PROMOTING ORGANIC FARMING IN INDIA: EXTENSION IMPLICATIONS

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Despite vigorous promotion of Green Revolution technology, a huge part of Indian agriculture is still predominantly organic. There are many areas and farming communities in India that do not use synthetic chemicals even today and are, thereby, 'organic by default'. Such pockets are spread throughout the country but are more densely concentrated in the dryland area, the tribal belts and the hilly areas, especially in the Himalayan and the Northeastern regions.

Most of our small, marginal and tribal farmers have been practicing organic farming as part of the traditional cultivation systems. They have maintained an incredible diversity of local germplasms and used own-farm derived renewable resources for nourishing the land through biofertilizers and protecting the crops from pests and diseases through bio-chemicals (such as neem and other organic extracts). The creative manipulation of self-regulating ecological and biological processes and recycling of inputs enabled them to cultivate acceptable levels of crops, livestock and human nutrition products.

Even now, the consumption of chemical fertilizers is largely restricted to only about 30 percent of India's total cultivated area that is irrigated. In the remaining 70 percent of the rainfed arable land, application of any fertilizer is very nominal. How will the farmers benefit by embracing full-scale organic agriculture in such areas or by switching over from conventional to organic farming in certain other areas? This paper looks into these issues and builds arguments for evolving an extension strategy aimed at promoting organic farming in the country.

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Changing Market Scenario

Growing health consciousness and increased environmental concerns of consumers are driving the global market for organic products. The past decade has witnessed dramatic changes in human food consumption patterns. The repeated food scares in the recent past relating to the products of industrial agriculture and livestock rearing (such as the Mad Cow disease syndrome in the UK and USA) have made consumers willing to pay more to ensure food safety. This has brought about a dramatic change in the concept of food quality, which now refers not only to the characteristics of the final product, but also to the way in which food is produced, processed and transported.

Consumers in the developed countries and a section in the developing countries have started spending on greener, healthier and natural foodstuffs, and are ready to pay more for organically produced and labeled products. Globally, consumer spending on products beneficial to health has been on the rise. As a result, farmers in the developed countries are being encouraged to convert their existing farms into organic farms, often with financial incentives and technical assistance. This has also opened up a new window of opportunity for farmers in the developing countries to tap the growing international market for organic food and other products.

Market Size & Major Products

The major organic products sold in global markets include dried fruits and nuts, processed fruits and vegetables, cocoa, spices, herbs, oilseed crops and derived products, sweeteners, dried leguminous products, meat, dairy products, alcoholic beverages, and processed food and fruit preparations. Non-food items include cotton, cut flowers, pot plants, etc.

Global retail sales of organic products are expected to touch $23-25 billion in 2003 and $29-31 billion by 2005, as against sales of $16 billion and $19 billion in 2000 and 2001 respectively. The US market, with an estimated size of $8 billion, was the largest in 2001 and the retail sales are expected to have an annual growth rate of 15-20 per cent, making it the most attractive market for organic products. The European market, which was estimated at nearly $9 billion in 2001, is expected to grow to $10-11 billion by 2005 (Yusssefi and Willer 2003).

Table1: Estimated global retail sales of organic products

Year	Retail sales (Billion US $)
2000	16
2001	19
2003	23-25
2005	29-31

Source: Yusssefi and Willer (2003).

Countries opting for organic foods are Austria, Belgium, Canada, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Japan, Latvia, Lithuania, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, UK, USA and Oceania countries. The total organically managed area worldwide is currently estimated at more than 22 million hectares (Yusssefi and Willer 2003).

Organic Farming: Definition

According to FAO's Codex definition, "organic agriculture is a holistic production management system, which promotes and enhances agro-ecosystem health, including biodiversity, biological cycles and soil biological activity." Organic farming, under USDA norms, is a system that is designed to produce and mail agricultural products by the use of methods and substances that maintain the integrity of organic agricultural products until they reach the consumer. This is accomplished by:

- Using cultural, biological, and mechanical methods, as opposed to use of synthetic chemical substances, to fulfill any specific fluctuation within the system so as to maintain long-term soil biological activity;
- Recycling of wastes to return nutrients to the land;
- Providing attentive care for farm animals; and
- Handling the agricultural products without the use of extraneous synthetic additives or processing in accordance with acts and regulations.

