

FACTORS INFLUENCING ORGANIC AGRICULTURE POLICIES WITH A FOCUS ON DEVELOPING COUNTRIES

Nadia Scialabba
Food and Agriculture Organization of the United Nations
Rome, Italy

Summary

Organic agriculture is frequently understood as a system of food production and consumption proper to environmentally- and health-conscious people of the developed world. The main drive of many developing countries to produce organic food and fibres is to tap market opportunities in developed nations.

There are, however, other concerns that determine choices towards organic management. Conversion to organic agricultural systems are triggered by different objectives, such as: securing a place on international markets, export promotion, economic self-reliance, finding alternatives to decreased access to agricultural inputs, natural resource conservation, food self-sufficiency, and rural and wider social development.

In developed countries, organic agriculture is an economically, ecologically and socially sound option to reduce surpluses as well as an alternative to land set-aside. The main aim of several developing countries policies and/or legislative approaches for organic agriculture is income generation through the promotion of certified organic food. Non-market objectives of organic producers have not, as yet, been supported by government policies, but there are a few exceptions.

In developing countries, especially in low-input traditional systems, properly managed organic agriculture systems can increase agricultural productivity and restore the natural resources base. The development of organic agriculture policies in developing countries requires widening market-oriented objectives to include food security objectives.

An overview of different “entry-points” to organic agriculture, with examples of country policy and support measures (actual and potential) for organic agriculture around the world are presented in the paper.

INTRODUCTION

What is organic agriculture? This is a surprising question to ask in an IFOAM forum populated by an informed audience. For many, but especially for policy-makers in developing countries, organic agriculture is a set of strict rules and complicated practices that allow marketing of certified food products. Although traditional farming which applies soil-building practices and no synthetic inputs qualifies as “organic”, it is not usually considered as such when discussing the present status, potential for development, and related policy support of organic agriculture. Factors that influence organic agriculture policies (or their absence), both for certified organic production and *de facto* organic production outside the global market system are discussed in this paper. Traditional systems that are organic by default, that is, that do not use synthetic agriculture inputs nor soil-building practices, are not considered “organic”. This paper therefore considers organic agriculture systems regardless of the presence of a legislative framework. The focus is on developing countries.

Factors, or development objectives, influencing organic agriculture policies are reviewed. In particular, the scope of organic agriculture within wider agrarian policies is considered. As organic agriculture policies are generally lacking in developing countries (or of limited scope), the motivation for a government to take up organic agriculture policies is the focus of the presentation below.

ORGANIC AGRICULTURE POLICIES

Main trends in organic agriculture policies

In developed countries, farmers and consumers’ demand for environmental and health quality created the organic agriculture movement. In USA, private and state schemes for certified organic food proliferated to a point that authorities were requested to establish federal rules and control systems to guarantee consumers’ confidence in organic products. In the European Union (EU) the demand for sustainable agriculture, and organic agriculture in particular, represented a perfect match to governments’ priorities to reduce surplus food. In fact, EU organic agriculture policy reconciles agricultural and environmental policies as it represents a viable option for extensification and an alternative to land set-aside. The present EU framework for organic agriculture aims at developing local economies and overcoming problems of discontinued supply through its support programmes. Although commitments to support organic agriculture vary between EU countries, the main objective is the move towards a model of sustainable agriculture and rural development. Active government policy not only supports organic farmers but (in some cases) requires it through established targets.

In developing countries, policies for organic agriculture seek to earn, through exports, foreign exchange for other development needs. In fact, declining government budgets have forced many developing nations to re-structure their agriculture sector. Agricultural institutes and extension agencies have to provide more market-oriented services. Liberalization and privatization policies open the way for a greater role for entrepreneurs and producers’ organizations. These trends are an impulse for private initiatives for organic agriculture. When a critical mass of practitioners is formed for organic agriculture, governments formulate policies to support the marketing of certified organic products. The incentive of such policies is therefore economic, either for tapping lucrative markets, securing a place in world trade

and/or counter-balancing withdrawal of government support to agricultural inputs and other services.

