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CHANGING CONSUMPTION AND PRODUCTION PATTERNS:

ORGANIC AGRICULTURE

BACKGROUND PAPER NO. 4

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CONTENTS

INTRODUCTION

1. This background paper was prepared by the Division for Sustainable Development to support the work of the Commission on Sustainable Development in its consideration of agriculture at its eighth session, in 2000. It was also prepared as part of the Commission's work programme on changing consumption and production patterns, which was identified as an over-riding issue for the period 1998-2002.

2. The work programme on changing consumption and production patterns was adopted by the Commission in 1995 and confirmed and updated in the Programme for the Further Implementation of Agenda 21, adopted by the General Assembly at its 19th special session, in 1997. That programme includes studies of trends in consumption and production patterns and assessments of the impacts on developing countries of changes in consumption and production in developed countries.

3. Organically produced food represents a small but rapidly growing share of the market. Though organic farming is not likely to become a dominant agricultural production method in the near future, it is one approach to sustainable agriculture and may offer lessons for more conventional approaches.

4. This background paper focuses on three issues: (i) the rapid growth in the 1990s of consumer demand for organic products in developed countries; (ii) the implications of organic farming for sustainable development, and in particular the environmental benefits and health issues relating to organic farming; and (iii) export opportunities for developing countries arising from the growing demand for organic food in developed countries, and how developing countries can benefit from those opportunities. Finally, the study offers some policy options relating to organic farming and sustainable agriculture.

5. This paper follows the publication, in 1997, of *Changing Consumption and Production Patterns: Unlocking Trade Opportunities*,[1] also as part of the work programme on changing consumption and production patterns. That publication covered a wider range of opportunities for developing countries arising from changing consumption patterns in developed countries, including manufactured products, tourism, fair trade programmes, organic agriculture, and forest products. It included ten case studies illustrating how developing countries can take advantage of export opportunities, including examples of fair trade exports from coffee cooperatives in Costa Rica, organic fruit from Chile, and organic cotton from cooperatives in Uganda. The present background paper complements that publication by examining in more detail the trends and opportunities in organic agriculture.

I. STANDARDS FOR ORGANIC AGRICULTURE

6. There are a number of definitions of organic agriculture, most of which have certain elements in common. According to the International Federation of Organic Agriculture Movements (IFOAM):

> Organic agriculture includes all agricultural systems that promote the environmentally, socially and economically sound production of food and fibers. These systems take local soil fertility as a key to successful production. By respecting the natural capacity of plants, animals and the landscape, it aims to optimize quality in all aspects of agriculture and the environment. Organic agriculture dramatically reduces external inputs by refraining from the use of chemo-synthetic fertilizers, pesticides and pharmaceuticals. Instead it allows the powerful laws of nature to increase both agricultural yields and disease resistance. (http://www.ifoam.org)

7. The United States Department of Agriculture (USDA) defines "an organically produced agricultural product" in the Federal Organic Foods Production Act of 1990 (Section 6504: National Standards for Organic Production) as meeting the following three criteria:

> The product shall: (1) have been produced and handled without the use of synthetic chemicals, except as otherwise provided in this chapter; (2) except as otherwise provided in this chapter and excluding livestock, not be produced on land to which any prohibited substances, including synthetic chemicals, have been applied during the 3 years immediately preceding the harvest of the agricultural products; and (3) be produced and handled in compliance with an organic plan agreed to by the producer and handler of such product and the certifying agent.

In addition, the Organic Plan (section 6513) encourages protection of soil fertility, primarily through the management of the organic content of the soil through proper tillage, crop rotation, and manuring. (http://www.ams.usda.gov/nop/orgact.htm)

8. The United Kingdom Register of Organic Food Standards (UKROFS) states that "organic production systems are designed to produce optimum quantities of food of high nutritional quality by using management practices which aim to avoid the use of agro-chemical inputs and which minimize damage to the environment and wildlife." It lists a set of principles for achieving those goals.[2]

9. European Union Council Regulation 2092/91 sets standards and regulations for production and labelling of organic products within the 15 countries of the Union. Although the Regulation

does not provide a definition of organic agriculture, it sets minimum standards for products to be called “organic”. The Preamble states that, “organic production methods entail significant restrictions on the use of fertilizers and pesticides which may have detrimental effects on the environment or result in the presence of residues in agricultural produce”. Article 6 states that “organic farming involves varied cultivation practices and limited use of non-synthetic fertilizers and conditioners of low solubility”. Annex I to the Regulation defines principles of organic production at the farm level, and Annex II lists materials authorized for use in soil conditioning, fertilization and plant protection. Annex IV lists requirements for processed foods.

