

Organic Farming in India: A Vision Towards A Healthy Nation

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Introduction

Health is a state of complete physical, mental and socio-economic wellbeing. These aspects are often influenced by the environment we live in, the food we take in and our interaction with other living being. Healthier populations tend to provide boost to the economic growth of the country

Organic farming is a method of farming which focuses on growing food through natural ecosystem management instead of synthetic inputs. It cultivates the land and crops in such a way so as to keep the soil alive and produce safe yield. Organic farming system rely on cultural, mechanical and biological aspects of nutrient and pest management. Organic farming is carried out in harmony with the nature thus it preserves and sustains natural environment.

Organic farming system also improve the quality and safety of the food, conventionally grown food have immense adverse health effects due to the presence of pesticide residue, more nitrate, heavy metals, hormones, antibiotic residues and also genetically modified organisms ^[1]. Organic farming conserves soil nutrients reducing input cost, reduces economic risks because the system is more diversified.

Organic producers have tremendous growth prospects both at local and international markets, furthermore it can also reduce the dependency on importing of raw material for manufacturing synthetic fertilizer and pesticide as by using materials available in their surrounding farmers can themselves produce organic fertilizer and pesticides. Therefore organic farming can help address environmental crisis, economic insecurities and health disparities thus contributing to overall health of the nation.

Food quality and food safety

There has been an extensive growth in the demand for organic food globally, with global sales posited to have crossed USD 90 billion in the past twenty years^[2]. The reason for this extensive growth is the growing concern about the environment, food safety, animal welfare, as well as human health^{[3] [4] [5] [6]}beside these concerns the demand for organic foods also increased during COVID 19 as consumers perceived them as good for immunity.

A well organic nutritious diet consumed throughout the life-course helps in preventing malnutrition in all its forms as well as wide range of non-communicable diseases (NCDs) and conditions. According to a review of Lairon (2010)^[7] which was based on the French Agency for food safety (AFSSA) report, organic plant products contain more dry matter and minerals (Fe, Mg), more anti-oxidant micronutrients such as phenols and salicylic acid and Organic vegetables contain far less nitrates, about 50% less. Organic animal products contain more polyunsaturated fatty acids. Although organic cereals and their products contain lesser protein than conventional cereals, they have higher quality proteins with better amino acid scores. Lysine content in organic wheat has been reported to be 25%–30% more than conventional wheat^{[8] [9]}

As far as food safety and health is concerned organic food are safer than conventional foods because of the precautionary principle followed in the formulation of organic regulations and in the assessment of food safety. Food safety in organic products are assured by

- 1) lower nitrogen applications (which reduce nitrate concentrations)
- 2) the ban on pesticides (which results in almost no pesticide residues)
- 3) the ban on prophylactics and the requirement for double retention times in animal production systems (to ensure low concentrations of medicine residues)^[10]

Environmental protection

1. **Organic farming is less harmful to the environment:-** Organic farming does not allow the use of synthetic pesticides which allows disease resistance to build up in plant-eating-insects, fungi, and bacteria, the pesticides sprayed on plants contaminate the soil, water supply, and air. They remain persistent and active for longer time thus killing beneficial organisms.
2. **Strengthen soil health:** - High levels of soil fertility and health are more present in ecosystems where organic practices are applied. Good soil health fosters the growth



of beneficial organisms which in turn help in recycling plant nutrients and in controlling crop disease and pests, thus improving crop production

3. **Enhance biodiversity:** - Organic practices such as diverse crop rotation and not using synthetic inputs strengthen biodiversity in the environment. A thriving biodiversity increases ecosystem productivity and allows for a variety in species' growth and maintenance. Diverse fauna and flora are essential for life on this planet, and these can only be fostered by sustainable agricultural practices such as those offered by organic agriculture
4. **Mitigate climate change:** - Organic practices sequester nitrogen and carbon in the soil which is also a double benefit to the environment. Locking the carbon in the soil reduces the amount of carbon emissions into the atmosphere, hence, decreasing global warming. Conventional agriculture uses vast quantities of synthetic fertilizers and pesticides. It takes significant amounts of energy to manufacture these chemicals. Organic agriculture minimizes energy consumption by 30-70% per unit of land by eliminating the energy required to manufacture synthetic fertilizers, and by using internal farm inputs, thus reducing fuel used for transportation.