While the environmental and economic benefits are generally perceived in both developed and developing countries, there are reservations as regards the ability of organic agriculture to respond to other societal needs, namely to secure food needs. The review of the Commission on Sustainable Development (CSD) of the agricultural sector (March 2000) revealed further concerns of policy-makers with regard to organic agriculture. The CSD-8 Report mentions the following: “while organic farming had been promoted and used in a number of countries, some countries were cautious on this issue. They felt that there could be limitations and risks in the organic production of food in developing countries, and that this approach should not be considered as a solution for developing country needs. The use of organic agriculture as a basis for setting standards that could lead to trade barriers should be avoided. Nonetheless there are a number of organic agricultural techniques that could be applied to enhance traditional and other agricultural practices to promote sustainable agriculture and rural development. The international community should assist developing countries to use and take advantage of these techniques”.

These statements denote reservations on the current system of organic food trade as well as a readiness to accept the transfer of some organic agriculture techniques. One should therefore not expect major policy changes in support of organic agriculture, at least in the short term.

Organic agriculture beyond the market logic

In both developed and developing countries, organic agriculture policies have developed bottom-up, emerging from societal pressure. National and supranational policies for organic agriculture have been so far concerned with creating favourable structures (such as providing legal definitions, payment to producers and market development) for certified organic products. The type of agricultural development (and supportive policies) is increasingly dependent on the market-economy. Market demand for organic agriculture products pulls agriculture production policies towards a more sustainable direction and links demand and supply.

However, a large number of small-scale subsistence farmers in developing countries produce for consumption, do not participate in the market and are left behind by globalization. The challenge for developing countries will be to establish organic agricultural policies that combine income generation and improved domestic food production. The latter involves raising productivity of poorly endowed areas by maximising the use of local resources. Such policies would better respond to self-reliance, local food needs and health of resource-poor farmers.

ENTRY POINTS TO ORGANIC AGRICULTURE POLICIES

Present and future policy development for organic agriculture will always have multiple objectives: income generation, natural resources conservation, food self-reliance and rural development - but with different levels of emphasis. For the sake of convenience, the examples presented below are grouped under one over-riding objective (or entry point) but this does not exclude that a policy can target multiple objectives.

INCOME GENERATION

Organic agriculture generates incomes through international exports or by saving production costs. The objective of export promotion of organic products is not only driven by interesting premium prices but also by certain countries' search for a place on world markets. The objective of reducing costs (especially when foreign currency is needed) through organic agriculture is achieved by promoting economic self-reliance and by saving on external input costs (e.g. pesticides, fertilizers).

Securing a place on international markets

Issues. Institutions and agreements governing trade such as the Uruguay Round Agreements, regional trade agreements and preferential trade agreements are critical factors for competitiveness on the agricultural market. Trade liberalization and the erosion of preferential trade agreements are stimulating the production, in developing countries, of value-added food products to secure markets for what is often their single export commodity. In particular, countries with small economies rely on a small range of commodities such as sugar cane, bananas and tropical beverages (coffee, cocoa, tea), many of which having suffered from a long run decline in real world market prices and slow growth in demand. The global demand for agricultural raw materials also expanded less rapidly over the past two decades, due to the growth in the use of synthetic substitutes, but recently consumer demand of "natural" cotton textiles is increasing. Organic agriculture offers a specialized market and an opportunity to diversify into new commodities that have a high demand and interesting price premiums.

Countries with small economies. In small island developing states, erosion of trade preferences associated with sugar and bananas are of overwhelming importance, especially as the EU banana regime (which provides duty free access for ACP bananas) has been challenged by the World Trade Organization. Banana producing countries are likely to be hurt if they fail to improve their competitive position and diversify into higher value products. Policy responses to emerging challenges have not materialized but the private sector in several small countries has already started converting into organic production. For example, in the Dominican Republic, the global crisis of the sugar sector (falling prices and limited quotas) lead COOPCANA (a cooperative grouping 12 000 families) into converting half of its sugar production into certified organic products (3 000 tonnes in 1999).

