.
- **Can organic agriculture feed the world?** The Green Revolution was able to augment productivity per hectare to such an extent as to feed a population that has grown exponentially in the last century.
- **Do the benefits of organic agriculture reach the poorest of the poor?** Organic agriculture requires access to know-how and specific inputs as well as market access. These key elements for pursuing organic agriculture can be difficult for the poorest to attain.
- **How can producers, especially small-scale producers from developing countries, harness the power of the organic label?** Global standards and certification bodies are developed in "Brussels, Tokyo and Washington" without the participation of the developing world, producing organic agriculture standards that are not adapted to local conditions. Inspection, certification and accreditation are becoming increasingly complex and thus a greater hurdle for small farmers in developing countries.

Note: We encourage you to think about these fundamental questions as you explore the module.

Conclusions

Clearly, organic agriculture offers many benefits for the farmers, processors and traders involved, their wider community and their surrounding environment. However, there are still critical questions and challenges faced by the sector and which are discussed further in the following sections.

1.4 Organic production and trade: Challenges and opportunities

1.4.1 Why does conventional agriculture persist as the mainstream approach to agricultural production?

Despite evidence showing that organic agriculture is a great opportunity for developing countries and can contribute substantially to sustainable development, conventional agriculture remains the mainstream approach to producing food and other agricultural products. Even in countries where organics have enjoyed high public and private



support, such as in Denmark, Germany or Switzerland, organic production amounts to just 5.5, 5.1 and 11 per cent, respectively, of the total agricultural production (Willer and Kilcher 2009).

There is, of course, a multiplicity of factors that affect the growth and development of organic production. Organic agriculture is a new paradigm (although in many ways it builds off techniques proven with practice and time). Furthermore, it contradicts and prohibits principles and techniques important to current mainstream agricultural production and marketing systems, and these systems have millions of dedicated farmers, millions of dollars of investment, research centres and public and private support dedicated to pursuing agricultural production in this manner. Beyond the direct conflicts between the organic and conventional approaches to agriculture (in regards to chemical inputs and holistic agrosystems, for example), it is the technical, financial, research and marketing challenges that limit or constrain organic agriculture from truly reaching its full potential. A general overview of the main issues constituting those challenges, limitations and constraints is presented below.

Standards, regulations and certification

Certification of organic production involves verifying that producers employ organic techniques and follow organic principles (by not using pesticides or fertilizers, for example). Potentially, any party (business, farm, processor, etc.) directly involved in food production can be certified. The process varies from country to country and standard to standard, but some general aspects of certification procedures include:

- on-site inspections of facilities: physical tours, interviews and perhaps testing of soils and water;

- documentation related to farm history, including proof that farmland has been free from chemical inputs for three years or more (depending on the crop), proof of seed sources, pest control activities and storage locations;
- record keeping of these same activities throughout of the year;
- fees, initial and sometimes annually, for inspections and maintaining certification.

Certification regulates the organic market, ensuring that organic products are produced according to certain environmental, social and health principles. Organic labels and marks present and communicate the application of these principles to consumers. This facilitates the sale of organic products and serves as a key market mechanism; it induces consumers to pay the premium price for organically produced goods. Certification is also a way of protecting organic farmers from dishonest competition on the part of other farmers (conventional) who may claim that their products are organic in order to take advantage of premium prices and consumer preferences. Thus, certification is a necessary step for organic farming, guaranteeing quality, protecting the sector and marketing organic products.

Nevertheless, certification is often a burden for organic farmers, especially for many millions of nearly organic, uncertified small holders in developing countries. Organic certification processes are costly and complex and currently accepted standards and regulations have been defined by importing countries (EU, Japan, United States), oftentimes leaving producers at a technological disadvantage or requiring techniques ill-suited to local ecosystems or climate conditions. A common complaint of developing country producers is that “Brussels, Tokyo and Washington” define organic agriculture worldwide and these “desk-based” standards may simply serve as barriers to trade, protecting home producers from products originating from the developing world (Vogl and others 2005). A lack of harmonization or mutual recognition (i.e. accepting one standard as equivalent to another standard in a different market) among the requirements of importing countries creates the need for multiple inspections and certifications, which is expensive, time consuming and confusing for farmers. Furthermore, certification agencies are often based abroad, making them even more costly (although some domestic-based agencies are emerging in parts of the developing world).

