

Organic Production, Organic Food and the Role of Agricultural policy

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1. Introduction

Organic agriculture is one of several approaches to sustainable agriculture and many of the techniques used (e.g. intercropping, rotation of crops, double-digging, mulching, integration of crops and livestock) are practiced under various agricultural systems. It is a holistic production management system which promotes and enhances agro-ecosystem health, including biodiversity, biological cycles, and soil biological activity. Also, it emphasises the use of management practices in preference to the use of off-farm inputs, taking into account that regional conditions require locally adapted systems. This is accomplished by using, where possible, agronomic, biological, and mechanical methods, as opposed to using synthetic materials, to fulfil any specific function within the system. What makes organic agriculture unique, as regulated under various laws and certification programmes, is that: (1) almost all synthetic inputs are prohibited, and (2) 'soil building' crop rotations are mandated.

The concept of organic agriculture has been developed in the UK since the 1930s and certified organic produce has been available since the early 1970s. Organic standards apply to both crop and animal production and also to the production of processed foods. The principles of organic agriculture are wide ranging and include concerns for safe food production, for the environment, for animal welfare and for issues of social justice. Organics and sustainability are also closely linked. Many of the goals of sustainable

Abstract

This paper is a synthesis of the literature on the principles of organic agriculture. These principles include concerns for organic products and organic foods, for the environment and social justice issues. Also, this paper examines the agricultural policy for organic farming and its role on the development of production, markets and consumption. In recent years there has been a growing debate about organic production, organic foods and their links between the environment, agricultural economics and rural society. Debates reported in papers including this article conclude that organic production is the only farming system that could solve multiple problems such as environmental protection, employment, income generation, food quality. Agricultural policy has a profound influence on the overall organic production, food policy and environmental protection.

Résumé

Cet article est une synthèse de la littérature sur les principes de l'agriculture biologique. Ces principes incluent les produits et les aliments biologiques, tout comme le souci pour l'environnement et les problèmes de justice sociale. En outre, cet article examine la politique agricole pour l'agriculture biologique et son rôle pour le développement de la production, des marchés et de la consommation. Ces dernières années ont enregistré un débat croissant sur la production bio, les aliments biologiques et leur lien avec l'environnement, l'économie agricole et la société rurale. Tous les articles et les communications concernant ces thèmes concordent que la production biologique est le seul système agricole capable de résoudre les problèmes de protection de l'environnement, d'emploi, de revenu et de qualité des aliments. La politique agricole exerce une influence considérable sur la production biologique globale, sur la politique alimentaire et sur la protection environnementale.

agriculture correspond closely to those of organic agriculture, organic farming being one form of sustainable agriculture with a maximum reliance on self-regulating agro-ecosystems (Pretty, 1995). Lampkin (1994) uses the term sustainability in a wider sense, encompassing the conservation of non-renewable.

Organic food can be defined as the product of a farming system, which avoids the use of man-made fertilisers, pesticides, growth regulators and livestock feed additives.

Instead the system relies on crop rotation, animal and plant manures, some hand weeding and biological pest control.

According to many reports, organic food is a growing business with good long-term prospects (IFOAM, 2000, ITC, 1999). Despite the heightened attention that organic agriculture has attracted during the last decade, it still only accounts for a small proportion of overall agricultural land: an average of about 2% for the countries of the European Union, 0.1% for the United States of America and 1.34% for Canada. Notably, organic agriculture is also gaining importance in a number of developing countries including China, Egypt, India, Philippines, Sri Lanka and Uganda (FAO, 2000).

With growth in the organic food sector by far outstripping growth in the conventional food sectors, many studies and surveys have been carried out to investigate consumers' attitudes towards organic foods and hence the reason for the observed trend. These studies have revealed that, consumers' notions about the wholesomeness and safety of organic foods are fundamental in their choice of

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these foods although concern for environmental protection and animal welfare also provide primary motivation for this food choice. In the face of such consumer expectations, it is important to carefully consider the question of the quality and safety of organic foods in order to identify problems and issues that require attention (UNDP, 2000; Reavell, 1999; Darrington, 1999).