Bananas. Markets of organic bananas have developed only recently and still represent very small volumes (global imports of fresh organic bananas in 1998 was approximately 27 000 tonnes while the total volume of banana imports was 11 million tonnes) but imports have been growing at approximately 30 percent per year. The main supplying country is the Dominican Republic, followed by some other Latin American countries (Colombia, Costa Rica, Honduras and Mexico) and the Philippines. Prospects for increased organic banana marketing are promising, especially as price premium at retail level may vary from 50-200 percent. Although market demand is significant, organic bananas will remain a niche market as long as the considerable production constraints are not overcome (in particular Black Sigatoka and soil fertility aspects). In this respect, they may offer good opportunities to small and medium scale producers in countries where Black Sigatoka is absent or less prevalent (for example, the Dominican Republic, Southern Brazil and the Windward Islands). Even so, other production and shipping constraints will have to be solved (e.g. at present, there are no specific organic banana reefer sailings to Europe or North America).

Cotton. Several African and Latin American countries export certified organic cotton. The economic opportunities of this specialized market attracts the interest of private traders (US companies for naturally coloured cotton in Arequipa, Peru), national NGOs (coordinating small holders in Taua, Northern Brazil), international NGOs (assisting producers in Uganda and Senegal) or federal governments (intention to convert a whole district in Brazil into organic cotton production through appropriate farmer training).

Policy requirements. In many tropical countries, limited supply (and as a result, logistic impediments to exports) besets organic agricultural growth. Producers and operators would benefit greatly from government policies that support research (to resolve production constraints) and conversion and certification costs, with a view to improving supply. Agricultural policies have not yet integrated organic agriculture policies as a means to meet the challenge brought by trade liberalization.

Export promotion

Issues. The economic opportunities offered by organic markets in Western Europe, North America and Japan have attracted the attention of many developing countries. Favourable government intervention and support exist in a few developing countries (namely in Latin America) and steps are being taken by many others to support the export of certified organic commodities. According to the International Trade Centre, 90 developing countries (of which about 15 are least developed), export certified organic products in commercial quantities, namely tropical and off-season commodities. In Argentina, for example, only 2 000 tonnes of a total 25 000 tonnes of organic produce are consumed domestically, the bulk being exported to the EU.

The apparently long-term potential of organic markets is not only fuelled by consumer demand and willingness to pay premiums but also by aggressive marketing and promotion undertaken by major retail groups. Most developing countries, however, obtain technical know-how and certification services from private organizations. The strong-market orientation of policy interventions for organic agriculture are evident in certain countries. In India, for example, it is the Ministry of Commerce that registers farmers wishing to convert to organic operations but farmers are asked to seek (unavailable) technical assistance in the Ministry of Agriculture. In most cases, the development of organic agricultural exports of developing countries relies on private initiatives, which establish trade associations with foreign partners. This trend is also a creative response to the withdrawal of government support to agriculture.

Mexico. In Mexico the elimination of most input subsidies, rural credit and other Government support over the last decade pushed farmers to seek more profitable production alternatives. Counter-seasonal organic fruits and vegetables, herbs and medicinal plants and organic, shade and fair-trade coffee are exported to USA. Mexico is one of the leading exporters of organic coffee. Typically, small-scale farmers organize themselves into cooperatives, receiving support from rural development and environment NGOs. Joint ventures between US-based importers and small farmers organizations in Mexico are common, especially for the provision of specialized inputs (e.g. seeds, packing materials), agronomist advice, and certification.

Turkey. In Turkey all certified organic production is destined to export markets (mainly to Europe, but 15 percent to USA). Ninety percent of products are dried fruits; the remaining

includes nuts, textiles, medicinal plants and herbs. The main drive to this development was the Turkish Association of Organic Agriculture Movement (ETO), an NGO that today has an advisory role to the Ministry of Agriculture and Rural Affairs and related state offices. In 1994, the Turkish Government adopted the EU definition of organic agriculture and issued its own legislation as an opportunity to increase agricultural exports while providing income to marginal farmers. Over the last few years the Ministry of Agriculture increased its policy interventions to support production and trade of certified organic products: a 1996 regulation requires Turkish exporters to declare certified organic goods exported to the EU; independent control and certification is authorized by the Ministry; extension staff is being trained by ETO on organic agriculture; a research working group on organic agriculture was established to set up priorities in research and to raise funds; and a special committee on organic agriculture was charged to coordinate and carry out activities on organic agriculture, especially with regard to collecting information related to certified organic products.

