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para la
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INTERNATIONAL CONFERENCE ON ORGANIC AGRICULTURE AND FOOD SECURITY

Rome, 3 – 5 May 2007

REPORT

I. INTRODUCTION

1. The International Conference on Organic Agriculture and Food Security was held in connection with the 33rd Session of the Committee on Food Security in FAO, Rome. The objective of the meeting was to shed light on the contribution of organic agriculture to food security through the analysis of existing information in different agro-ecological areas of the world. The meeting identified organic agriculture's potential and limits in addressing the food security challenge, including conditions required for its success.
2. The meeting was open to civil society institutions in order to enhance the public-private dialogue on organic agriculture. Some 350 participants from more than 80 countries attended, including representatives from 66 FAO member countries, three UN agencies, five inter-governmental institutions, 15 international NGOs, 30 national NGOs, 24 research institutions, 31 universities, eight private companies and nine farmer associations.
3. During the first two days, the Conference participants evaluated in depth how organic agriculture can contribute to global, regional, national and household food security using the four dimensions of availability, access, stability and utilization for analytical reasons. Basic data, case studies and various ecological and economic models revealed the wealth of currently existing opportunities and challenges for global and local communities that need to be converted to concrete actions. The third Conference day brought together findings and synthesized specific recommendations along the framework of the Right to Adequate Food.

4. The Conference framed its discussions within the overall food system paradox, with a view to describe how organic agriculture could assist in a paradigm shift for food security. More specifically, the paradox was described as follows:

- global food supply is sufficient but 850 million people go hungry;
- use of chemical agricultural inputs has been increasing in the last two decades but grain productivity keeps declining;¹
- cost of agricultural inputs has been rising but commodity costs have been steadily declining for five decades;
- more knowledge is readily available through fast information technologies but nutrition-related diseases are increasing;
- industrialized food systems have environmental and social costs that threaten food security (e.g. occupational deaths through pesticide poisoning, farmers suicides due to debts, loss of million of jobs in rural areas).

5. Recognizing the need to increase agriculture productivity by 56 percent by 2030, the Conference evaluated whether organic agriculture could offer an alternative system that addresses the above-mentioned paradoxes by improving agricultural performance through better: access to food; relevant technologies; economic efficiency; nutritional adequacy; environmental quality and social equity.

6. The Conference considered both certified and non-certified organic systems including crop, livestock, aquaculture, fibres and medicinal and cosmetic plants. Consumer demand for organic products is increasing worldwide. In 2006, the organic market was estimated at nearly US\$40 billion (2 percent of food retails) and is expected to reach US\$70 billion in 2012. Organic agriculture occupies 31 million ha of certified crop and pasture lands and more than 62 million ha of certified wild harvested areas.

II. ORGANIC AGRICULTURE AND FOOD AVAILABILITY

7. Food availability is affected by many challenges including: water scarcity and the fossil-fuel crisis; urbanization and loss of farms and farmers; and globalization that threatens smallholder viability. The contribution of organic agriculture to food availability considered these issues, both in terms of agricultural productivity and food import capacity.

8. Conversion of global agriculture to organic management, without converting wild lands to agriculture and using N-fertilizers, would result in a global agricultural supply of 2 640 to 4 380 kcal/person/day. Sustainable intensification in developing countries through organic practices would increase production by 56 percent. Organic yields on average are comparable to conventional yields, although yields do decline initially when converting from high-input systems and almost double when converting from low-input systems. In Tigray, Ethiopia, a case study reported double yields as the result of organic soil management. In semi-arid environments, the main challenges are soil management practices and livestock production, and in tropical humid ecosystems, the main challenge is crop diversification. Input availability is maximized in organic systems through an efficient use of natural resources locally. Organic farms use 33 to 56 percent less energy per ha. They also enhance economic efficiency through savings on inputs but more labour is required. Nutrient use is enhanced through recycling and minimizing losses but the availability of phosphorus can be a challenge.

¹ See CFS:2007/2

9. Urban food supplies are enhanced by organic urban gardens and short supply chains between growers and consumers. At household and community level, organic rural and rural-urban markets and networks contribute to improving food quantity, quality and diversified food availability. In Argentina, the ProHuerta programme which covers 3.5 million people, reports 70 percent self-sufficiency in vegetables for poor people, especially in urban areas, as well as social security nets through organic gardens.