The organic trend is only one of several that are evident in today's food market. These trends include consumers' increasing demand for convenience foods, a broader range and variety of foods on the local market, and foods that are perceived as natural or minimally processed. There is also a growing interest in functional foods: foods with purported health-promoting benefits beyond their nutritive value. Finally, an issue of major relevance in the food sector is the use of genetically modified organisms (GMOs). These trends interact in different ways with the phenomenon of organic foods and organic agriculture.

The role of agricultural policy for the production of organic foods is multiple and aims to many objectives: income generation, natural resources conservation, food self-reliance and rural development - but with different levels of emphasis. For example, 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 for organic agriculture is income generation through the promotion of certified organic food. Also, 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 (FAO, 2000a).

The aims of this paper are two: first it presents an overview of definitions and characteristics that are related to the organic production and its use as food, and second it attempts to determine the role of agricultural policy on production growth of organic foods. These two aims are mainly focused on EU's organic agriculture and related policies without ignoring the international trends on this point.

2. Definition and Dimensions of Organic Production

2.1. Definition of "Organic Product"

Organic agriculture is one among the broad spectrum of production methods that are supportive of the environment. Organic production systems are based on specific and precise standards of production, aiming at achieving agro-ecosystems, which are socially and ecologically sustainable. It is based on minimising the use of external in-

puts, avoiding the use of synthetic fertilisers and pesticides. So, "Organic" is a labeling term that denotes products that have been produced in accordance with organic standards throughout production, handling, processing and marketing stages, and certified by a duly constituted certification body or authority. The "organic" label is therefore a process claim rather than a product claim. It should not necessarily be interpreted to mean that the foods produced are healthier, safer, or "all natural." It simply means the product follows the defined standard of production and handling, although surveys indicate that consumers consider the "organic" label as an indication of purity and careful handling. "Organic" standard will not exempt producers and processors from compliance with general regulatory requirements, such as food safety regulations, pesticide registrations, general food and nutrition labeling rules, etc (FAO, 2000b).

The basic rules of organic production are that natural inputs are approved and synthetic inputs are prohibited. But there are exceptions in both cases. Certain natural inputs determined by the various certification programmes to be harmful to human health or the environment are prohibited. As well, certain synthetic inputs determined to be essential and consistent with organic farming philosophy are allowed (e.g. insect pheromones). Many certification programmes require additional environmental protection measures in addition to these two requirements. While many farmers in the developing world do not use synthetic inputs, this alone is not sufficient to classify their operations as organic.

"Organic food" can be defined as the product of a farming system which avoids the use of man-made fertilisers, pesticides, growth regulators and livestock feed additives. Instead the system relies on crop rotation, animal and plant manures, some hand weeding and biological pest control. Organic food can never be defined as pesticide free. Organic certification schemes and regulations specify in detail how food must be produced, processed and packaged to qualify for the description 'organic'. However the possible presence of pesticide residues from previous land use means that low levels of pesticides can occasionally be found in certified organic food. Organic regulations also specify the organic processed foods into two categories, depending on the proportion of organic ingredients present: the first includes food containing a minimum of 95% organic ingredients by weight. This food can be labeled as Organic. The second category includes food containing 70 - 95% organic ingredients by weight. This food can be labelled 'Made with Organic Ingredients'.

2.2. The main dimensions of Organic Production

Within the definitions outlined above, organic production can be considered as a process in which the demands for its outputs — food, fiber and other services — are met

from farming practices that are economically efficient, environmentally friendly, and socially acceptable. This definition requires some elaboration.