10. As indicated by these examples, organic agriculture is generally defined as a production system that avoids or reduces external inputs, particularly synthetic chemicals, and takes an integrated approach to soil fertility and environmental protection.

11. Reflecting increased interest in an internationally agreed definition, the FAO/WHO Codex Alimentarius Commission adopted "Guidelines for the Production, Processing, Labelling and Marketing of Organically Produced Foods" in June 1999 (the Codex Guidelines).

12. According to the Codex Guidelines:

> Organic agriculture [refers to] holistic production management systems which promote and enhance agroecosystem health, including biodiversity, biological cycles, and soil biological activity. It emphasizes 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, cultural, biological and mechanical methods, as opposed to using synthetic materials, to fulfill any specific function within the system.

13. The Codex Guidelines further specify that:

> An organic production system is designed to:
>
> (a) Enhance biological diversity within the whole system;
>
> (b) Increase soil biological activity;
>
> (c) Maintain long-term soil fertility;
>
> (d) Recycle wastes of plant and animal origin in order to return nutrients to the land, thus minimizing the use of non-renewable resources;
>
> (e) Rely on renewable resources in locally organized agricultural systems;
>
> (f) Promote the healthy use of soil, water and air as well as minimize all forms of pollution thereto that may result from agricultural practices;

(g) Handle agricultural products with emphasis on careful processing methods in order to maintain the organic integrity and vital qualities of the product at all stages; and

(h) Become established on any existing farm through a period of conversion, the appropriate length of which is determined by site-specific factors such as the history of the land, and type of crops and livestock to be produced.

14. In many countries there are programmes for certifying that products have been produced according to standards for organic production, and those products can then be labelled and marketed as “organic” or “certified organic”. Certification systems are described in chapter V below.

15. There are a number of other farming systems that involve the reduction or elimination of chemical inputs. Biodynamic agriculture, for example, in addition to eliminating chemical inputs, calls for mixed farming (animal husbandry and crop cultivation) and uses specific combinations of plant, animal and mineral inputs, with farming activities times according to cosmic rhythms.

16. Other approaches that reduce but do not eliminate chemical inputs include “low external input sustainable agriculture” (LEISA), integrated pest management (IPM), integrated nutrient management (INM) and integrated weed management (IWM).

II. TRENDS IN PRODUCTION AND DISTRIBUTION

17. Since most official agricultural and trade statistics do not separate organic products from conventional agricultural products, there are few precise or official data on production and consumption of organic products. However, available information indicates that organic food products currently represent one to two per cent of the total food sales and that demand is increasing rapidly.

18. A comprehensive and up-to-date report on world production and consumption of organic products is the 1999 publication, "Organic Food and Beverages: World Supply and Major European Markets", published by the International Trade Centre UNCTAD/WTO (ITC). That study is part of a project to assist developing countries to improve their export performance in agricultural products. It includes a detailed market survey, focusing on European markets, in particular on Denmark, France, Germany, the Netherlands, Sweden, Switzerland and the United Kingdom, with summary coverage of markets in the United States and Japan. Much of the information in the present report is drawn from that study.

19. Information on demand for organic products in various countries is also available in the Attaché Reports of the United States Department of Agriculture, which occasionally examine markets for organic products. Currently, reports on markets for organic products cover Argentina, Austria, Belgium, Brazil, Canada, China (including Taiwan province), Denmark, France, Germany, Hungary, Italy, Japan, Hong Kong, the Netherlands, New Zealand, Mexico, Poland, Slovakia, Spain, Sweden, and Switzerland.

20. The United Nations Expert Group on International Economic and Social Classification recommended in 1999 that, for the International Standard Industrial Classification (ISIC) used in economic and trade statistics, organic farming should be considered as a different agricultural activity from farming using chemicals. This recommendation is being submitted for consideration by the United Nations Statistical Commission as part of the revision of the ISIC classification system. This could promote the improvement of data on production and trade of organic products.

1. Sales of organic food

21. World demand for organic products is dominated by Western Europe, the United States and Japan. Retail sales in these three major markets are estimated at $10.5 billion in 1997, and the preliminary estimate for 1998 is around $13 billion. The ITC estimates that sales in these markets will grow to around $20 billion in 2000, a growth rate of about 25 per cent per year, and will reach 5 to 10 per cent of total food sales in some countries by 2005. (See table below) This rapid growth in demand for organic products contrasts with slow growth or stagnation in overall food sales in those markets.