10. Discussions highlighted market forces, especially with regards to reconciling local food requirements with globalized food systems. It was noted that organic agriculture was emerging strongly in domestic markets of some developing countries such as China, India and Brazil. The role of developed country consumers in triggering organic production in developing countries was recognized, but the ability of the poor to feed themselves was debated.

11. A challenge related to international markets is to bring the producers together, to create participatory networks and to develop value chains based on fair trade and informed choices. The importance of food traceability was stressed as a way to empower producers and consumers further, especially as organic agriculture is entering the mainstream. The example of Nature&More was given as a commercially efficient system that internalizes environmental and social costs in food prices. It was stressed that world over, organic markets were not for an economic elite but for an “aware elite” prepared to pay higher prices provided the label is trustworthy.

12. Requirements for better agro-ecological science were highlighted, as well as the need to understand factors that contribute to risk mitigation. The complex livestock-environment interactions were highlighted as an area for further research and improvement of organic standards. The importance of participatory guarantee systems was stressed as a way to reduce costs and empower farming communities to distinguish their organic products on the market.

13. It was agreed that there is a need to evaluate organic foods and farms as an intrinsic whole, with multiple measurements on both productivity and efficiency. An adequate methodology for comparing organic systems to other food systems must consider: total agricultural outputs of multiple cropping systems, including yields and secondary goods such as straw; environmental services such as carbon sequestration, water saving and soil fertility; total energy efficiency, from the farm to post-harvest handling and distribution; and non-food benefits derived from agricultural systems such as avoided diseases and social equity.

III. ORGANIC AGRICULTURE AND ACCESS TO FOOD

14. Access to food is challenged by: accessibility to food by the market-marginalized; affordability of production inputs by poor farmers; rural livelihood security. The contribution of organic agriculture was analyzed in terms of access to the means of producing or purchasing food including: access to productive natural resources such as land, water, biological diversity and forest; access to diverse types of knowledge (traditional and modern); and access to fair and stable markets both domestically and internationally.

15. It was noted that organic agriculture improves food access by increasing productivity, diversity and conservation of natural resources, by raising incomes and by reducing risks for farmers. Improvement also results from sharing of knowledge among farmers. These benefits lead to poverty reduction and a reversal of rural outward migration. Policy requirements to improve food access include: increasing farmers’ rights to seeds, local varieties and biodiversity; expanding fair-trade systems along the full value chain; evaluating current emergency aid and procurement programmes; and strengthening the rights of indigenous farmers.

16. The analysis of several case studies on organic agriculture in Asia, Africa and Latin America suggests that the economic effects of converting to organic agriculture depend on the previous mode of farming. When converting from traditional low external input farming to organic agriculture, input costs decrease, while yields and income tend to rise. Conversely, when converting from intensive farming, yields and incomes tend to fall although there may be exceptions depending on the intensiveness of the new organic production system. In both cases, input costs fall and labour costs rise. However, the studies found other benefits of organic agriculture beyond the purely financial ones, such as risk reduction, conservation of natural resources, health protection, increased resilience to adverse weather and farmer empowerment through the acquisition of knowledge and higher reliance on local inputs.

17. Several participants stated that the access to local organic foods is reduced when these foods are exported from developing countries but other participants noted that exports can improve food access in general through the generation of higher incomes. For example, the Export Promotion of Organic Products from Africa has engaged over 40 000 small holder farmers in Uganda accessing premium markets for their produce, providing them with secure and sustainable income. It was agreed that both domestic and international markets offer opportunities for farmers and that more efforts are necessary to expand local markets for organic foods in developing countries.

18. The potential of urban and peri-urban organic agriculture was recognized. Some participants stated that policies aiming at facilitating the importation of cheap foods and the granting of subsidies to farmers in developed countries had adverse effects on farmers in developing countries. However, access to food in rural areas is enhanced by organic agriculture when farmers have access to production assets; although external agricultural inputs are not needed, land and water rights should be secured. Organic agriculture also tends to redistribute gender roles, with more participation of women in home-grown foods; however, care should be given in distribution of workloads.

19. Participants noted that the prices of conventional foods were often distorted by subsidies and did not reflect the full costs to society as a whole or the environment. One speaker called for internalizing these costs into the price of conventional foods. The meeting recognized that higher production does not necessarily translate into higher local access to food and that food must also be culturally appropriate. It was agreed that higher farm-gate food prices are needed for livelihood security but that market intelligence is needed to sustain benefits from improved income generation. In Madhya Pradesh, India, 6 000 farmers are improving their income by 10 to 20 percent from organic cotton due to a business model that builds networks, market knowledge and partnerships among farmers, spinning and processing companies and retailers.