The economic dimension concerns the ability to maintain sufficient potential production capacity to meet current and future demands for agriculture and food through using resources efficiently (producing the maximum output from a given set of inputs). It means that the farm sector is able to respond to changing consumer demands and harness technological developments. The future demand for agricultural products is uncertain, but the main underlying forces suggest that agricultural production would need to double by 2030 (Legg, 2000). Also, the demand for organic products has created new export opportunities for the developing world. While some consumers express a preference for locally grown organic foods, the demand for a variety of foods year-round makes it impossible for any country to source organic food entirely within its own borders. As a result, many developing countries have begun to export organic products successfully. Typically, organic exports are sold at impressive premiums, often at prices 20 percent higher than identical products produced on non-organic farms. The ultimate profitability of organic farm varies, however, and few studies have assessed the long-term potential for such market premiums. Nevertheless, under the right circumstances the market returns from organic agriculture can potentially contribute to local food security by increasing family incomes. Entering this lucrative market is not easy, however. Farmers are denied access to developed country organic markets for two to three years after beginning organic management since such countries will not certify land and livestock as organic before that time, arguing that it is necessary for the purging of chemical residues (Lampkin, 1999). Therefore, the economic dimension of organic production 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 through organic production is achieved by promoting economic self-reliance and by saving on external input costs (e.g. pesticides, fertilisers).

The environmental dimension concerns the ability to maintain sufficient natural resources, especially land and water. On the one hand, agriculture can cause water pollution, soil erosion and acidification, greenhouse gas emissions, and lead to loss of habitat, biodiversity and landscape features. On the other, agriculture can contribute to land conservation and flood control, provide carbon sinks, and maintain habitat, biodiversity and landscapes. Many of the effects are site specific, dependent on the farming practices adopted in relation to site-specific agro-ecological conditions. Properly managed organic farming reduces or eliminates water pollution and helps conserve

water and soil on the farm (although improper use of manure can seriously pollute water). A few developed countries compel or subsidise farmers to use organic techniques as a solution to water pollution problems (e.g. Germany, France).

Organic farmers rely on natural pest controls rather than synthetic pesticides which, when misused, are known to kill beneficial organisms (e.g. natural parasites of pests, bees, and earthworms), cause pest resistance, and often pollute water and land. Also, organic farmers aim to make the maximum use of the recyclable fertility in on-farm crop residues either directly as compost and mulch or through livestock as farmyard manure. Eliminating the use of synthetic nitrogenous fertiliser greatly lowers the risks of nitrogen contamination of water. Crop rotation is a widely used method of fertility maintenance and pest and disease control, which is used in large- and small-scale farming in both developed and developing countries, especially under intensification. Natural and organic fertilisers from outside the farm are used, such as rock phosphate, potash, seaweed, slaughterhouse by-products, ground limestone, wood-ash. While most certification programmes prohibit the use of sewage sludge and night soil they are still used in some places. Crop rotations encourage a diversity of food crops, fodder and under-utilised plants; this, in addition to improving overall farm production and fertility, may assist the on-farm conservation of plant genetic resources.

The social dimension concerns the ability to maintain "socially acceptable equity" in the distribution of incomes (within the agricultural sector and between agriculture and the rest of the economy), "fair" prices of food paid to producers and by consumers, and balance in employment opportunities between rural and urban areas. Most studies have found that organic farming requires significantly greater labour input than conventional farms. In general they stated that organic farming is able to contribute to rural employment and incomes, and it may help to maintain full-time operation of smaller farm units (Marino and others, 1997; Padel and Lampkin, 1994). Therefore, the diversification of crops typically found on organic farms, with their different planting and harvesting schedules, may distribute labour demand more evenly throughout the year, which could help stabilise employment. The social dimension is not easy to quantify, and there is a strong element of subjectivity in issues of fairness, equity and trust, which have deep cultural roots and are closely entwined with social organisation.