Although benefits arise from their use, the inspection, certification and accreditation steps are becoming increasingly complex and thus evolving into a greater and greater hurdle for small farmers in developing countries. While organic farming has grown widely as a result of the projects that support organics, there are problems in some areas of the developing world where standards and certification currently pose limitations to the further development of the sector, both for exports and for local and regional market development (IFOAM 2008, Agro Eco BV and

Grolink AB 2008). Standards, certification and inspection requirements are not insurmountable barriers to production and export of organic products, but their cost and importance should be taken into consideration when launching an organic enterprise.

Consumer's awareness and marketing aspects

Many small farmers in developing and least developed countries do not have access to the organic market at the international level, and markets are almost non-existent at the local or national level. The percentage of consumers willing to pay a premium price for organic goods remains rather small throughout the world, although the percentage is much higher in developed countries. A survey of 600 consumers in main cities in Kenya, Uganda and the United Republic of Tanzania revealed that many potential consumers were not aware of the benefits of organics and were not fully conversant in what organic production really entails (IFOAM 2008). Although consumers are more and more aware of the benefits of organic, awareness-raising is a key challenge, particularly in the developing world.

In developed world markets, of course, demand for organics is much higher, and is underlined by premium prices and expanding rapidly, as discussed in the section on economic benefits. However, marketing products from the developing world is sometimes an issue in these robust markets for organics. Exporters of organics from East Africa have encountered negative marketing with respect to quality of organic products. Some Ethiopian coffee exported to Japan, for instance, was found to be tainted with chemical residues. Marketing in the large markets for organics is quite important and another reason why producers need to carefully abide by organic standards and rules.

Research, technology and knowledge transfer

Organic agriculture is know-how-intensive. Successful organic farmers are generally highly informed, committed and knowledgeable about the natural cycles in nature and ecosystems. In converting to organic, farmers often need to invest time and resources learning new techniques and notably, *un-learning* conventional ways of farming. This can be a problem for farmers with few resources, who cannot sacrifice the time or money to acquire these skills.



Unfortunately, in the developing world in particular, there is little knowledge of organic technique and low levels of awareness of

organic's economic social and environmental benefits. The majority of formal research and technology transfer institutions and organizations has only just more recently shown interest in organics and thus dedicates only a small amount of resources to the field. Consequently, less institutional support is available for organic farmers, especially in developing countries, than for conventional farmers. Interested farmers usually have to rely on their peers for knowledge and technology transfer (Kilcher 2006). To be successful, organic farmers often need to experiment with new techniques themselves, and must manage land, labour, capital and innovation with less support than conventional farmers.

Public and private support

Some of the greatest constraints faced by farmers pursuing organic agriculture is the fact that organizational frameworks, both public and private, are veered more to supporting conventional agriculture. The lack of public policy and financial support for conversion to organic is significant, especially because the conversion process can be costly and time consuming.

Depending on the land and the farmer, the conversion can take from one to five years to fully develop into a successful and sustainable organic project. This largely depends on the assets of a particular farming system, including soil fertility, water quality, on-farm biodiversity, organizational structures, knowledge and financial capital. Furthermore, during the first three years of organic production, farmers are generally not able to certify their crops nor can they access the premium prices garnered by organic produce. Although the price premium and decreased associated costs eventually result in higher profitability and productivity, for the most part, costs incurred for increased labour, training, facilities for packaging and labelling, and an effective a good monitoring system must be paid up front. Without the appropriate support during the transition period, farmers risk failure and are less likely to start the conversion process (Kilcher 2006). Greater investment in practice-oriented research, capacity-building and extension, accessible local certification schemes and harmonized standards, organic market initiatives, fair trade relationships and inspiring partnerships within the organic movements or organizations can help to overcome these constraints.