20. It was agreed that the organization of farmers into associations, cooperatives, enterprises or other types of groups is critical to the development of the organic agriculture sector and, especially, better access to organic foods. Considering that organic agriculture is highly knowledge intensive, farmer organizations have a critical role to play in extension, training and technical assistance. They can also have a positive impact on establishing a participatory internal control system to reduce the cost of certification and group marketing. Their contribution to research and development is fundamental, but they need the active support of firms and governmental institutions.

21. More generally, public-private partnerships and an integrated supply chain approach were called upon to support the development of the organic sector. While the private sector should be the engine of growth for the organic supply system, governments are instrumental in providing enabling legal and institutional environments, building capacity and supporting research. Long-term political commitment by governments was deemed crucial to the sustainable development of organic agriculture.

IV. ORGANIC AGRICULTURE AND STABILITY OF THE FOOD SUPPLY

22. The stability of the food supply is challenged by: the erosion of natural resources and environmental services; climate change and inter-annual variability; and trade reform impacts on commodity prices. Organic agriculture was analyzed with regards the environmental stability of organic agro-ecosystems.

23. Organic agriculture emphasizes preventive measures (rather than control) that result in an overall agro-ecosystem stability, especially of soils that have increased soil organic matter and microbial biomass. Organic soil structure results in better water drainage and percolation, and soil organic matter improves water-retention (20-40 percent more), thus decreasing irrigation requirements and enhancing crop yields in drought periods. Better ecological balance is achieved through mandatory crop rotations, use of adapted seeds/breeds and rehabilitation of functional biodiversity.

24. More importantly, organic systems decreased use of fossil fuel-related input, from 10-70 percent in Europe and 29-37 percent in the USA, with exceptions for certain crops (e.g. potatoes). The contribution to climate change mitigation is achieved through doubling soil carbon sequestration (mainly in livestock-based systems), as compared to conventional systems, and by decreasing greenhouse gas emissions: 48-60 percent less CO₂, less N losses because of less mobile soils, but methane emissions are equal as in conventional systems.

25. The global warming potential of organic systems (measured by both GHG per ha and per tonne of food) is improved but no-till soils achieve better results. However, if one considers that no-till agriculture is stockless and that it entails intensive synthetic input use as well as intensive livestock production off-site, the global warming potential of organic systems appear to be the less damaging option.

26. It was noted that even if lower yields resulted from a large-scale conversion to organic management, there would still be considerable environmental and socio-economic benefits over conventional agriculture. The importance of including perennials in organic systems, such as agroforestry, and wild collection was underlined for food stability as well as contribution to climate change mitigation. It was noted that diversification as a risk aversion strategy is common in organic systems.

27. It was stressed that, in addition to improving some productive aspects of organic yields, such as pest management for certain crops, there is a more pressing need to promote multicropping practices such as re-integration of livestock into cropping systems and the viability of small-scale agriculture that hosts the largest proportion of the global farming population.

28. Discussions underlined that organic agriculture has relied, and still relies, on private initiatives and investment. The sector growth is worrisome when large companies implement organic monocultures by simply substituting synthetic inputs with biological control agents and machinery. Organic guidelines should have a better emphasis on permanent vegetation cover in organic systems and improving livestock standards.

29. Governments clearly have a role in creating conditions favourable for market stability through food security policies that support smallholders in transitioning towards a system that delivers more environmental services and provides agro-ecological knowledge.

30. It was emphasized that non-productive characteristics such environmental stability of food supplies was important and that food production ultimately depends on the capacity of farmers to produce under increasing climate uncertainties. It was recommended that serious attention be given to compost and humus in soil, as an economic interest, by integrating carbon

trading rights in food systems. More research is required to reducing cattle enteric emissions of methane through appropriate feeding.

31. The further development of organic standards and comparative methodologies, based on life-cycle assessments, will benefit from further research and stakeholders collaboration to improve organic agriculture performance, measurability, accountability and comparability with other systems.

V. ORGANIC AGRICULTURE AND FOOD UTILIZATION

32. Food utilization is challenged by: rapid urbanization, dietary transition and health concerns; consumer demands for quality food and changing buying patterns; and global transboundary diseases and higher incidence of contaminated food. The contribution of organic agriculture was analyzed in terms of food quality and safety, consumer health and post-harvest handling.