Tunisia. The proximity of a privileged organic market (EU) has triggered a relatively quick policy response from the Tunisian Government. Measures are being taken to encourage farmers' conversion to organic production while remaining competitive. In 1999, presidential measures were taken to comply with EU Regulation and a National Commission for Organic Agriculture was established to encourage and stimulate the organic sector. A budget was allocated by the Ministry of Agriculture, including subsidies to cover 30 percent of investments of organic farmers and to cover 70 percent of certification costs over five years. A certification authority (BIOCERT Tunisia) was created under the Institut National de la Normalisation et de la Propriété Industrielle. As there is a lack of organized sources for organic fertilizer supply, the Tunisian Institute of Appropriate Technologies is engaged in studies for composting organic waste of food industries and techniques to recycle olive water residues. A Technical Centre for Organic Agriculture is being created for professional training and to support research.

Guatemala. In Guatemala 35 years of civil war (where farmers abandoned their land) reclaimed the country's native plants such as cardamom and other spices and natural dyes. Market demand for traditional and chemical-free commodities represented a meaningful source of income to some peasants. Small-scale farmers and producers in northern remote jungle territories (namely Indian peasants in Las Conchas) became exporters to US markets under private projects that include organic cocoa, mango and equal exchange coffee.

Prospects. The so far insufficient supply of certified organic products can be boosted if technical production problems and certification costs are decreased: government policies play a key role in this respect. In particular, a legislative framework that provides definitions, standards and accreditation to certifiers is needed to protect responsible producers. Active government support to inspection and certification and market-oriented services are necessary to provide equal opportunities. Otherwise, the export of certified organic products risks becoming a business that only large farmers, or highly organized groups of small holders, can afford. Although there is an IFOAM Accreditation Programme Criteria for Small Holders Certification, there is no general agreement on how inspection and certification of small holders should be organized. This often implies high costs to producers and hence, export difficulties for developing countries.

Economic self-reliance

Issues. Developing countries are increasingly dependent on imports, namely cereals. Import substitution with local food varieties, can partly increase food self-sufficiency as well as dependence on volatile markets. Organic agriculture offers a means to substitute imported agricultural inputs with locally-produced organic inputs. In places where trade is constrained and foreign currency is scarce, organic agriculture becomes a solution to economic necessity.

Cuba. When the trade relationship between Cuba and the former USSR was severed in 1990, pesticide imports dropped by more than 60 percent and fertilizers by 77 percent. Pushed by economic necessity and in response to the crisis of agricultural inputs, Cuba adopted organic agriculture as part of its official agricultural policy. The Ministry of Agriculture and the Cuban Association of Organic Agriculture took far-reaching steps to promote organic agriculture systems and establish research programmes that laid the foundations for food self-sufficiency (namely fruits and vegetables) through organic management. Among sophisticated experiments are bio-fertilizers, bio-pesticides and the use of fermentation and tissue culture. Investments are now being made to increase knowledge and technology for organic agriculture, through higher education curricula, with a view to create a new generation of agronomists.

Policy requirements. Cuba is perhaps the best example of large-scale government support to organic agriculture and is an encouraging model to replicate in other countries. It is an integral part of agricultural policy. Hence, organic agriculture development does not suffer from the disincentives that are typically brought by conventional agricultural policies. In fact, government-supported organic production does not have to compete with cheaper imported food, farmers are not subject to pressure for using synthetic agricultural inputs, and proper research and extension back-up efforts.

Alternative to synthetic pesticide reduction

Issues. Pesticide hazards to human health and the environment are controlled through increasingly stringent pesticide residue standards in food. Pesticide-use reduction policies are multiplying around the world and the decrease (or removal) of subsidies on agro-chemicals represents an increase in production costs. Farmers are therefore reducing the usage of purchased inputs through decreased application frequency, transition to integrated pest management or conversion to organic agriculture.