Organizational framework: Policy development and implementation at all levels

Farmers looking to pursue agriculture also lack a conducive organizational structure at different implementation levels. Small-scale farmers suffer from issues related to economies of scale, because costs related to certification, distribution, transportation and network connectivity are beyond the reach of single small farms. In general, large distribution centres prefer not to deal with

small farmers and thus smallholders may depend on middlemen who skim profits off these transactions. Bargaining power is also diminished for single farmholders. The creation of local, indigenous certification programmes and smallholder group certification schemes, such as internal control systems, can succeed at bypassing these expenses, but farmers are not always knowledgeable or organized enough for such group schemes (Kilcher 2006).

Developing these collaborative tools and services can lead to sustainable innovation within the rural communities and thereby contribute to sustainable development. Nevertheless, the development of these tools and services will not happen unless there is a concerted strategy among all stakeholders involved. This kind of strategy can promote the necessary policies and support activities to overcome the main challenges, constraints and limitations for the sound development of appropriate organic agriculture models in developing countries (Kilcher 2006).

Unfortunately, developing countries, as well as some developed countries, still lack the needed support policies for development of organic agriculture. As exemplified in the following text from the Export Promotion of Organic Products from Africa (EPOPA) project, it is not only important to develop policies to support the organic sector, but also to eliminate counter-active policies that may hamper growth in organic agriculture:

“The importance of proper government policies is felt by the organic sectors in East Africa. It concerns both the lack of supportive policies, but perhaps even more, the existence of policies that are harmful to development. Therefore, a programme like EPOPA, despite its private-sector focus, also has to engage in policy dialogue and action. One needs to keep in mind that the business objectives of the commercial actors may not be the same as the objectives of development cooperation, but with good design, dialogue, and pragmatic implementation, they can work well together.” (Agro Eco BV and GroLink AB 2008)

Today, in most countries around the world, there are local organizations that bring groups together to encourage the organic movement. In many developing countries, however, these organizations are not strong or well structured and, therefore, lack the ability to agree on strategic priorities for the development of the sector and, even more so, to actively engage in the policy advocacy activities needed to assure that these priorities are addressed and supported by governments.

Nonetheless, the good news is that a growing population around the world is now concerned with environmental degradation and health risks related to conventional agriculture. Organic agriculture constitutes a growing global trend, supported by

concerned consumers, international organizations and businesses. The next section covers some of the main supporters of organic agriculture and the projects undertaken to encourage production in organics.

1.4.2 International organizations, initiatives and projects supporting organic agriculture

This section presents general information on some of the main initiatives and organizations supporting organic agriculture around the world. Local initiatives have been undertaken for more than 25 years throughout the world, and this section includes an extensive although not exhaustive list of initiatives that render support internationally.

Non-governmental organizations (NGOs)

The **International Federation of Organic Agriculture Movements (IFOAM)** (www.ifoam.org) is a grass roots, democratic organization that currently unites 750 member organizations in 108 countries, 40 per cent of which come from developing countries. IFOAM's mission is *leading, uniting and assisting the organic movement in its full diversity, with the goal of the worldwide adoption of ecologically, socially and economically sound systems that are based on the principles of Organic Agriculture.*



IFOAM has established official committees and groups with a range of specific purposes, from the development of standards to the facilitation of organic agriculture in developing countries. For these purposes, it carries out a wide variety of projects and joint initiatives around the world – for example, it organizes annual international organic trade shows BioFach (<http://www.biofach.de/en/default.ashx>) (Brazil, China, Germany, India, Japan and the United States); the I-Go Program (www.ifoam.org/partners/projects/igo.html), designed to strengthen the Organic Agriculture movement worldwide; the Growing Organic web site, accessed through the IFOAM web site (a comprehensive information package for further development of production and trade); and facilitates the development of Participatory Guarantee Systems (www.ifoam.org/about_ifoam/standards/pgs.html) to support the growth of local markets, especially in developing countries. Most countries, developed or developing, have a national organization representing organic stakeholders and many of these are also members of IFOAM. Joint initiatives between IFOAM and national organizations have also developed support for organic agriculture at the local level.