33. Many of the benefits of organic agriculture depend on the establishment of an ecological balance between the soil, the plants and the animals, not just on substituting synthetic pesticides and fertilizers for organic ones. This fundamental difference is particularly important for recently converted farmers with little experience in organic agriculture, where inadequate advice can jeopardize not just the farmers' livelihoods, but also the quality and even the safety of products.

34. Consumers of organic food expect authenticity, care and responsibility and that, for all food types, the best practice in organic foods will be better or equal to conventional foods. Organic foods tend to have higher micronutrient contents and more plant secondary metabolites and conjugated fatty acids that contribute to better human health, including lower incidences of non-communicable diseases. Organic systems yield a higher animal immunity and increased resistance of plants to disease, with 50 percent fewer mycotoxins in crops and a longer shelf-life. The restriction on synthetic input use contributes to safer drinking water, due to decreased leaching of phosphates and nitrates, and avoids pesticide poisoning (conventional agriculture chemicals cause about 20 000 deaths per year).

35. The case of Cuba was illustrated, as the country that has adopted a series of approaches in order to secure food in times of drastically reduced inputs of agricultural chemicals, fuel and capital. Actions taken to avoid food crisis included re-localization of food production and direct food access through food rations and social safety nets (food and nutrition surveillance systems). Although several challenges remain, Cuba has demonstrated that national food security is achievable with political will and cross-sectoral, comprehensive and equitable implementation of organic agriculture.

36. In Egypt, water scarcity and water pollution related to agriculture prompted for converting to organic production and successfully implementing a system for local market development. In trying to understand the main drive behind successful local market initiatives in developing countries, it was indicated that there is no "one size fits all" and that the presence of entrepreneurs is key to identifying each situation's competitive advantage and investing in human resources development.

37. In China, rural environmental pollution has given birth to a increased awareness of the need for health and environmental protection among all stakeholders, including consumers. Organically managed land has increased from 342 000 ha in 2003 (0.28 percent of total land) to 978 000 ha in 2005, while increasing local farmers annual income by 9 times. The example of China is particularly inspiring because it features three distinct organic supply models. The first is commercially successful and involves semi-urban or suburban areas close to large rich cities in the Eastern provinces. These organic market gardens, which employ migrant workers, sell to both the international market and domestic supermarkets owned by big entrepreneurs. With the second

model, generally the most successful, local companies take all the risks and the extra costs for farmers and are responsible for group training and certification. The third model, more precarious, involves poor farmers living in remote locations and encouraged by local environment protection boards or local research institutions. Given the poverty of the farmers operating in very small plots, they need a promise of material rewards to be tempted into conversion, which is not always possible.

38. It was stressed that costs of illness can be greater than benefits of higher yields. The organic promotion of local varieties was stressed as an important feature and further research should be developed on nutrigenomics, particularly the relationship between food composition and health. A better understanding is needed of the consequences of organic agriculture on the nutritional quality of the diet, both in developing and in developed countries, particularly the impact of secondary plant components and food quality - beyond organoleptic attributes. Research is now going deeply into proteonomics related to single compounds but there is need to look into the cumulative effects of different components (e.g. pesticide residues). It was agreed that organic foods should not only be evaluated in terms of “no harm” but also in terms of other health and life quality impacts.

39. The importance of food cultures was stressed, including knowledge systems for food harvest, preservation and storage. The indigenous knowledge revival and adaptation of local systems was highlighted for the paradigm shift towards food security. Governments should help home-grown policies for the revival of local food systems.

40. Specific attention should be given to organic school gardens, not only to meet dietary allowances but also to introduce biodiversity. It was recommended that nutrition education programmes and nutrition considerations be included in the curriculum and that related guidelines be given to ministries of education.

41. It was noted that many small organic producers are being replaced by large food industries providing organic lines under contractual conditions that risk diluting the benefits of organic agriculture. There is a need to find ways to preserve grower communities’ control over the organic supply chain.

42. It was agreed that organic agriculture can contribute to multilevel food self-provisioning but that compatible food import-export policy was required. In Switzerland for example, imports of organic foods produced locally are not permitted.

43. A holistic view of food systems, beyond productivity to include environmental, social and health impacts could solve the current paradox in agriculture.