2.3. Organic production in the EU

Overall, organic farming in the EU is still very much a minority activity: according to the Farm Structure Survey it was only in 1995 that the number of organic farms exceeded 1% of all farms, reaching 1.3% in 1997. But organic farms are significantly more common in Sweden (12%

of all farms), Austria (9%) and Finland (4%). However the situation is changing rapidly. For the first group of Member States, - Greece, Spain, Italy, Austria, Finland and Sweden - the average annual growth rate has been 50% or more over the last ten years. These six countries represent nearly 70% of all organic farms in the European Community, although they account for only two thirds of all agricultural holdings. In these countries, most of the increase has been recorded since 1993. For Greece and Italy the 1992 CAP reform may have been an important influence, but Austria, Finland and Sweden were already well advanced before joining the EU. In Greece, the rate of increase in the number of organic farms, excluding livestock, has been impressive. Even so, at 3 000 in 1998, Greece represents only 2% of organic farms in the EU, although it has 11% of all EU agricultural holdings. Organic livestock products are not certified in Greece but, in general, holdings with livestock (specialised or mixed) represent only 25% of total holdings.

In Spain, the number of organic farms has been increasing quite rapidly since 1996. With 7 800 organic farms in 1998, Spain now represents 8% of organic farms, twice the figure of 1997, although still disproportionately low, considering that 17% of all EU agricultural holdings are in Spain. In contrast, Austria, Finland and Sweden, with 21 %, 5 % and 12% respectively of organic farms in the EU are well above the level of their share of all agricultural holdings.

For other Member States, organic farms remain a very minor phenomenon and the situation does not vary much between countries except Germany, where the increase has been more important up to 1995. The number of organic farms has since then decreased, bringing the total increase since 1995 closer to what has taken place in the other Member states. Although 1993 was a turning point for Belgium, the Netherlands and the United Kingdom, the results of measures implemented by these Member States were not as spectacular as those seen in the first group of countries. The number of farms alone does not give a clear picture of organic farming progress. For this it is necessary to look at the area under organic farming or in the process of converting to organic farming. The area devoted to organic farming varies from one country to another. Italy alone has 27% of the EU's organic land, followed by Germany 16%, Austria 12% and Sweden 9%. These four countries alone account for 64% of the total organic area, but only 30% of the total agricultural area.

The area under organic farming has grown even faster than the number of organic farms over the last ten years, at an average of 28% per year. In fact, the growth rate is well above 30% for all countries except the United Kingdom, France, Germany, Luxembourg and the Netherlands. In general, growth has tended to slow down in the last five years.

The figures on area under organic farming, or "in-

conversion", only reveal how much land is used. To complete the picture it is important to know what is produced on the land. Some statistics on this are available, but there are no official reporting requirements for such data, and availability and quality varies considerably between countries. Given the interest in following progress in this topic, the Council has decided to gather more detailed information in the near future.

2.4. Organic food consumption

Consumers' demand for organically produced food product is on the rise worldwide, providing new market opportunities for farmers and businesses in developing and developed countries. Breaking into this lucrative market is not easy, however. Farmers switching to organic agriculture currently have to wait two to three years before developed countries will accept their produce as organic. Also, farmers seeking to sell their products must hire an organic certification organization to inspect and confirm that their farms adhere to organic standards. This is because in 1992 measures were introduced at Community level under the agri-environmental scheme to support the conversion of holdings to organic production. This assistance helps farmers to overcome the disadvantages entailed during the three-year transition from traditional to organic production. During this conversion period, farmers normally experience a loss in income as their yields fall but their produce cannot be sold as organic, which commands a higher price.

Organic farming is currently one of the most dynamic sectors in the EU farm sector. The percentage of organic produce sold in the EU now accounts for 3% of food sold, up from 1% in 1992. Especially, in some EU's countries organic foods have come to represent a significant portion of the food system, like France 20 percent, Austria and Sweden 10 percent, Finland 5 percent while in Denmark, Germany and Italy the figure is near 3% (Riquois, 1997). Also, several developed countries are experiencing growth rates that exceed 20 percent annually (e.g. USA, Japan). Some of the developing countries have small domestic organic markets (e.g. Egypt) and a few have begun to seize the lucrative export opportunities presented by organic agriculture (e.g. exports of Mexican coffee, Ugandan cotton).