Socio-economic benefits of organic farming

Indian organic food market is at nascent stage, but the trend of organic food is accelerating. Indian consumers are becoming more and more conscious about their health and environment. Consumers also associate organic food with the genuineness and tastes of the past and they are willing to pay higher premium price for it. A survey on the willingness to spend on organic food products among Indian consumers in September 2021, conducted by Rakuten Insight shows that about 33 percent of respondents were willing to spend up to 25 percent more than conventionally-grown food products to buy organic food thus income derived from organic farming is higher than conventional farming

Organic farming is more labor intensive, as manual labor is needed for weeding, application of organic fertilizers, and other operations hence more income generating jobs per farm

Organic farming can easily be adopted by small and marginal farmers who are the major land holders (86 percent) in India as it reduces the dependency on external inputs and



costly technologies moreover organic farming is also reviving our culture by bringing back indigenous knowledge, belief and value system ^[11]

Organic Agriculture and Sustainable Development

The concept of sustainability rests on the principle that we must meet the needs of the present without compromising the ability of future generations to meet their own needs.

Conservation of soil and local resources

Continuous degradation of soil fertility by chemical fertilizers leads to production loss and hence increases the cost of production which makes the farming economically unsustainable. Although crop nutritional requirements are the same for organic and conventional farms, organic producers apply natural materials and emphasize practices that retain and recycle nutrients within the soil. Organic farming operations like Planting cover crops, mulching, intercropping and agroforestry play an important role in protection against erosion and landslides. Water and nutrient retention capacity is also increased due to a higher level of organic matter and permanent soil cover.

Sustainable economic viability

Certified organic products provide access to attractive local and international markets for developing countries, while the producers generate higher incomes. In addition, due to long-term contracts, income is generated more continuously than in conventional trade thus ensuring long term economic viability. Organic farming appears to generate 30% more employment in rural areas and labor achieves higher returns per unit of labor input ^[12].

Present Status and future prospect of organic farming in India

Organic farming has risen to prominence as a viable alternative to conventional farming that not only solves quality, safety and ecological concerns, but also ensures economic sustainability. India ranked 8th with respect to the land of organic agriculture and 88th in the ratio of organic crops to agricultural land as per Agricultural and Processed Food Products Export Development Authority and report of Research Institute of Organic Agriculture.

India's APEDA reports that in 2020/2021 organic crop production reached 3.2 million metric tons. In 2020 organic cultivated acreage increased by some 30,000 hectares, growing by one percent from 2019 levels. By 2021, India has 1.19 million registered certified organic

farmers. It has another 1.13 million farmers practicing organic farming methods under the Participatory Guarantee System^[13].

Recently, the Government of India has implemented a number of programs and schemes for boosting organic farming in the country. Among these the most important include (1) The ParamparagatKrishiVikasYojana, (2) Organic Value Chain Development in North Eastern Region Scheme, (3) RashtriyaKrishiVikasYojana, (4) The mission for Integrated Development of Horticulture (5) National Project on Organic Farming (6) National Mission for Sustainable Agriculture

India's organic food sector is expected to grow at a compound annual growth rate (CAGR) of 10 percent in the 2016-2021 period from US \$386.32 million in 2015 and reach US \$10.75 billion mark by 2025. In the last few years, contribution to the growth in the Indian organic foods landscape has included various national level schemes to encourage organic farming, initiating new exports from the remote North East region, and improved market linkages of producer clusters with agribusiness, phytochemical, organized retail and e-commerce firms^[14]

Conclusion

Organic foods are superior in terms of health and safety than conventionally grown foods. Organic foods have gained popularity because people have become aware of their benefits. The organic farming process is environment friendly it maintains soil health, enhance bio-diversity and mitigate climate change. Moreover, the organic produce market is now the fastest growing market all over the world including India. Organic agriculture promotes the health of consumers of a nation, the ecological health of a nation, and the economic growth of a nation by income generation holistically. Thus we can conclude that organic farming is can help in building a healthy nation.

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