Thus, an "organic product" is that which is raised, grown, stored or processed without the use of synthetically produced chemicals or fertilizers, herbicides, insecticides, fungicides or any other pesticides, growth hormones or growth

regulators. Only biological pest control methods and products may be used. Similarly, all products of animal origin such as meat, milk, other dairy products, poultry and eggs must be produced using feeds, which meet the specifications for an organic product. Generally, no growth stimulants, antibiotics, synthetic medications, synthetically produced mineral or vitamin supplements may be used.

Organic Standards

The standard for organic products varies from country to country. To achieve harmonization of different national organic standards and to spur international trade on organic products, the Food and Agriculture Organization (FAO) in collaboration with the World Health Organization (WHO) has developed the 'Codex Alimentarius' for organic products. FAO has also committed itself to providing increasing support to organic farming.

The International Federation for Organic Agriculture Movements (IFOAM) provides a global umbrella for organic agricultural accreditation programmes. The IFOAM is also working towards refining the concept of organic farming through its basic standards and harmonizing organic certification programmes through its accreditation system. Established in 1972 in France, the IFOAM has about 600 organizational members from 120 countries including India.

To obtain organic certification, the crops must be grown on land where the soil has been treated according to organic standards for 36 months prior to harvest. It is necessary that the farm have a long-term soil-building plan. A soil-testing programme must be in place to monitor the input and output of plant nutrients and ensure that no severe nutrient depletion or "mining of the soil" takes place. Soils with nutrient imbalance or deficiency do not support either crop production or active populations of beneficial microbes that are essential components of a productive soil.

Organic Farming: A Swot Analysis

Strengths

- The organic products business is very profitable as consumers are willing to pay a high price premium. Moreover, chemical based agriculture

is highly subsidized and such supports need to be gradually phased out under WTO regime. Organic agriculture would also look more economically attractive if the cost of necessary environmental restoration of chemical-affected land is taken into account.

- Organic farming would entail natural resource conservation in terms of improved soil fertility and water quality, prevention of soil erosion, preservation of natural and agro-biodiversity, etc.
- Organic production systems would bring in positive social effects like generation of rural employment and corresponding lower urban-ward migration, improved household nutrition and local food security, reduced dependence on external inputs, etc.
- Organic farming can provide a solution to the alarming environmental damage caused by chemical-based agriculture. The residues of chemical pesticides are not only percolating into the soil but have moved into the reservoirs of water, rivers and streams. The chemical residues in food grains, food items, fish, milk products, etc. pose serious health hazards.
- Organic farming allows optimal utilization of natural resources and skillful management of natural processes. Such systems can rely heavily on the existing pool of indigenous technical and ecological knowledge especially among the tribal communities.

Weaknesses

- Organic farming technologies are knowledge-intensive. These require intensive personal care and a larger number of working hands. This can be an advantage in terms of employment potential and a disadvantage if one takes into account the additional cost involved.
- Organic farming relies on organic inputs, a sector poorly developed in the country. Biofertilizers and biopesticides have not become very popular among the farmers due to the lack of marketing and distributing network. Retailers are typically not interested in selling bio-inputs

because low demand, erratic supply and the ignorance of farmers about bio-inputs. Moreover, the chemical fertilizers and pesticides lobby dominate the market with their heavy advertisement, public support and higher margin for retailers. Such problems need to be addressed through a comprehensive state support for organic farming.

- Although the standards for organic products in the country have been formulated recently, the quality standards for bio-inputs are still lacking.