VI. ORGANIC AGRICULTURE AND FOOD SECURITY

44. An FAO synthesis presentation began by defining the scope of organic agriculture from certified to non-certified forms and linking it to Right to Adequate Food principles. The resulting basic concept was a “neo-traditional food system” view in which modern science and indigenous knowledge work together throughout the entire food system – thus moving from single commodity production comparisons into system level comparisons.

45. Bringing together the different attributes of organic agriculture to the different food security dimensions, conclusions were drawn on organic agriculture’s impact on the Millennium Development Goal 1 for reducing hunger and poverty, MDG 7 for environmental sustainability and MGD 8 for global partnerships, with specific emphasis on chronic, acute and hidden hunger, employment opportunities in rural areas, long-term environmental viability and food provisioning.

46. With regards food security, it was highlighted that organic agriculture:
- improves household nutrient intake and capacity to buy food through sustainable intensification and commercialization of small holder agriculture;
 - alleviates acute hunger during food emergency situations through diversification and increased ecosystem stability;
 - contributes to micronutrient intake and healthier diets through the reintroduction of under-utilized varieties and diversification of production;
 - establishes self-reliant food systems, especially at household level.
47. With regards poverty alleviation, it was highlighted that organic agriculture:
- offers employment opportunities, as it requires 30 percent more labour input per ha;
 - contributes to sustainable rural livelihoods, as it provides better return on labour;
 - contributes to rural development, as rural economies are revitalized;
 - contributes to more social well-being, through fair wages and non-exploitive work that improve control over resources.
48. With regards environmental sustainability, organic agriculture:
- is a low energy footprint food system, as it prohibits the use of N-fertilizers;
 - avoids damage by maximizing resource use efficiency and energy and nutrient recycling;
 - restores functional biodiversity and conserves environmental services;
 - decreases transport and transaction costs through community-supported food short-supply chains.
49. With regards food sourcing, organic agriculture:
- offers higher farm-gate prices, that reflect real production costs and environmental stewardship;
 - allows smallholders to compete with quality products and specialty foods;
 - establishes vibrant local food supplies that decrease food-import dependency and import surges;
 - helps re-localize food systems where the poor and hungry live.
50. The 2004 Right to Adequate Food aims to provide the powerless with leverage to address the causes of food insecurity and poverty. It strengthens local communities to take care of their own members. Organic agriculture empowers social systems to control their own food supply and organic labels enforce the right to choose food.
51. An analysis of the Voluntary Guidelines of the Right to Food reveals many linkages with organic agriculture practices, including issues such as, for example: governance in the food supply chain, legal protection, economic development opportunities, affordable technology, prevention of non-competitive practices, protection of consumers, development of local and regional markets, small producers' integration into markets, safeguarding drinking-water quality and agrobiodiversity, conservation of ecosystem carrying capacity for present and future generations, availability of diverse and nutritious food, promotion of gardens both at home and schools and encouragement of traditions on matters related to food.
52. The synthesis concluded that a new paradigm in food security is required, globally and locally, which build on organic agriculture opportunities to answer the immense problems of the next five to 50 years, including population and consumption growth, oil peaks while key inputs and global food transport is dependent on fossil fuels, falling water supplies, increasing climate variability and job loss in the agriculture sector.
53. A presentation specifically addressed the question: "what if the world converted on large scale to organic agriculture" using IFPRI's IMPACT model and extensive farming systems data. The important finding was that even at high levels of conversion to organic agriculture (up to 50 percent) in Europe and North America, there would be relatively little impact on the availability of food and price changes would be limited. For the case of sub-Saharan Africa, a conversion of up to 50 percent would likely increase food availability and decrease food import dependency, with negligible changes in prices and no changes in current malnutrition rates. These

findings, based on changes in demand, supply, trade, prices, etc., contrast starkly with critics of organic agriculture and proponents of old paradigms.

54. Experienced experts further highlighted that, especially in Africa, agricultural productivity could only be improved by harnessing natural resources but that agro-ecological research is required. The role of indigenous knowledge and culture was reiterated as well as the need to devise food production strategies based on fossil-fuel independence and localized food systems.

55. In particular, it was emphasized that agricultural production should, in order of priority:

- target local food needs in local markets;
- allow import only for items not grown locally; and
- export high value products.

Unless such food policies are in place, food systems will remain vulnerable to macro-economic uncertainties and dependent on forces beyond the control of local communities.