22. The Western European market for organic food is estimated at about $5.3 billion in 1997, about half of the total for the three markets. Germany is the largest market in Europe, followed by Italy, France and the United Kingdom. As a share of total food sales, organic sales are largest in Denmark, Switzerland and Austria, with shares of 2 to 2.5 per cent. The highest growth rates, 25 to 40 per cent, are expected in Denmark, Sweden and the United Kingdom. In Southern and Eastern Europe, consumption of organic products is relatively low, and most production is for export to Northern and Western Europe.

Sales of organic foods (1997)

Country	**Total Sales**	**Market Share (%)**	Average Annual Growth **Rate (%)**
TOTAL	$10,500 M		20-30
Western Europe	$5,300 M		
Germany	$1,800 M	1.2	10-15
Italy	$750 M	0.6	20
France	$720 M	0.5	20
United Kingdom	$450 M	0.4	25-35
Netherlands	$350 M	1.0	10-15
Switzerland	$350 M	2.0	20-30
Denmark	$300 M	2.5	30-40
Austria	$225 M	2.0	10-15
Sweden	$110 M	0.6	30-40
Others	$200 M		
United States	$4,200 M	1.25	20-30
Japan	$1,000 M		35

Source: Preliminary estimates from ITC

23. The growth of organic farming in Europe in the 1990s is due in part to European Union regulations and policies providing financial support to national governments for sustainable agriculture and rural development, since the 1980s. In the 1990s, financial support was provided specifically for converting to and maintaining organic practices, in view of the environmental benefits of organic farming. In Austria, Denmark and the Netherlands, farmers receive payments based on the area under organic farming, and assistance is provided in developing marketing systems and providing producer and consumer advisory services. In Austria, where 10 per cent of the agricultural land is farmed organically, particularly pastures for dairy production, government support is intended both to promote ecologically sound farming and to maintain the economic viability of small farms in the face of foreign competition in conventional food products. Sweden, with 8 per cent of its agricultural land under organic management, has set an official target of 10 per cent by 2000 and 30 per cent by 2010. Denmark has set a target of 10 per cent of farmland by 2003.

24. Outside Europe, the United States is the largest market for organic products, with retail sales estimated at $4.2 billion in 1997, representing about 40 percent of the world market. The market is expected to grow at 20 per cent per year, to reach $8 billion in 2000. The share of organic products in total food sales was 1.25 per cent in 1997.

25. The third major market for organic products is Japan. Retail sales in 1997 were estimated at $1 billion, about 10 per cent of the world market, and are expected to grow to $2.5 billion in 2000, a growth rate of about 35 per cent.

26. There is some demand for organic products in a few developing countries, including Argentina, Egypt and South Africa, but demand is low and is growing more slowly than in the developed countries.

2. Product availability

27. There is a wide range of organic products available on the market. The most common plant products are fruits and vegetables, including potatoes, carrots, onions and tomatoes. Certain fruits are also available as dried fruit products, including raisins, dates, apricots, apples, figs, and bananas. Organic cereals on the market include wheat, rice, rye, barley, oats, maize, millet, buckwheat, spelt, quinoa and amaranth. Organic beverages, including coffee, tea and cocoa, are widely available, with coffee as one of the major organic products exported by developing countries. Organic oils include sunflower, safflower, pumpkin, sesame, flax, coconut, olive and soybean oils. Herbs, spices and nuts are also available organically. Among animal products, organic dairy products, meat, eggs and honey are available, as are some organically farmed fish and shellfish.

28. While consumers of organic foods have generally focused on relatively unprocessed products, there is growing demand for processed products, including convenience foods and snacks. In order for processed food products to be labelled organic, according to the Codex Guidelines and other standards, at least 95 per cent of the ingredients, excluding salt and water, must be organic. Sugar and other sweeteners are produced from organic sources. Other processed organic products available include canned tomatoes, frozen vegetables, jams and marmalades, cereal products, baby food and wine.

29. Non-food organic agricultural products are also available, but are not examined in the present report. They include organic cotton, cut flowers, pot plants, hemp, jute, leather, sisal, wood and wood products, wool, and ingredients for cosmetics and cleaning products.

3. Distribution

30. Organic foods are sold both through shops specializing in organic or health products and, increasingly, through supermarkets. In Austria, Denmark, Sweden, Switzerland and recently the United Kingdom, supermarkets are the main outlets to consumers, while in Germany, the Netherlands and the United States, specialist organic and health food shops are still the main consumer outlets. Most major supermarket chains now carry a range of organic food and beverages, and some have their own brands of organic products.