Iran. In Iran farmers have so far obtained a 50 percent discount on cost of already subsidised pesticides. The existence of pesticide residues above internationally accepted standards for exported nuts triggered policy measures to tackle export difficulties. The newly established High Council on Pesticide Use Reduction Policies, chaired by the Ministry of Agriculture, decided to cut pesticide subsidies by 7 percent per year. This Council also commissioned a study on organic agriculture policies in the world to evaluate the feasibility of this system in the Iranian context. Strict standards and the export orientation of organic agriculture were found to be less attractive than integrated pest management for the Iranian objective of pesticide reduction. The present implementation of non-chemical pest management in Iran is a reality that might potentially lead, at a later stage, to the adoption of broader organic agriculture policies. A National Committee on Organic Agriculture has recently been established to consider the type of support that the Government could provide to peasants.

Egypt. The organic agriculture movement was born in Egypt some 20 years ago, chiefly to alleviate the increasing threat of pesticide poisoning to Egyptian farmers. Cotton cultivation is one of the most pesticide intensive crops. World-wide, 18 percent of chemical plant protection active ingredients are used in cotton fields which represent only 0.8 percent of cultivated areas. In the last two decades, the Egyptian average yield of raw cotton remained stable despite a continued increase of pesticides. In the early 1990s, SEKEM starting applying biodynamic methods (already in use for herbs, cereals, and vegetables) to cotton. The success in cotton pest control (by pheromones) raised authorities' interest in biological control: today, nearly 80 percent of Egypt's cotton cultivation applies biological pest control and the Ministry of Agriculture has forbidden arial sprays of pesticides on cotton, with a view to promoting biological control. In 1995, pesticide use in cotton dropped from 1 800 t to 320 t and average yield grew from 900 to 1 220 kg/acre. Organic cotton cultivation (using organic fertilization – compost, wood ash, rock phosphate, clover/onions rotations) is based on intensive cooperation between farmers and scientists. The Centre for Organic Agriculture in Egypt operates an inspection and certification scheme according to the EU Regulation 2092/91.

Prospects. The various problems of synthetic pesticide sourcing and application create opportunities for organic agriculture development. Since integrated pest management has become a large reality in conventional agriculture, the target of zero synthetic pesticide use is being approached. The withdrawal of input subsidies also includes fertilizers. Regulatory measures and higher production costs are good reasons to increase fertilizer-use efficiency and to fertilize organically. As knowledge is gained in integrated production, the transition to wider organic agriculture policies will be facilitated.

NATURAL RESOURCES CONSERVATION

Issues. Environmental agreements and environmental concerns of society at large put a limit to agricultural expansion and mitigation of agriculture-induced land degradation. The Forests Principles, the Convention on Biological Diversity, and the Convention on Climate Change are examples of policy instruments that have a direct positive bearing on organic agriculture. Agro-forestry and minimum tillage, that are common in organic systems, help carbon sequestration. Crop rotations and diversified production help biodiversity. Although organic agriculture for the sake of the environment is not the prime preoccupation in developing countries, some of these countries succeed in deriving livelihoods while protecting their natural capital. In Colombia, industrial organic sugar is produced (6 000 tonnes in 1999) from the Natural Reserve El Hatico. In Mexico, shade-coffee (a system that meets many requirements of organic production) is grown in forests.

Ghana. Ghana provides a good example of efforts to challenge the inherent low fertility of the natural environment through organic management. In the past decade, deforestation and inappropriate farming methods resulted in drying rivers and streams in the Techiman District of Ghana. Consequently, disputes over water were raised within the local Forikrom community (involving 6 000 people). A local young people's association was formed to help communities carry out local improvements and respond to natural disasters. With the help of the Department of Forestry, an afforestation project created a shelterbelt around water sources, a centre was created for forestry extension (2 000 persons were trained) and nurseries were established for reforestation purposes and commercial farming. The good sales prospects for cashew, palm, and teak, and the interest of the Environmental Protection Agency of Ghana, led to the creation of the Abrono Organic Farming Project to deal with the concerns of

declining soil fertility that underfed the earlier conflict. Young farmers were trained in organic crop production and dry-season methods of vegetable gardening. Trainees have developed organic cashew farming and organized themselves into cooperatives to engage in block farming of 1-2 acre plots along the stream. Today new sources of wealth have developed through new organic cash crops. The emergence of an environmentally conscious community serves as a model for other towns in the region. Shelterbelt with teak and leucenea have developed and water is abundant. People no longer burn the bush carelessly and there have been no bush fires since 1990.