VII. RECOMMENDATIONS FOR ACTION

56. The meeting concluded that current food models are creating problems for the future and that the new environmental and macro-economic challenges will mostly hurt vulnerable populations. In particular, climate change and industrialized food systems can be “mitigated” through organic management.

57. Such a “living alternative” offers lessons for sustainable food security such as:

- decommodifying food with environmental and social-cultural values;
- giving the right to choose food systems to producers and consumers;
- producing food at low cost for the poor;
- favouring small-scale farming and direct retailing;
- offering a safe and healthy food chain, from soils to biodiversity and people;
- valuing traditional knowledge and indigenous goods;
- creating cooperative learning processes and rural-based networks;
- stimulating innovations in agro-ecological management;
- developing social responsibility throughout the food supply chain;
- establishing food quality assurance and traceability procedures.

58. In evaluating the contribution of organic agriculture to food security, the meeting urged that a proper model be put in place in order to assess the quality of food systems, beyond productivism. This model should not be based on single yields but multiple outputs, and consider important aspects such as resilience of food systems to environmental and macro-economic change and local food self-reliance.

59. Moving forward towards a new paradigm, policy recommendations follow Right to Food recommendations for implementation at national level, recognizing that public intervention is necessary to preserve the fair playing field as the organic sector expands.

60. *Advocacy and training:*

- invest in organic awareness in agricultural and environmental education;
- build organic knowledge in university and research institutions;
- provide organic training to extension officers and farmers field schools.

61. *Information and assessment:*

- map vulnerable groups and local food needs;
- support investments that facilitate smallholders’ entry to organic agriculture;
- link access to land and water to agroecological management.

62. *Legislation and accountability:* adopt the international organic guarantee tools being developed by the FAO/IFOAM/UNCTAD International Task Force on Harmonization and Equivalence in Organic Agriculture
63. *Strategy and coordination:*
- integrate national agricultural development and poverty reduction strategies;
 - restore quality financial incentives in agricultural and rural programmes;
 - protect organic lands from contamination (GM-free zones);
 - enforce penalties on performance;
 - develop coherent policy, including removal of subsidies on synthetic inputs;
 - allocate resources to agro-ecological science;
 - discourage import of organic foods produced locally.
64. *Benchmarks and monitoring:*
- establish benchmarks for organic agriculture in food security programmes;
 - adopt organic process and outcome indicators to allocate public resources;
 - improve organic traceability with performance information on labels.
65. Research recommendations focus on technical and system level interventions, including:
- organic soil fertility, including biomass use strategies;
 - animal husbandry, including grazing strategies in dry areas;
 - breeding and selection of traditional breeds and heirloom crop varieties;
 - landscape science that integrates farmlands, natural vegetation and water bodies;
 - farm economics and organic market dynamics;
 - impact of organic management on food quality and consumers' health;
 - integrated management of food supply chains;
 - education and training curricula on food system complexities;
 - creating a Consultative Group on Organic Agricultural Research, within existing institutional structures.
66. The meeting urged the 33rd Session of the Committee on World Food Security to consider promoting organic supply systems as a food security strategy by including it into national and regional programmes for food security.

VIII. CONCLUSIONS

67. The meeting agreed on the following conclusions, as summarized by the Chair:
- Organic agriculture can contribute to food security but its potential to do so depend greatly on political will.
 - New challenges such as climate change can be mitigated by organic agriculture through such measures as enhanced soil carbon sequestration. Organic agriculture also offers practical climate adaptation options.
 - Water security is enhanced by organic agriculture, in terms of drinking water quality, decreased irrigation needs in organic soils and better yields in water-stressed climate variability.
 - Agrobiodiversity is protected and sustainably used by organic agriculture.
 - Nutritional adequacy is enhanced by the more diverse and micronutrient rich organic foods.
 - Rural development is achieved by organic agriculture through generating income and employment in areas where people have no alternative other than using their labour, local resources and indigenous knowledge.

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- An international network for organic research and proper extension is crucial for the further development of organic agriculture and more public resources should be devoted to agro-ecological science.
 - Food security is tightly linked to agricultural policies that determine export and import choice. Organic agriculture reconciles economic objectives with environmental and social objectives but its further development requires securing a level playing field through appropriate policy interventions.
 - Food security is not only a concern of developing countries as fossil fuel crisis, climate change and other vulnerabilities in the food chain may threaten also food secure areas.