Opportunities

- There is growing public awareness about the health and environmental hazards associated with application of chemical fertilizers and synthetic pesticides. Organic farming will place us in a better position to address the health concerns of our people.
- There is perennial short supply of chemical fertilizers. In many remote, hilly and tribal-inhabited areas, it is not only difficult but also uneconomic to transport chemical fertilizers and other inputs.
- There are several alternatives for supply of plant nutrients from organic sources like vermicompost, biofertilizers, etc. An estimated 600-700 million tonnes of agricultural wastes are available in the country every year, which can be converted to nutrient-rich vermicomposts. There are specific biofertilizers available for cereals, millets, pulses and oilseeds, etc.
- There is a rapidly expanding global market for organic food and organic products. While the market for bio-foods is expanding at the rate of 20-25 percent per year, the consumers appear to be prepared to pay at least 20-25 percent higher price for health foods. India can play a dominant role by marshalling its chemical-free lands to produce food grains, fruits, honey and milk products for the growing organic market segment.
- The trade liberalization under WTO is also opening new vistas that favour organic farming. The Sanitary and Phytosanitary Standards (SPS) agreement provides for stringent standards on pesticide residue

in farm products. Many Indian exporters have encountered difficulties because of their inability to meet SPS standards. In fact, India can develop higher SPS norms than EU if organic farming is encouraged and our farm exports will not face any specification problems in the future.

- As India has so far allowed only Bt-cotton and no other genetically modified (GM) crops, it is in a better position to export its agro-products to EU and other countries, which are averse to GM foods.
- Other inherent advantages, which can position India competitively, include varied agro-climatic regions, prevailing traditional farming practices, local self-sustaining agricultural systems, a sizeable number of progressive farmers and the ready availability of inexpensive labour.

Threats

- The consumer perceptions on the organic production methods differ from region to region. Also, retailers and importers in developed country markets tend to apply their own quality standards, which are often more stringent than the national quality regulations. Therefore, rationalization of national and international norms for the definition of organic farming and organic products becomes necessary.
- Although organically grown food commands higher prices, with premiums for organic products ranging from 10-100 per cent, these may reduce when supply increases, especially in those countries with policies to encourage organic farming.
- In certain cases, the higher cost of bio-inputs as compared to industrially generated fertilizers and pesticides may encourage many farmers to shift production patterns.
- For taking advantage of the new trade opportunities, the farmers will have to meet rigid organic standards and often a high certification cost. Active international efforts will be needed to reduce these costs, particularly for smallholders, and facilitate market access.

- Encouraging a shift towards organic farming along internationally accepted lines, and producing organic food for export, can be a demanding process in terms of time, resources and expertise. It has to be attempted by developmental agencies and NGOs in a phased manner in selected pockets. Though eco-friendly low external input sustainable agriculture (LEISA) has wide applicability, extending an export-oriented system over wide areas and to a sizeable number of cultivators may require large resources.
- A policy for organic agriculture may encourage exports and enhance local food security. However, this can also imply tensions between pricing policy, input supply and the priorities of meeting the food needs of the entire population.

Policy Environment in India

Organic agriculture is in many ways preferable pattern for developing agriculture in a country like India. However, the lack of national rules, regulations and specific standards relating to organic food production for a long time, inadequate certifying agencies and unrecognized 'green' marketing and retailing channels prevented farmers from exploiting the export market advantages of organic production. The competitive edge of India over other countries can help it emerge as a major supplier of organic products to the international market in the near future. But to make this a reality, India needs to frame supportive policies for encouraging such agriculture for exports as well as to enhance rural food security. The following is an account of the ground already covered.

Organic area: India has a recorded area of 41,000 ha (or about 0.03 percent of total agricultural area) under organic management, which involves a total of 5,661 farms (Yussefi and Willer 2003). Besides, the State of Sikkim has been declared as 'chemical fertilizer free zone' and Uttaranchal as an Organic Zone. The extent of area under organic farming in some Asian countries has been set out in Table 2.

Table 2: Extent of organic area in Asia

Countries	Year	Certified organic area(ha)	Organic area as percentage of agricultural area (Percent)
China	2001	301,295	0.06
India	2001	41,000	0.03
Indonesia	2001	40,000	0.09
Israel	2001	7,000	1.25
Japan	1999	5,083	0.09
Korea Rep.	1998	902	0.04
Malaysia	2001	131	0.002
Nepal	2001	45	0.001
Pakistan	2001	2,009	0.08
Philippines	2000	2,000	0.02
Sri Lanka	2001	15,215	0.65
Thailand	2001	3,429	0.02
Vietnam	2001	2	Negligible

Source: adopted from Yussefi and Willer (2003).