In its efforts to halt declining soil fertility and to enhance productivity, the Ministry of Food and Agriculture and the Ghana Organic Agriculture Network (gathering farmers, NGOs, and policy-makers) is implementing a Sedentary Farming System project to enhance agricultural productivity. Organic farming is proving its viability as a better alternative for small-scale farmers who produce over 80 percent of locally grown food. The system is gradually reducing slash-and-burn to shift to intensified cultivation on a unit area. The Ministry of Food and Agriculture also supports organic rice-fish projects to enhance the ecological basis of local development.

NGOs and Government institutions are collaborating to cut pesticide costs, generate employment and minimize health and environmental hazards through organic agriculture. The Organic Farming Promotion Project is implemented by an NGO and a technical advisory board composed of officers from the Environmental Protection Agency and the Ministry of Food and Agriculture. Natural ways are promoted through research on compounded Neem extract concoction and garlic: trials on grain storage are carried out by the Plant Protection and Regulatory Services. Organic fungicides, foliar and fertilizers from local waste material are part of the research. Funding is however a major setback to further research and education.

Central America. In Central America (i.e. Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Panama) most agriculture ministries are also responsible for natural resources. The Central American Commission for Development and the Environment (created in 1989) provides a favourable political framework for natural resources conservation. Agriculture ministries possess the Action Plan for Central American Agriculture. Agricultural policies are presently directed towards export promotion of non-traditional products through intensive capital, labour and agro-chemical use. Existing non-tariff barriers to trade of many conventional agricultural products and institutional responsibility for both the environment and agriculture are favourable elements for eventual adoption of organic agriculture policies. Generally, organic products in these countries are produced by large farmers and commercialized by international middlemen and government support to organic agriculture is lacking.

Prospects. It is evident that environmental conservation will remain second to livelihood needs in developing countries. Natural resources, however, are the basis for agricultural productivity. Organic agriculture has positive “side-effects” on the environment. Reconciling natural resource conservation and agricultural production through organic agriculture is, therefore, an avenue for supportive policies in developing countries. These policies should focus on facilitating research and education on agro-ecosystem management. Cooperation between environment and agricultural agencies on land use and standard setting is essential.

LIVELIHOODS OF RESOURCE-POOR FARMERS

Food self-sufficiency

Issues. Conventional agriculture tends to be unaffordable and unsuitable for resource-poor small holders. It requires inputs that are outside their reach. Subsistence farmers represent a large part of farmers in the developing world. For example, farmers marginalized by modern agriculture in India represent, according to some authors, about 70 percent of the farming community. Poverty and lack of production means undermine the productivity of traditional farming systems. In developing countries, a good proportion of areas under cultivation produce below the “minimum acceptable level” due to different agro-ecological constraints and different agricultural management practices. Although the growth of global food production, in the next three decades, is expected to surpass population growth (1.5 percent and 0.7 percent respectively), 400 million persons will continue to suffer hunger in the year 2030.

Agricultural development depends on factors of production (namely arable lands, irrigation and synthetic input use) and on a socio-political environment dominated by poverty and food supply policies that create dependence on imports of cereals. As the problem of access to food, and means to produce it, are tightly linked to income growth, food security is likely to fall short of its goal as long as poverty persists.

The introduction of organic agriculture technologies in resource-poor areas has the potential of raising agricultural productivity while relying on local resources. Considering that the departure point is very low in many areas, especially in Sub-Saharan Africa, consistent efforts to enhance farmers’ skills in managing resources and maximizing labour productivity can increase agricultural performance. Such efforts do not mean only refraining from using external inputs but rather complementing traditional knowledge with results of modern agronomic and ecological sciences. The rehabilitation of soil fertility through organic management and diversified cultivation of traditional food can increase farming systems resilience, improve household nutrition, and decrease dependence on single crops for volatile markets.