Organic food sales in the major European markets (Denmark, France, Sweden, Switzerland and the United Kingdom) are predominantly handled by supermarkets, except in Germany and the Netherlands, and are dominated by dairy products, fresh fruits and vegetables, cereals and cereal-based products. However, the secondary processing market is growing since consumers are increasingly looking for an assortment of processed foods similar to that available from conventional production. This has led to the entry of mainstream manufacturers rather than new specialist processors, which are adding organic pro-

ducts to their factory production lines.

The development of the organic sector depends not just on increased organic production, but also on appropriate processing and marketing. Grants available to improve the processing and marketing of agricultural products and those, which provide training in the agri-food sector, apply also to the organic and non-organic sectors.

3. Agricultural Policies for Organic Production

The environmental and economic benefits of organic agriculture have captured the attention of several countries. However, only a small number have enacted policies to assist the organic sector. Most assistance has been developed in the private sector. This private sector infrastructure is not only recognised by countries, but also encouraged.

In developed countries, farmers' and consumers' demand for environmental and health quality created the organic agriculture movement. In the European Union (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, all measures for national organic production are based on EU's Regulations No 2092/91 and 2078/92*. Also, active government policy not only supports organic farmers but also (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 agricultural sector.

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.

EU legislation on production and labeling standards for organic produce has applied to the crop sector since 1992. In 1999, the scope of Council Regulation 2092/91 was extended by the Regulation (EC) No 1804/99 to include li-

vestock products. It covers production, inspection and labeling. The aim is to provide consumers with clear and accurate information and to guarantee the integrity of the goods they buy.

3.1 Focal Points of Agricultural Policy

Present agricultural policy on organic production usually has multiple objectives. The main of these objectives may be income generation, natural resources conservation, food self-reliance and rural development. But each country gives different levels of emphasis to any objective.

Organic production generates income through international exports or by saving production costs, mainly for developing countries. In particular, countries with small economies rely on a small range of commodities many of which having suffered from a long run decline in real world market prices. Organic production offers a specialised market and an opportunity to diversify into new commodities that have a high demand and interesting world market prices. So, the agricultural policy objective of export promotion of organic products is also driven by certain country search for a place on world markets. For developed countries (Western Europe, North America, Japan) income generation comes from higher prices, job creation due to a higher labour demand and public assistance for organic products. However, in this case agricultural policy will have to ensure specific measures in order to protect this income, especially in conversion years and to pay more attention to processing and marketing problems.

Agricultural policy concern about the environment has led to increased demands for environmentally beneficial agricultural production methods, such as integrated production, traditional low-input farming and organic farming. In particular, public attention has focused on organic farming as it provides a combination of environmental, social and economic effects. Its main environmental benefits, particularly compared with intensive conventional farming, accrue to the sustainable rotation of land use and to the absence of synthetic pesticides, leading to positive environmental impacts. e.g. on biodiversity. Also, in many parts of the EU, serious environmental concerns have been expressed at the level of abstraction and pollution of water by agriculture for irrigation, mainly in Mediterranean countries. Where usage exceeds the rate of replenishment, the environmental consequences can be serious. Namely, these can involve, e.g. salinisation by seawater invading the underground supplies, and loss of biodiversity resulting from changes in flow of watercourses. Irrigation can result in water pollution because of an increased concentration of pesticides and nutrients in runoff water. In addition, even greater resources are needed to abstract the water from deeper wells. Therefore,

concerning organic production and its developments, policy makers must have in mind water quantity and quality in all regions in the EU.

Conventional agriculture tends to be unaffordable and unsuitable for resource-poor small holders. It requires inputs that are outside their reach. 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, consistent efforts to enhance farmers' skills in managing resources and maximising 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.

3.2. The Role of Agricultural Policy

The interest in organic agriculture in developed and developing countries is growing because it requires less financial inputs and places more reliance on the natural and human resources available. Agricultural policies have an important role to play in facilitating organic agriculture. Such policies that can contribute to organic agriculture are those which have the potential to contribute to ensuring a financially viable sector.