31. Until recently, the processing industry for organic food consisted largely of specialized firms concentrating in primary processing and packaging, with secondary processing into a limited range of manufactured food products. In recent years, however, many conventional food companies are establishing organic departments in response to the growing demand for organic processed and convenience foods. In Germany, the baby food market has come to be dominated by organic products. Certification of processed food products to be sold as organic requires not just that the ingredients be organic, but also that the processing meet established criteria.

32. In some European markets, catering and institutional use of organic foods has started, but is still small in scale. In Denmark, Germany, Italy, the Netherlands and Sweden, some local authorities are now requiring cafeterias in public institutions, such as schools, hospitals, homes for the elderly, universities and public office buildings, to offer organic selections, including coffee and tea and school milk. Restaurants specializing in organic foods are increasing in number, and some airlines and railways offer organic meals.

33. The distribution system for organic foods has been a major factor determining the growth of retail sales. The commitment of major supermarket chains to carrying a wide range of organic products has been an important factor in the rapid growth of sales in Austria, Denmark, Switzerland and the United Kingdom. As supermarkets expand the variety of organic products they carry, occasional purchasers of organic foods will increase the frequency and variety of organic purchases, and consumers not previously interested in organic farming will be exposed to organic products.

34. As sales grow as a result of wider availability of organic products, the increasing scale of production and more efficient distribution systems should reduce the costs of production and distribution, allowing price reductions that will further increase demand. Increased sales volumes also increase turnover and reduce spoilage, allowing price reductions. In some places, sales are limited by supply problems rather than demand, for example in the United Kingdom, which depends on imports for 70 per cent of its organic food supply.

35. Supermarkets are pushing their organic suppliers to improve the appearance of their products, to increase the reliability of supplies, and to reduce the price premiums for organic products. While prices for organic products in health food shops can be double the conventional price or more, supermarkets often limit the premium to 20 or 25 per cent. The movement of supermarkets into organic products is therefore pushing artisanal organic farmers and distributors to adopt more efficient techniques similar to those for conventional food products. Even in Germany and the Netherlands, where specialist organic shops remain the dominant outlets, these shops have tended to consolidate in recent years in order to meet increasing competition from supermarkets.

36. Another channel for distribution of organic foods is direct sales from farms and at organic markets. A small but growing marketing system is the organic food box subscription scheme, whereby a box of fresh, seasonal organic food is delivered weekly to each subscribing household. Germany has between 250 and 300 such schemes, primarily for fresh fruits and vegetables, and box schemes are also growing in popularity in the United Kingdom and the Netherlands. Several systems for ordering through the Internet have also started operation. In the United States and Canada, there are over 1000 "community supported agriculture" schemes involving groups of consumers who make a commitment to buy a certain quantity or share of produce from an organic farm, thus sharing the risks and benefits of organic production.

37. Fair trade organizations have become an important distribution channel for organic products in Europe, particularly in Germany, Switzerland and the Netherlands. While the primary concern of the fair trade movement is the social and economic situation of farmers and producers in developing countries rather than organic agriculture as such, the two movements are tending to converge in a common concern for sustainable development. Fair trade distribution is particularly important for bananas, cocoa, coffee, honey and tea. The fair trade market has enabled some producers in developing countries with more sustainable, but not fully organic or certified, practices to obtain a premium price for their products.

III. ENVIRONMENTAL IMPACTS

38. Organic farming practices improve soil fertility and structure, protect ground and surface water quality, and help preserve biological diversity. Through crop rotation, recycling of crop residues, and applications of organic manures and mulches, organic farming improves soil structure and encourages the development of soil micro-organisms.[3, 4] Organic farming also encourages earthworms, which improve soil structure and drainage, making soils less prone to erosion, and may help build soil fertility. Mixed and relay cropping provide a more continuous ground cover, protecting soil from erosion by rain and wind.

39. Biological pest control on organic farms relies on maintaining healthy populations of pest predators. Through crop rotation and diversity, pests and diseases can be reduced and biodiversity increased. A study by the British Trust for Ornithology found higher densities of all bird species studied on organic farms, and populations of skylarks, which had declined due to conventional agricultural changes, were double those on non-organic farms. The Institute for Organic Agriculture at the University of Bonn found that the average number of plant species almost doubled on organic farms, with some endangered species present only on organic farms. A Swiss study also found dramatic increases in soil biota on organic farms.[5] Mixed farming, with both livestock and crops, is particularly effective in providing a variety of habitats.