Providing that farmers have access to land, their labour and skilful management of locally available resources could raise agricultural productivity in a sustainable manner. According to the Ghana Organic Agriculture Network, about 250 000 farming families in South and East Africa (in Botswana, Ethiopia, Kenya, Lesotho, Malawi, Mozambique, South Africa, Tanzania, Uganda, Zambia and Zimbabwe) with about 60 million hectares are realizing an average doubling of crop yields using organic methods.

Kenya. One of the main questions relating to the incorporation of organic agriculture into general agricultural policy is the lack of hard facts proving its actual performance in agronomic and economic terms. With the support of the Netherlands Ministry of Foreign Affairs, ETC-Netherlands and the Kenya Institute of Organic Farming conducted a four-year research to evaluate the future prospects of organic agriculture in low and medium potential areas in East Africa. Contrarily to the general belief that organic agriculture in the tropics is constrained by the insufficient organic material (to compensate for the use of external inputs), the study revealed a good performance of organic systems. The organic system in medium potential areas significantly out-performed conventional methods in maize grain yields, net cash benefits, return to capital and return per family labour day. Organically grown maize

experienced less weevil attack during storage than its conventional counterpart. The outcome of this research was shared with researchers, extension staff and farmers. Collaboration and further deepening of future research with mainstream institutions is being discussed. In particular, there will be a need to explore site-specific techniques and to study the long-term effect of organic matter on soil fertility and nutrient balances. In Kenya, the possibilities offered by organic farming are particularly appealing to women. They offer the possibility of successfully securing food for the family, without having to depend on cash or potentially dangerous chemical products. As a result, organic agriculture has begun to develop in densely populated areas on small holdings where food crops are grown intensively.

India. India has the second largest population in the world. Agriculture occupies 45 percent of the total geographical area and is the primary occupation of more than 60 percent of the population. A pre-colonial survey of 800 villages in South India indicated a prosperous average agricultural productivity. Colonialism destroyed the self-reliant nature of village economies and frequent famines led to the adoption of the Green Revolution technologies that met food needs and generated export surpluses. This laudable effort in reaching higher levels of production left, however, many side effects, which continue to impair the sustainability of Indian agriculture. Use of chemical inputs, aggressive propagation of hybrid seed varieties, uncontrolled mining of water resources, and turning the agricultural sector to market economies disoriented the self-reliant economic system into a dependant economy that neglected staple food for poor farmers, crop rotations, tree growing, and other traditional practices. Fertile soils are today seriously degraded, water logging is a problem in irrigated areas, and depletion of soil nutrients is increasingly evident. Consequently, the productivity of most crops is affected and pesticide poisoning is recurrent among humans and animals.

A renewal and adoption of holistic traditional practices through organic agriculture is in its infant stage. Mahatma Gandhi pioneered organic agriculture through constructive programmes in several locations in India. A protagonist of self-reliance, he taught his fellow workers about composting and farming based on local inputs. The Gandhian concept of organic agricultural practices is spread over different parts of the country. In hilly regions, tribal areas and other marginal regions, many small farmers are *de facto* organic producers. Out of necessity they have turned degraded lands into productive organic systems that meet local needs. Surpluses are sold in village “green shops” at prices often equal to conventional products.

Many NGOs are today active in promoting organic agriculture in India. Growing environmental consciousness and fears of health hazards of conventional food has spawned domestic consumption of organic food. Expansion of domestic markets is leading to the surge of organic producers attracted by premium prices. In the year 2000, the Horticulture Division of Department of Agriculture and Cooperation has created an organic farming cell to coordinate various activities of organic agriculture in India. For a few years now the Agricultural and Processed Food Export Development Authority has been promoting exports of organic agriculture products (namely tea but also a wide variety of fresh and processed crops). The National Standing Committee on Organic Agriculture (set up by the Ministry of Commerce), collaborates with SEWAK (an NGO partner of IFOAM) to assess the feasibility of organic production and consumers’ response on domestic markets.