The **Research Institute of Organic Agriculture (FiBL)** Switzerland (www.fibl.ch), FiBL Germany (www.fibl.org/en/germany/location-de.html) and FiBL Austria (www.fibl.org/en/austria/location-at.html) are centres for research and consultancy on organic agriculture. FiBL has long been committed to the international development of organic agriculture (it maintains, for instance, close links with IFOAM). FiBL Switzerland was founded as early as 1973. Numerous FiBL projects are carried out in Eastern Europe, India, Latin America and Africa to promote the development of organic research and provide advisory and certification services. The close links between different fields of research and the rapid transfer of knowledge from research to advisory work and agricultural practice are FiBL's strengths: alongside practical research, high priority is given to transferring knowledge into agricultural practice through advisory work, training courses and expert reports as well as through various modern methods of documentation (magazines, data sheets, reference books and the Internet).

Agro Eco (www.agroeco.nl/) provides advice in the field of organic agriculture and related areas of socially responsible agriculture, such as fair trade. It is based in the Netherlands and has two regional offices: one in Ghana to serve West Africa and the other in Uganda, serving East Africa. Agro Eco states its mission thus: *to stimulate organic, sustainable and ethical market chains and the development of the organic sector*. Agro Eco recently merged with the Louis Bolk Institute (www.louisbolk.org/) and both institutions profit from their combined research and advice for organic and sustainable agriculture.

Grolink (www.grolink.se), an international consultancy institution dedicated to organic agriculture, is based in Sweden with partner offices in Africa, Asia and Eastern Europe. Its mission is *to make the world a better place to live in by providing clients with excellent consultancy service in the field of organic agriculture, environment and social development*. Grolink's consultancy services are focused on production, quality assurance and marketing of organic products. Its expertise consists of inspection and certification development internationally, conducting annual training courses (sponsored by SIDA) in organic agriculture development for NGOs, private sector professionals and government officials from developing countries. Grolink also participates in the implementation of comprehensive organic programmes in partnership with other organizations (see the EPOPA Project below).

The **Organic & Fairtrade Competence Center** (www.organicandfair.org) provides information and advice to organic farming initiatives (with or without fair trade certification). It aims to improve the livelihoods of smallholders in developing and middle-income countries. The Competence Center is sponsored by Helvetas, or the Swiss Association for International

Cooperation (www.helvetas.org), which implements organic and fair trade projects in Africa, Asia and Latin America. It is supported by the Swiss State Secretariat for Economic Affairs (SECO), the Inter-church Organisation for Development Cooperation (ICCO, the Netherlands) and Helvetas. The mission is to develop organic and fair trade value chains that link producers, processors, traders, retailers and service providers from the field to the consumer. Its core field of activities include: creating and sharing know-how and information, offering guidance during the planning and implementation of projects, linking suitable partners along the value chain, facilitating market access and public relations and advising policy-makers and programmes.

The **Humanist Institute for Development Cooperation (HIVOS)** (www.hivos.nl) is a Dutch NGO with the mission *to contribute to a world with equal opportunities for people to develop their talents*. Working together with local organizations in developing countries, HIVOS fosters local initiatives by offering financial support and by advising, networking, advocating, providing education and exchanging knowledge. Although its mandate is not specifically focused on organic agriculture, they have supported projects, both at the international level and domestically in developing countries that involved networking, market strategies and advocacy, among other activities, for the development of the organic sector.

Vredesilanden/VECO (www.vecovredesilanden.org) is a Belgium-based NGO that aims to contribute to the viable livelihoods of organized family farmers in the developing and developed world. They maintain seven regional offices that support development programmes in Africa, Asia and Latin America. In close cooperation with 108 organizations, mainly focused on farmers, VECO contributes to the empowerment of farmers by improving their position in the agricultural supply chain, from production to consumption. Much like HIVOS, it does not focus exclusively on organic farming but they do support many organic farmers' organizations.