40. Properly managed organic farming reduces water pollution and helps conserve water. One study suggested that under organic, farming nitrate leaching to ground and surface water is one third less than under conventional farming, because synthetic nitrogenous fertilizers are not used. Another study found pollution of both air and water to be reduced on organic farms. Pollution of rivers, lakes and groundwater with pesticides and herbicides is also reduced since fewer such substances are used.[6]

41. Organic farming generally involves less overall fossil fuel consumption than conventional farming, largely because organic farming excludes synthetic nitrogenous fertilizers, which are very energy-intensive to manufacture.

IV. HEALTH ISSUES

42. Surveys indicate that health concerns are the primary reason that consumers choose organic products, and growing concern over food safety appears to be a major reason for the rapid growth in organic food sales in the 1990s.

43. A survey in Germany indicated that health concerns were the key influence on organic food buyers, followed by environmental concerns, and better nutrition and taste.[7] A survey in the United States showed that one-third of those surveyed buy organic foods for health reasons.[8] A study in the United Kingdom found that purchasers of organic products believe that "the absence of pesticide residues, enhanced levels of vitamins, and reduced levels of nitrate and sodium show a clear benefit in terms of human and animal health". The United Kingdom study notes, however, that there is no conclusive evidence that organically produced food is safer than conventionally produced food with respect to human health.[9] Organic products have lower levels of pesticides and other agro-chemical residues, but it is not clear that the low levels present on conventional products pose significant health risks. However, standards for residues and daily intake limits for pesticides and other agricultural inputs in food are regularly revised in light of new evidence on health impacts.

44. It appears that recent cases of food contamination, including BSE (bovine spongiform encephalopathy or “mad cow disease”), dioxin contamination, and pesticide residues, have contributed to the rapid growth in demand for organic food in the 1990s. There are also concerns over hormones (bovine somatotrophin) in dairy cows and antibiotics in animal feed. In some cases, consumers apparently consider the “organic” label not just an indicator of specifically organic production and processing methods, but more generally as an indication of purity and careful handling.

45. An emerging issue related to organic agriculture is concern about the environmental and health risks of genetically modified organisms. Although there is no clear scientific evidence that genetically modified organisms are harmful to human health or the environment, the rapid increase in demand for organic products is in part attributable to this concern. All existing organic standards exclude genetically modified organisms. For example, the IFOAM Basic Standards exclude all applications of genetic engineering on the basis of its inherent incompatibility with the principles and practice of organic agriculture. Similarly, the Codex Guidelines state that "All materials and/or the products produced from genetically engineered/modified organisms (GEO/GMO) are not compatible with the principles of organic production … and therefore are not accepted under these guidelines." Where there is no labeling requirement for genetically modified products, buying organic is a way to ensure avoidance of such products.[10]

46. With regard to animal health and welfare, there is evidence that the animal health control methods used in organic farming promote better animal health compared with conventional farming. Organic livestock production methods reduce the use of antibiotics without jeopardizing animal health, and thus reduce the generation of antibiotic-resistant pathogens.

V. CERTIFICATION AND REGULATION

1. Certification

47. Consumers who buy organic products often want assurance that the products they buy have in fact been grown and processed in accordance with organic standards. In the absence of legal standards or government regulation of organic production, certification has been done by private independent organizations or associations in accordance with their own standards. Even where legal definitions and regulations exist, private certification may provide assurance of standards that are more stringent than the official standards. At least 100 regional or national standards have been developed worldwide, mostly by private organizations.

48. Certification is done by inspection and certification bodies accredited by the association or agency responsible for the standards concerned. Producers and processors apply to the inspection and certification bodies, paying the costs of the inspection and certification process. Once they have been inspected and certified, their products can be labelled organic, or "certified organic", in accordance with the standards concerned. Continuing certification requires periodic inspection to ensure continuing conformity with the standards.

49. The International Federation of Organic Agriculture Movements (IFOAM), established in 1972 as an umbrella organization for national organic agriculture associations, established and regularly revises the international "IFOAM Basic Standards of Organic Agriculture and Food Processing" (currently the 1998 version). These standards have been translated into 19 languages and serve the Federation's 750 member organizations in 104 countries. Together with the European Union regulations on organic food products, these standards contributed to the formulation of the Codex Guidelines.

50. France was the first European country to adopt official regulations concerning organic farming in 1980, followed by Denmark in 1987. These have been superseded by the EU Regulation adopted in 1991.

51. Denmark and Finland have established fully government-run inspection and certification systems. Other EU countries, under the EU Regulation, and some non-EU countries have designated government agencies for the approval and supervision of private certification and inspection bodies. In other countries, certification and inspection bodies are approved and supervised by private organizations responsible for standards of organic agriculture.