Agricultural policy reform needs to be complemented with well-targeted measures to reflect the site specificity of agri-environmental conditions, and to take account of the environmental and social dimensions of organic agriculture in the signals and information facing farmers. Policy reforms reducing output- and input-linked subsidies have already started to lower the incentive for some farmers operating on environmentally fragile land, and to encourage more environmentally friendly farm practices, including reducing applications of farm chemicals. Reforms have at the same time started to shift support towards payments targeted to environmental objectives, often through cross-compliance conditions, which make support payments conditional upon undertaking specific actions, such as meeting environmental conditions.

The suitability of an agricultural system depends on its

profitability, if that concept includes all aspects, which affect farmers' welfare. For example, low return of a marketable crop as compared with another farming system may mean very little if inputs are also low, or if the farmer can harvest other products which can be grown simultaneously in the one system, but not in the other. In addition, relative incomes can change drastically with changing input or output prices. In developed countries, the financial cost of inputs (excluding labour) on organic farms can be lower than on many non-organic farms, although the magnitude differs between enterprises and countries. Also, the legal transition to organic agriculture takes two to three years during which products cannot be sold as organic. Initial loss of yields, extent to which inputs were used under the previous management system, and the state of ecosystem degradation are often constraints that can be easy to survive only if financial support is given to farmers. Hence, the degrees of support during transition, and sometimes in the first years following the transition period, are important factors in farm economics. When organic agriculture performance on the environment is rewarded (e.g. through support to conversion), organic agriculture is as profitable as conventional agriculture. At this point and according to the above mentioned statement, the role of agricultural policy is to ensure the incomes of farmers under these changes and with domination of uncertainty.

Reliable market information, quantity and regularity of supply, and comparative advantages are key to tapping market opportunities. Output prices are subject to quantity of supply and consumers' willingness to pay premiums for organic products (often at prices 20 percent higher than conventional products). Entering lucrative markets entails inspection, certification and labeling of produce, the cost of which being somewhat expensive. Factors such as farm size, volume of production, and efficiency (or availability) of certification organisations determine inspection costs. Often, small farmers cannot afford certification costs, and care should be taken for not marginalising small producers. Agricultural policies that support research, to resolve production constraints and conversion and certification costs, with a view to improving supply of organic production are the appropriate measures to maximise organic farming success in a country.

Consumers' demand in developed countries for organically produced food and sometimes-impressive premiums provide new export opportunities for farmers of the developing world. Returns from organic agriculture have the potential, under the right circumstances, to contribute to local food security by increasing family incomes. Organic agriculture can contribute to local food security in several ways. Organic farmers do not incur high initial expenses so less money is borrowed. Synthetic inputs, unaffordable to an increasing number of resource-poor far-

mers due to decreased subsidies and the need for foreign currency, are not used. Organic soil improvement may be the only economically sound system for resource-poor, small-scale farmers. This characteristic of the production process on organic farms means that organic farmers are less dependent on external inputs (e.g. fertilisers, credit), over which they may have little control, thereby increasing local food security. So, favourable policies and institutional structures are important incentives to the use of locally available inputs. This kind of policies encourages and assists producers to respond to the growing demand for organic food and to the control of non-appropriate practices.

Engaging in organic production means experimenting new techniques, introducing different management of labour time, investing efforts in different management of space, adapting and refining solutions to change, comparing different options with farmers that have similar conditions, and making appropriate choices. This can only be achieved through farmers' participation in research and its application. This on-farm research component can support rural communities, and generate new knowledge that will benefit all farmers. Consistent labour needs, combined with the enhanced capacity of the land and protection of water associated with organic agriculture, may encourage people to permanently locate and thus reinvigorate rural communities. The establishment of co-operation between farmers is instrumental in helping farmers to become a stronger and more independent partner in the agro-business environment. In addition, providing a critical mass for renewed rural community structures sets an end to the isolation of farmers, thus increasing the viability of rural life. Most importantly, various forms of co-operation within the food chain are necessary to overcome the gap between farmers and consumers.