Governments

The **Government of Switzerland** has several programmes that specifically support trade of organic products at the international level. Through the Swiss Import Promotion Programme (SIPPO) (www.sippo.ch), organizations in 14 developing countries on 4 continents can find support to improve competitiveness at the production level as well as participate in international fairs. SIPPO favours products with added value in environmental and social terms and, therefore,



supports organic production and trade. For example, it finances the participation of certified organic farmers at BioFach (the annual organic trade fair hosted by IFOAM) and works to help small and medium enterprises attain access to the European and Swiss markets. Another initiative supported by the Swiss government is the Eco-mercados project, which is funded by the Swiss Development Cooperation (www.sdc.admin.ch/) and implemented by Inter-cooperation (www.intercooperation.ch/), in alliance with SIPPO, FiBL, the Sustainable Markets Intelligence Center (www.cims-la.com) and Fairtrade (www.fairtrade.net). This project aims at promoting exports and niche markets for organic and fair trade products from Central America. Through SECO, the Government of Switzerland also has several programmes that specifically support trade of organic products at the international level (<http://www.seco-cooperation.admin.ch/themen/handel/00877/index.html?lang=en>).

The **Centre for the Promotion of Imports** (www.cbi.eu) from developing countries is a Dutch governmental organization that works to stimulate and support economic activities that are sustainable, socially responsible and environmentally sound. The programme Organic and Conventional Food Ingredients for Industrial Use 2006–2011 offers support for organic farmers from developing countries by providing: consultancy in organic agriculture export marketing, product and production improvement, training and potential business contacts for the development of organic enterprise.

Intergovernmental organizations

The **Food and Agriculture Organization of the United Nations (FAO)** (www.fao.org/), like many intergovernmental organizations, acts upon countries' requests and, therefore, the support they offer at the local level varies from country to country. Some of the most recent initiatives have been organic and fair trade projects in West Africa (www.fao.org/organicag), involving market intelligence and self-financed networks, designed to build bridges between small producers and European traders. Also, a project in the South Pacific Islands has been launched, including investigation of buyers' specifications for selected organic exports products from this region. The FAO supports several research, information, training and communications initiatives, for example, a virtual library containing manuals of good organic practices for Africa is available on the FAO web site, and it also hosts the Organic research Centres Alliance (ORCA) project, a global research facility (<http://www.fao.org/organicag/oa-forum/en/>). The FAO is



also involved in several joint projects with private and government agencies for supporting the development of the organic sector.

The **United Nations Conference on Trade and Development (UNCTAD)** (www.unctad.org/) has been involved in organic agriculture support and promotion activities for over a decade. UNCTAD has identified international markets for organic products, mainly the European and North American markets, and recognizes that they represent an opportunity for sustainable exports from developing countries. Two main initiatives, namely the International Task Force on Harmonization and Equivalence in Organic Agriculture (ITF) initiative and the UNEP-UNCTAD CBTF initiative (see below), constitute UNCTAD's efforts in the realm of organic agriculture. However, UNCTAD has also sponsored several conferences, studies and events both in Africa and Latin America, which have produced an interesting collection of information focusing on environmental requirements and market access aspects with respect to organic agriculture. Some of these documents can be found in the 2006 *Trade and Environment Review*, available at <http://www.unctad.org/Templates/Page.asp?intItemID=3757&lang=1>.

UNEP (www.unep.ch/) and UNCTAD in joint partnership created the **Capacity Building Task Force on Trade, Environment and Development (CBTF)**



to strengthen the capacities of countries, particularly developing countries and countries with economies in transition to effectively address trade–environment–development issues (www.unep-unctad.org/cbtf/). One of the three thematic focuses of this task force is organic agriculture. Work in this area is being implemented under the initiative entitled “Promoting Production and Trading Opportunities for Organic Agricultural Products in East Africa”. The initiative includes the development of three thematic studies (“Overview of the Current State of Organic Agriculture in Kenya, Uganda and the United Republic of Tanzania and the Opportunities for Regional Harmonization”, “Best Practices for Organic Policy: What Developing Country Governments Can Do to Promote the Organic Agriculture Sector and Food Security” and “Organic Agriculture in Africa”), national integrated assessments of organic agriculture in the participating East African countries and a regional cooperation initiative to develop an East African Organic Agriculture Standard. The main outcome of this project was the East African Organic Products Standard (EAOPS), which was developed by the UNEP-UNCTAD CBTF in partnership with IFOAM.