2. Regulation

52. During the 1990s, organic standards have increasingly been embodied in public laws and regulations. Perhaps, the most detailed official regulation of organic products is that of the European Union under Council Regulation No. 2092/91 (1991) and its amendments. The EU Regulation applies to all unprocessed and processed food products from plants and sets conditions for labelling products as organic. The Regulation defines principles of organic production at the farm level, materials that are authorized for use, inspection requirements, and requirements for processed food. Under the Regulation, each EU member country has established a national system for inspection and certification, conducted by public or private bodies, or both. The European Commission publishes annually a list of bodies authorized by the various member countries to undertake inspection and certification in individual countries. In June 1999, EU regulations on organic animal products came into effect.

53. In the United States, the Federal Organic Food Production Act of 1990 created a National Organic Program (NOP) to establish national standards governing the marketing of organically produced products. According to the Act, the purpose of the standards would be to assure consumers that products labelled organic would meet consistent standards, and to facilitate interstate commerce in those products. In 1997, the Program issued a proposed set of standards for public comment. With Internet dissemination as well as conventional publication, the proposed rule attracted more than 275,000 comments. In response to the comments, the proposed rule was withdrawn and is currently undergoing revision. That Internet-based public rule-making project was the winner of a 1998 Government Technology Leadership Award for the innovative use of Information Technology in public service.

54. In the absence of national standards in the United States, some states have adopted their own legislation, with substantial differences between states, and other states have no legislation on organic production. Many organic products on the national market are labelled organic under the California Organic Foods Act of 1990.

55. In Canada, the National Standard of Canada for Organic Agriculture was adopted in June 1999 by the Canadian General Standards Board (http://www.pwgsc.gc.ca/cgsb). In Japan, the government announced in 1999 a set of proposed standards and third-party certification requirements to be implemented in April 2000.

56. It is likely that even with national standards and regulations, governments will allow private standards and certification schemes to continue, providing that they meet the national standards.

3. International harmonization

57. While national conditions and existing local systems may need to be reflected in national organic production standards, the increase in international trade in organic products makes harmonization of standards increasingly important.

58. In 1992, IFOAM established the IFOAM Accreditation Programme (IAP) to establish the equivalency of certification programmes in different countries. The IAP determines whether such national programmes meet IAP Criteria and the IFOAM Basic Standards. IAP is managed by the International Organic Accreditation Service (IOAS) under a licensing agreement with IFOAM.

59. A major achievement towards international harmonization was the adoption in 1999 of the Guidelines for the Production, Processing, Labelling and Marketing of Organically Produced Foods by the Commission on Food Labelling of the Codex Alimentarius Commission. The Codex Alimentarius Commission manages the Joint FAO/WHO Food Standards Programme,

which was established in 1962 in order to protect consumers from health hazards and deception, while at the same time facilitating international trade in food products. The Guidelines are not legally binding, but they provide internationally agreed principles that will promote harmonization of national standards with respect to production and marketing, inspection and labelling. The Commission, in the foreword to the Guidelines, states that:

- The guidelines are a useful instrument in assisting countries to develop national regimes regulating production, marketing and labelling of organic foods;
- The guidelines need regular improvement and updating in order to take into account technical progress and the experience with their implementation;
- The guidelines do not prejudice the implementation of more restrictive arrangements by member countries in order to maintain consumer credibility and prevent fraudulent practices, and to apply such rules to products from other countries on the basis of equivalency to such more restrictive provisions.

60. The new Codex Guidelines apply only to plants and plant products. The Committee on Food Labelling is developing standards for organic livestock products. The Committee on Food Import and Export Inspection and Certification Systems is developing guidelines that apply to all food, including organic food.

VI. EXPORT OPPORTUNITIES FOR DEVELOPING COUNTRIES

61. As noted above, to be marketed as organic, products must generally be certifiied by an accredited certifying organization as having been produced and processed in accordance with organic standards. More than 130 countries produce certified organic food and beverages in commercial quantities, including at least 65 developing countries and 15 least developed countries. Most of the production in developing countries is exported to developed countries. These exports include tropical products such as coffee, tea, cocoa, sugar, spices and tropical fruits, as well as fruits and vegetables imported into developed countries during the off-season, and other products for which production in the developed countries cannot keep up with the rapidly increasing demand.

62. In developing countries, much farming, particularly in the subsistence sector, is done without chemical inputs, but without being certified or marketed as organic and with no price premium. This situation offers opportunities for exports, although the cost of the necessary certification is a major obstacle. For small-scale farmers with small surpluses to sell, individual certification is generally not feasible. Cooperation through cooperatives or other associations can help overcome some of the obstacles. In Latin America, for example, groups of growers establish internal

control systems on the basis of which the group will be certified by a European or United States certification body.