Finally, trade liberalisation is one of the main elements of agricultural policy reform, as it is a necessary condition to improve organic product circulation in world markets and the allocation of resources on an international scale. Under conditions of excess demand for organic products, there should be good markets for production from both developed and developing countries. As there are traditional systems that do not use agro-chemicals and do maintain soil fertility in sustainable ways, conversion to organic agriculture may be easier, and require less investment than for farmers in countries with highly intensive agriculture. Also, the fact that organic farming tends to be labour intensive may give a comparative advantage to developing countries where labour costs are relatively lower than in developed countries. Nevertheless, as producers and traders are very much aware, there are significant constraints on the profitable production, processing and marketing of organic products. Achieving and maintaining the critical quality requirements of the major markets is a significant constraint. This indeed proves highly

problematic for many developing countries in tropical regions where adverse climate can render storage and transport of perishable organic foods difficult and costly. Inadequate cool storage in food chains has long limited the exports of many fruits and vegetables from these countries. These difficulties may become even more felt in the long run, as the price premium for organic products is not likely to remain at the currently high level when supply rises and catches up with demand. Prices could be expected to decline under such conditions. Consequently, at this point, each country, but especially exporting countries has to establish organic agricultural policies to ensure a number of key conditions in order to operate successfully a competitive international market. Such conditions may be quality standards in organic products and in the food industry. These standards are to ensure that products are free of undesirable microorganisms, insects, pesticides or potentially toxic additives. They may even consider processing conditions to ensure that foods are not contaminated or unduly damaged. Few of us would argue the importance of standards genuinely related to food product safety. Packaging standards that ensure safe transportation and standards of identity that are useful in the market.

4. Conclusion

This paper has outlined the relationships between organic production and organic food from an economic and social perspective, with a particular emphasis on the role of agricultural policy. It has not considered the empirical evidence on organic production, which is the aim of much of the work in the literature and elsewhere. It is attempted to contribute to the debate amongst policy makers, the farming sector, environmental groups, and the public in general.

In conclusion it might be useful to briefly highlight three points. First, the past can be viewed as largely successful process in achieving the organic production goal to meet organic food demands. But the distribution of organic production and food consumption has been very unbalanced at the global level. Agricultural policies in many countries lead to distortions of the world markets. One of the most promising avenues for governments to pursue the goals of organic agriculture is through providing or facilitating research, information, advice and training to farmers. Increasingly these functions are focusing on the "public good" aspects, in particular on improving quality in organic products. Also, rising agricultural productivity is the driving force in increasing organic production, which will have effects like increase in consumption, in labour employed, in farmers' income and as well as the enhancement of some environmental benefits.

Second, the prospects for the future are potentially encouraging with regard to increasing production and

consumption of organic foods. The consensus of opinion is that the resources are available around the world or in specific countries to produce sufficient agricultural output of organic products to meet expected demands for food. But the questions of distribution remain. In the absence of markets, another major problem concerns identifying and transmitting, by policy or administrative means, the demand for organic foods. The supply of organic products and the level of demand are usually expressed through the political process, surveys of public opinion, pressure from non-governmental organisations, and the media. As with any other scarce output, the level, type and location may not be appropriate if the incentives do not closely reflect the public demand. In principle, what is required is that the farmer is rewarded with the incremental cost of producing organic products that are demanded and that farmers will adjust their behaviour in order to maximise their revenues.

Third, policies have an important role to play in facilitating organic agriculture. Agricultural policy reform needs to be complemented with well-targeted measures to reflect the site specificity of agri-environmental conditions, and to take account of the environmental and social dimensions of organic production in agriculture in the signals and information facing farmers. Ultimately, the aim should be to engage the farmers' own self interest in ensuring safe and qualitative organic products that is crucial.

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