Organic production programme: In June 2001, the Government of India announced the National Programme for Organic Production (NPOP), which aims to promote sustainable production, environmental conservation, reduction in the use and import of agrochemicals, the promotion of export and rural development (FAO 2002). The logo 'India Organic' was established in October 2001, under which the products can be sold. The National Accreditation Policy and Programme (NAPP) have also been formulated with Accreditation Regulations announced in May 2001. All certification bodies (domestic or foreign), whether already engaged or proposing to engage in inspection and certification of organic crops and products, should be accredited by an Indian Accreditation Agency. Foreign certification bodies operating in the country must also be accredited. India's first local organic certification body, Indocert, was founded in March 2002. Indocert seeks to offer reliable and affordable organic inspection and certification to farmers, processors, input suppliers and traders. It provides certification for domestic and export markets.

The NAPP regulations have provisions for export, import and local trade of organic products. Currently, however, only the export of organic products comes under the government regulation, while imports and local trade do not. The categories of products covered under accreditation are organic crop production, organic animal production, organic processing operations, wild products and forestry.

Organic crop center: The National Institute of Organic Farming is being set up at Gaziabad, as a part of the Rs. 100 crore funds allotted for promoting organic farming in the 10th Five Year Plan. The institute would have its offices across the country and appoint certifying agencies for organic farm products. Further, the institute would undertake training, awareness programmes, production and marketing development for organic farming apart from laying down rules and regulations for farm logo. There is also a large network of agricultural research, education and extension institutions in the country that can be harnessed for promoting organic agriculture.

Brand Establishment: At the national level, the logo 'India Organic' has been established. The Khadi and Village Industries Commission (KVIC) has launched organic food staples under the brand `Desi Aahar'. KVIC has inherent strengths, such as a very large network of retail outlets spanning metros, cities and villages, a strong brand image (its honey and herbal products are very popular) and a loyal customer base. Such efforts need further strengthening.

Grassroots and mainstream initiatives: Initiatives on organic farming covering both production and marketing are spreading in the country. For example, a World Bank aided project in selected sites in Kerala (Idukki and Wynad districts), Tamilnadu (Nilgiris district) and Orissa (Kandhmal district) seeks to empower rural communities to export organic spices. The range of spices selected is black pepper, white pepper, ginger, turmeric, cardamom, clove, nutmeg and western herbal spices like rosemary, thyme, oregano and parsley. The project being implemented through local NGOs during 2000 to 2003, envisages improvement and promotion of organic production of spices, certification and export of selected spices. This will be achieved through imparting training to NGOs and farmers on basic standards, organic

production methods, documentation, inspection and certification. The empowerment of the NGOs is also sought by providing PCs and software for market promotion of organic products. A survey of potential markets of organic products has also been planned to disseminate market information to potential producers in India. Certification of the project areas as organic is also envisaged under the project. An extension strategy for organic farming may lean on such varied experiences.

Extension Implications

- Locating the organic farms and encouraging them to stay organic. Enlarging the area under organic certification in various regions.
- Encouraging consolidation of organic farms so as to achieve homogeneous grades of products.
- Creation of organic zones and establishment of Organic Parks, including dedicating some of APEDA's Export Processing Zones exclusively to organic products.
- Setting quality standards for organic fertilizers and bio-pesticides along with a system of certification.
- Exploitation of tissue culture biotechnology for producing large-scale disease-free high yielding planting materials and conforming to SPS standards.
- Conservation of crop biodiversity by the local people.
- Organizing training on organic farming, organic standards and SPS norms.
- Establishment of accredited laboratories for evaluating biosafety standards.
- Help in setting up of chains of retail outlets for organic products along with publicity campaign for promoting organic food market.

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