63. In many countries in Africa, Asia and Latin America, NGOs are promoting organic farming techniques, without certification, to promote sustainable agriculture for subsistence or local consumption, without imported inputs. That production may provide a basis for subsequent development of certification and export.

64. In Africa, about half of the countries have no certified organic production, while most others have very limited amounts, almost entirely for export. There is significant organic production and export in Algeria, Egypt, Madagascar, Morocco, South Africa and Tunisia. Major exports, mostly to the European Union, are tropical fruits, herbs and spices, nuts, oils, vegetables and cotton.

65. In Asia, significant producers and exporters are China, India, the Philippines, the Republic of Korea, Sri Lanka and Turkey. Major products include cocoa, coffee, oils, herbs and spices, peanuts, rice, tea and vanilla, with exports to the European Union, the United States and Japan.

66. In Latin America, most countries have some certified organic production, mostly for export to Europe and the United States. Argentina has a significant domestic market for organic products as well as production for export, and the national control and certification system has been granted equivalency by the EU, the only developing-country system to have gained such recognition. Export products include sugar, coffee, tea, cocoa, fruits, grains, herbs and spices, nuts, oil seeds, cotton, wine, honey, and meat and dairy products.

67. The rapid growth of demand in the developed countries is likely to outpace growth in production in the short to medium term, due in part to the requirement for a conversion period, commonly of three years with no chemical inputs, before a field can be certified as organic.

68. The European Union regulations on organic products provide the products can be imported as organic providing that they are certified according to procedures equivalent to those of the Union. Five non-EU countries–Argentina, Australia, Hungary, Israel and Switzerland–are recognized by the Union as having equivalent national standards, so any certified organic product from those countries can be imported into any EU country. Products from other countries can be imported if the certification authorities of an EU country determine that the products have been produced and processed according to standards equivalent to the EU standards.

69. A number of European certification bodies have inspection offices in developing countries, including IMO of Switzerland, Ecocert of France, and SKAL of the Netherlands. In a few cases, national or regional certification bodies in developing countries are approved by certification authorities in an EU country as having standards equivalent to the EU standards. Biolatina SAC, for example, based in Peru and with inspection offices in Bolivia, Colombia and Nicaragua, is approved by Germany for imports into the EU. In Argentina, Argencert is recognized by the EU as providing certification that meets EU standards. In addition to providing inspection and certification services, European certification bodies have provided training in inspection and certification in developing countries.

70. For imports into the United States, the Organic Crop Improvement Association provides certification in a number of developing countries, in particular in Latin America and China. Farm Verified Organic Inc. and Quality Assurance International Organic Certification are also active in developing countries.

71. Export opportunities for developing countries also include special inputs required by organic agriculture, for example natural pesticides such as neem and pyrethrum, which are produced in tropical countries.

72. In addition to certification, exporters need to establish a relationship with an importer/distributor in the importing country. The producer or exporter should work closely with the importer to ensure reliable supplies to wholesalers and retailer with the characteristics desired by consumers in the importing country. Developing country exporters can obtain information and assistance in making such contacts from a number of international and national agencies and organizations concerned with organic agriculture and fair trade. In Germany, for example, the Protrade/GTZ import promotion organization initiated the Green Trade Net website (www.green-tradenet.de), which is now operated independently, to link developing country producers and exporters to German importers.

73. The FAO Committee on Agriculture, in 1999, noting the environmental and health benefits of organic agriculture and its contribution to the overall goals of sustainability, requested FAO to assist developing countries in gaining access to export markets by providing market and technical information and promoting capacity building. ITC also provides market information to developing countries to assist in developing exports of organic products. The 1999 ITC publication, “Organic Food and Beverages: World Supply and Major European Markets”, provides detailed information on market opportunities for developing countries and contacts in developed-country markets.

VII. CONCLUSIONS

1. National policies

74. With the increasing production and consumption of organic products, there is a growing need for public standards and regulations for organic products that consumers and producers can rely on and under which certification schemes can operate. The Codex Guidelines and the IFOAM standards can be a source of guidance for countries developing legal and regulatory systems.

75. In order to take into account the concerns of all groups in the preparation of such regulations, consultations can be undertaken with consumer organizations, organic farmers, environmental groups, food processors and distributors, and other concerned groups. A broadly participatory process will not only ensure that the resulting regulations meet the needs of all parties, but also provide a valuable opportunity to disseminate information and promote discussion of the benefits of organic farming. In order to revise the standards and regulations as necessary, it may be useful to establish a Standards Committee with the participation of representatives of relevant stakeholders. It is important that the deliberations of such a committee be kept transparent.