The Trade and Environment Programme of the **International Trade Centre (ITC)** also performs work in the realm of organic agriculture. ITC recognizes that developing countries face serious obstacles in exporting organic products, including high quality demands of buyers, lack of information about standards, certification, markets trends and potential importing partners. ITC works with small companies and trade support institutions in overcoming these obstacles and improving access to international markets. The objective of ITC's programme is twofold: (i) strengthen the competitiveness of small and medium enterprises and the capacity of trade support institutions; and (ii) provide support to policy-makers on issues relating to organics. Through its technical assistance programmes, ITC supports exporters of organic products and trade support institutions in developing countries through a number of channels (http://www.intracen.org/organics/technical-assistance_projects_overview.htm).

The **Inter-American Institute for Cooperation on Agriculture (IICA)** (www.iica.int/Eng/organizacion/LTGC/agricultura/Pages/default.aspx) is developing the Hemispheric Programme on Organic Agriculture (Programa Hemisférico de Agricultura Orgánica), with the objective to establish and develop institutional structures, standards, policies and information to support the organic sector development in Latin America and the Caribbean Region, emphasizing access for small and medium enterprises. Recent initiatives include support for the elaboration of National Organic Agriculture Strategies in Nicaragua and Paraguay as well as several meetings with regional authorities to facilitate the harmonization of organic regulations in the region.

The **International Task Force on Harmonization and Equivalence on Organic Agriculture (ITF)** (www.itf-organic.org/abouttheitf.html) is a public-private initiative, led jointly by IFOAM, FAO and UNCTAD, to search for solutions for the proliferation of organic standards across the world (including private standards, governmental regulations and international standards). The lack of harmonization and/or mutual recognition among organic guarantee systems is considered to be a major obstacle for the development of the organic sector, especially in developing countries. The ITF consists of representatives of governments, intergovernmental agencies and stakeholders from the private sector. From 2003 to 2008, the ITF worked to complete a series of studies and proposals for reducing organic trade barriers. Two practical tools were developed to streamline the acceptance of products traded internationally: a tool for recognizing organic certification bodies internationally and an equivalency of production and processing standards tool. The studies and reports from the work of the ITF contain extremely useful information for understanding the magnitude and origins of these issues, which is considered one of the main challenges for the promotion of organic production and trade.

Joint international initiatives and projects

The **Export Promotion of Organic Products from Africa (EPOPA)** was a programme funded by the Swedish International Development Cooperation Agency (SIDA) developed to improve the livelihoods of rural communities in the



United Republic of Tanzania, Uganda and Zambia through exports of organic products. Agro Eco and Grolink jointly implemented the programme, which was active from the mid-1990s to 2008. A total of 110,000 farms participated, of which around 80,000 delivered products for export. In total, approximately 600,000 individuals benefited from the EPOPA project. The outcomes of the project were equally impressive, including: strengthening the organic sector in Uganda, establishing the operation of 30 exporters, launching internationally accredited certification bodies in the United Republic of Tanzania and Uganda and increasing awareness about the organic sector throughout the region.

Another important initiative recently started in East Africa, is the **Regional Cooperation for Organic Standards and Certification capacity in East Africa** (OSEA phase II) (www.ifoam.org/partners/projects/osea.html), which works towards the objective of increasing income for rural communities through local, regional and international trade of organic products. The project, funded by SIDA, is currently in operation and implemented jointly by IFOAM, the Kenya Organic Agriculture Network, the Tanzania Organic Agriculture Movement and the National Organic Agriculture Movement of Uganda. Facilitating trade in organic products through the development and implementation of a regional standard and regional certification cooperation underlines the impetus that drives this work. The East African Organic Mark, which designates producers that use EAOPS, has also been established in part due to the work of this project.

The **African Pavilion project** (<http://www.organicafrika2009.com/>) is a joint initiative, implemented by Agro Eco and Grolink, in cooperation with over 15 organizations (including IFOAM, UNEP, UNCTAD and other United Nations agencies as well as in partnership with African organic movements) and financed by Norad, HIVOS and others. The main objective is to achieve a positive image for African organic products and provide access for more African organic producers to international markets. It is directly linked to the participation of African organic farmers at BioFach. The project supports activities that include: preparing and training exporters, improving business etiquette and marketing know-how, working with entire supply chains to improve the quality of production and pursuing the follow-up on business opportunities.