Government interventions established so far by the Government of India focused on promotion of certified organic production, first for international markets and more recently, domestic markets. Organic farmers considered in surveys are richer producers who have

market access. Resource-poor farmers practising organic farming (and selling locally without price premium) have not yet been the focus of attention. Even for certified organic products, India still has a long way to go in developing the necessary policy framework and implementing it. There is a weak political will, propaganda for agro-chemicals erodes confidence in organic agriculture potential, small farmers are marginalized, there is a lack of a national body of farmers, lack of training, lack of national certification and lack of organized markets within the country.

Prospects. The interest in organic agriculture in developing countries is growing because it requires less financial input and places more reliance on the natural and human resources available. Studies undertaken to date seem to indicate that organic agriculture offers a comparative advantage in areas with less rainfall and relatively low natural soil fertility levels. Labour realizes a good return and this is very important where paid labour is almost non-existent. Agricultural policies should revise their food supply strategies and valorise local production. Organic agriculture does not need costly investments in irrigation, energy and external inputs but rather substantial investments in capacity-building through research and training. Pro-poor organic agricultural policies have the potential to improve local food security, especially in marginal areas.

Rural and wider social development

Issues. Urban and peri-urban organic production provides food to vulnerable groups. Developing countries' farmers easily adopt organic techniques because they are close to their traditions and culture. The potential of organic agriculture to generate employment and reverse migration to urban areas has not as yet been taken up by developing countries' agricultural policies. It seems, however, that this awareness is rising in economic and social government institutions in some countries.

Argentina. In Argentina a model of organic orchards is being experimented to promote employment and food self-sufficiency since the beginning of the 1990s. An NGO (pro-Huerta), with institutional support of the Secretariat for Social Development and other Government agencies, is seeking alternatives to improve the nutritional status (both quality and variety of food) of rural and urban populations and to create employment opportunities. This project benefited by 1996 nearly two million individuals, namely unemployed, indigenous, and food-insecure persons (such as female-headed families, elders and under-aged). The initiative promoted small-scale food production by providing capacity-building, technical assistance, development and validation of alternative technologies, inter-institutional coordination, and provision of critical inputs.

Costa Rica. In Costa Rica health motivations led to the formation of small-farmers groups to produce organic vegetables, which have been successfully marketed nationally over the last ten years. This movement was also stimulated by agronomic policies that withdrew credit preferences to small producers and decreased food prices due to foreign surpluses on the national market. Agro-chemical price increase, soil exhaustion, health hazards, and growing alternative markets motivated producers to convert to organic production. Although market penetration is different according to products, organic production of broccoli, cassava, and hearts of palms is today competitive. Banana production includes ethical trading with the UK and ECO-OK bananas (ecologically sound production scheme) that are sold without premium. Recently, the Ministry of Agriculture and Cattle Raising has created a National Programme for Organic Agriculture. The Government objective is to develop a national strategy for

organic agriculture (and thus, a suitable policy framework) to encourage the sector growth with a view to use natural resources sustainably and improve the quality of life of farmers and consumers.

CONCLUSION

Organic agriculture has grown outside public support – and in some cases despite government antagonism. The willingness of farmers to experiment and of consumers to pay premiums on organic food represents a major private investment in the sector. IFOAM has been instrumental in nurturing the movement through voluntary standards.

Legislations are nowadays formulated in many developing countries to facilitate exports of organic products to northern countries that have strict organic legislations. Technical barriers to trade are feared. Lucrative markets and high demand for organic food do however stimulate government efforts to promote organic trade. Much needs to be done in establishing conditions that give equal opportunities for producers and equivalency among different national standards.

The focus on certified organic products (and attendant costs and risks) has distracted attention on this system's potential to contribute to local food security, especially in low-potential areas in developing countries. Market-driven organic agricultural policies need to be complemented with organic agriculture policies that target local food security.

For both certified organic agriculture and non-market organic production, the major benefit to be derived from government and international organizational support is from adequate research and education. This would entail a shift of capital investments from hard to soft technologies - that is, from agricultural inputs (private goods) to knowledge building (a public good). This is a major challenge.