76. As a national policy framework, Denmark offers a good example. Since the introduction of the first organic legislation in 1987, it has been the Government's policy to promote organic agriculture. The Organic Foods Council, whose members are drawn from environment agencies, regulatory authorities, producers, consumers organizations and worker unions, has been instrumental in the development of organic agriculture. Established in 1987, the Council aims to encourage, monitor and assess the opportunities to develop Danish organic food production, to assess current advisory and research work, to formulate proposals for additional activities, and to comment on standards for the control of production, marketing, storage, transport, labelling, distribution and retailing of organic goods. It has contributed to the drafting of two action plans for the promotion of organic agriculture. Since 1991, the production and sales of organic products have been regulated by European Union Council Regulation 2092/91.

77. Developing countries interested in promoting exports of organic products may consider the establishment of national inspection and certification bodies and the establishment of equivalency between those standards and the standards of the importing markets. National certification systems could also promote the formation of organic cooperatives and other farmer associations to reduce the cost of certification to individual farmers and to facilitate relations with importers in developed country markets.

78. Consumers should be informed of the environmental impacts and human and animal health implications of organic and conventional production. Public authorities can promote research and dissemination of information on these questions.

79. In particular, further information is needed on the long-term impact of fertilizers, pesticides and herbicides on human health and the environment, including biological diversity. Attention should also be given to applying lessons learned from organic farming to conventional farming, in particular on how to reduce the dispersion of fertilizers, pesticides and herbicides that pollute groundwater, surface waters and the air.

2. International policies

80. To facilitate trade in organic products, standards should be harmonized internationally as much as possible and equivalencies established. This could be promoted through use of the Codex Guidelines in formulating and revising national standards. Arrangements for mutual recognition of national certification will reduce uncertainty regarding standards and labelling of imported organic products, protect the interests of consumers and producers, and facilitate international trade.

81. The work of the IFOAM Accreditation Programme (IAP) could be encouraged so as to establish the equivalence of national accreditation programmes on the basis of multilateral mutual recognition. Such international harmonization is particularly important for producers and exporters in developing countries, who may be exporting small quantities to a number of markets. Special efforts should be made to support the development of certification systems in developing countries and to facilitate the establishment of equivalency between those systems and those of the developed countries.

82. International organizations, particularly FAO and ITC, and developed-country agencies and organizations concerned with organic agriculture and fair trade could assist developing countries in developing organic agriculture, establishing national certification systems, and facilitating access to markets. Such assistance could include technical information on organic production and processing methods and standards, information on market opportunities, and capacity building.

NOTES:

1. *Changing Consumption and Production Patterns: Unlocking Trade Opportunities*, edited by Nick Robins and Sarah Roberts of the International Institute for Environment and Development for the United Nations, 1999.

2. UKROFS Standards for Organic Food Production: January 1999 edition, Chapter 2, Section 1, cited in *Organic Farming and the European Union*, Sixteenth Report, Select Committee on European Communities, House of Lords, United Kingdom, July 1999.

3. *Organic Farming and the European Union*, Sixteenth Report, Select Committee on European Communities, House of Lords, United Kingdom, July 1999.

4. "Organic Agriculture", document COAG/99/9, Committee on Agriculture, Food and Agriculture Organization, 1999. The analysis in this section is largely based on this document.

5. "The Relationship between Nature Conservation, Biodiversity and Organic Agriculture", Bernward Geier, J.A. McNeely, and S. Stolton, citing "Biodiversity on Organic Farms: Recent Comparative Research in Europe", S. Stolton. *Ecology & Farming*, 13, IFOAM, Germany, 1996.

6. These studies are cited in *Organic Farming and the European Union*, Sixteenth Report, Select Committee on European Communities, House of Lords, United Kingdom, July 1999.

7. Cited in "Organic Food and Beverages: World Supply and Major European Markets", International Trade Centre UNCTAD/WTO (ITC), Geneva, 1999.

8. "Shopping for Health 1999: The Growing Self-Care Movement", Food Marketing Institute, Washington, D.C., June 1999.

9. *Organic Farming and the European Union*, Sixteenth Report, Select Committee on European Communities, House of Lords, United Kingdom, July 1999.

10. The Cartagena Protocol on Biosafety under the Convention on Biological Diversity, concluded in January 2000, provides that internationally-traded living modified organisms (LMOs) intended for food, feed or processing are to be labelled as "may contain" LMOs. LMOs intended for introduction into the environment, such as seeds, are subject to advance informed agreement. The Protocol does not apply to products produced and consumed in one country.