Cooperativa Sin Fronteras Internacional (CSF/Cooperation Without Borders) (<http://www.cooperativasinfronteras.net/en/quienes.html>) is an international alliance to promote development, growth and integration of agricultural enterprises that are collectively organized (cooperatives or associations), democratic and committed to organic, fair trade and high quality principles for food production. It promotes direct relationships between growers and consumers, increasing product added value at its source, and the establishment of alliances between farmers, transformers and distributors. With the support of NGOs, donors and other organizations from Latin America and Europe, it currently consolidates 20 member organizations from 9 countries, representing a total of 12,780 families. Participation is open to farmers' cooperatives and associations that share the CSF objectives and principles.

1.5 Conclusions

- Agriculture has always played a fundamental role in human development. It is a multi-output activity that produces not only food, but also non-food outputs such as environmental services, landscape amenities and the enhancement of cultural heritage.
- Another key role played by agriculture is, potentially, to contribute to poverty alleviation, the improvement of personal livelihoods and the enhancement, conservation and sustainable management of the natural resources.
- In the context of current economic, food, energy and climate change crises, one of the main roles of agriculture is to meet the challenge of providing adequate output to assure global food security.
- Agriculture is an important economic activity in many developing countries, but mainstream agriculture faces instability in financial markets, higher food price inflation and volatility and weakening global economic growth.
- Conventional agriculture is not the best option for fulfilling future agricultural needs because although it was highly successful in increasing crop yields and augmenting aggregate food supplies, these successes did not necessarily translate into benefits for the rural poor in terms of greater food security or greater economic opportunity and well-being. In addition, conventional farming has many negative impacts on the environment (soil, water, biodiversity, non-renewable resources) and on human health.

- Organic agriculture is considered a viable option for sustainable agriculture in developing countries because it offers a unique combination of low external input technology, environmental conservation and input/output efficiency.
- As defined by IFOAM: “Organic agriculture is a production system that sustains the health of soils, ecosystems and people. It relies on ecological processes, biodiversity and cycles adapted to local conditions, rather than the use of inputs with adverse effects”. An extensive but not exhaustive examination of the benefits of organic agriculture revealed:
 - more sustainable and higher yields per hectare;
 - improved food security and consistent agriculture production;
 - a growing and profitable organic agriculture market;
 - access to lucrative local and international markets;
 - high price premiums for organic products;
 - employment opportunities;
 - reduced soil erosion and improved soil fertility;
 - more resilience with respect to climate change;
 - reduced contribution to global warming;
 - enhanced contribution to ecosystem services and environmental damage is prevented;
 - use of natural synergies that are ecologically and economically sustainable;
 - increased cooperation between community members and enhanced social capital;
 - revitalized traditional customs and local values;
 - benefits for farmers’ health, the health of local populations and the health of consumers;
 - high-quality food becomes available for consumers.
- Some of the main challenges for the promotion of organic production and trade include:
 - certification and standards are costly;
 - consumer awareness needs strengthening, especially in developing world markets;
 - marketing is needed, especially for developing world products;
 - research and support for organics is somewhat limited;
 - the investment needed to recover and convert conventional farming systems can be considerable;
 - the development of supportive, participatory and collaborative projects and policies are needed.

Despite these challenges, a growing population around the world is now concerned with current environmental and public health degradation and risks, and recognizes the negative impacts of

conventional agricultural practices. Organic agriculture constitutes a global trend, supported by concerned consumers and international organizations (both governmental and non-governmental).

- A wide array of private, public and intergovernmental organizations support organic agriculture development by:
 - providing information and advice on organic production and marketing methods;
 - providing trade information and developing market access;
 - developing projects on standards and certification schemes;
 - developing projects that link organic production and international trade.

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Further research

Comparing organic and conventional farming systems aims to obtain hard facts and scientific data on the benefits and challenges of organic agriculture compared to other farming systems. There are a larger number of short-term comparison experiments and a few long-term comparison trials. The following is a list of recent publications on farming system research:

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