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## Organic Farming: An Importance and Benefits for Sustainable Agriculture in Rural Livelihoods

Lord Litan Debbarma<sup>1\*</sup> and Rahul Ghosh<sup>2</sup>

<sup>1</sup>Krishi Vigyan Kendra – Khowai, Divyodaya, Chebri, Khowai, Tripura (799 207), India

<sup>2</sup>ATMA (SMAE), Tulashikhar Agri Sub-division, Champahour, Khowai, Tripura (799 201), India

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### Corresponding Author

Lord Litan Debbarma  
e-mail: [lordlitan4@gmail.com](mailto:lordlitan4@gmail.com)

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E-mail: [bioticapublications@gmail.com](mailto:bioticapublications@gmail.com)

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### Abstract

Organic farming is a production management system excluding of all synthetic off farm inputs but rely upon on farm agronomic, biological and mechanical methods like crop rotations, crop residues, animal manures, compost and vermicompost, off-farm organic waste, mineral grade rock additives and biological system of nutrient mobilization and plant protection, etc. which promotes and enhances biodiversity, biological cycles and agro-ecosystem health. Organic farming was practiced in India since thousands of years. The great Indian civilization thrived on organic farming and was one of the most prosperous countries in the world, till the British role it. The role of organic farming in India rural economy can be leveraged to mitigate the ever increasing problem of food security of India.

### Introduction

Organic farming is an alternative agricultural system which originated early in the 20<sup>th</sup> century in reaction to rapidly changing farming practices. Organic farming continues to be developed by variance organic agriculture organizations today. Organic farming endorses the concept that the soil, plant, animal and humans are linked. Its goal therefore, is to create an integrated, environmentally sound, safe and economically sustainable agriculture production system. Soil is living system, linked to an organism with different components. Human interact with these natural components (minerals, organic matter, micro organisms, animals and plants) to achieve harmony with nature and create a sustainable agricultural production. A key feature of organic farming is the primary dependence on site specific natural resource and those developed locally (green manures, crop residues, farm wastes etc.) rather the external inputs (especially synthetics). The farmer manages self-regulating ecological and biological processes for sustainable and economic production of products. Organic agriculture method are internationally regulated and legally enforced by many nations, based in large part on the standards set by the International Federation of Organic Agriculture Movements (IFOAM), an International Umbrella Organization for organic farming organizations established in 1972.

### Organic Farming

Organic farming is the production of crops and livestock without the use of synthetic chemicals and inorganic fertilizers. Organic agriculture aims at the human welfare without any harm to the environment which is the foundation of human life itself.

In another definition FAO suggested that “Organic agriculture is a unique production management system which promotes and enhances agro-ecosystem health, including biodiversity, biological cycles and soil biological activity and this is

accomplished by using on farm agronomic, biological and mechanical methods in exclusion of all synthetic off-farm inputs.”

## Types of Organic Farming

**1. Pure Organic Farming:** It includes use of organic manures and bio-pesticides with complete avoidance of inorganic chemicals and pesticides.

**2. Integrated Farming:** It involves integrated nutrient management and integrated pest management. It is the type of farming in which development of crops from natural resources having the complete nutritive value and manages to prevent the crop or plants from the pests.

**3. Integrated Farming System:** In this type, local resources are effectively recycled by involving in other components such as poultry, fish pond, mushroom, goat rearing etc. apart from crop components. It is a low input organic farming.

## Components of Organic Farming

### a) Crop and Soil Management

The system aims is enhancing the organic matter levels in soil to maintain the long term fertility of soil. In this component, we give stress in selection of variety, timely sowing, crop rotation, green manuring, intercropping with legume, etc.

### b) Plant Protection

Insects, pathogens and other pests are controlled by primary relying on crop rotations, natural predators, resistant varieties, diversity and tillage. Thereafter, botanical, thermal and chemical interventions are applied as a last resort under restricted conditions.

### c) Nutrient Management

This management of nutrients in organic farming systems presents a formidable challenge, as the use of inorganic fertilizers is not permitted. Therefore

organic must optimize a range of soil, crop rotation and manure managements to ensure a nutrient supply which will guarantee optimum crop yields and minimize losses to the environment. To achieve this objective, an appreciation of the nutrient cycles in farming systems is essential which is possible through various practices.

### d) Livestock Management

Where livestock for organic production are maintained, they should be an integral part of the organic farm unit and should be raised and held according to these guidelines. Livestock can make an important contribution to an organic farming system by: improving and maintaining the fertility of the soil, managing the flora through grazing, enhancing biodiversity and facilitating complementary interactions on the farm, increasing the diversity of the farming system.

## Main Principles of Organic Farming

- To produce food of high quality in sufficient quality.
- To interact in a constructive and life-enhancing way with natural system and cycles.
- To encourage and enhance biological cycles within the farming system, involving micro-organisms, soil flora and fauna, plants and animals.
- To develop a valuable and sustainable aquatic ecosystem.
- To maintain and increase long term fertility of soils.
- To produce fully biodegradable organic products.
- To prevent of pollution.
- To allow everyone involved in organic production and processing a quality of life which meets their basic needs and allow and adequate return and satisfaction from their work, including a safe working environment. (Source: IFOAM, 2002).

## Benefits of Organic Farming

Table 1: Potential benefits of organic agriculture

Parameter	Potentials benefits
Agriculture	Increased diversity, long term soil fertility, high food quality, reduced pest/ disease, self-reliant production system, stable production.
Environment	Reduced pollution, reduce dependence on non-renewable resources, negligible soil erosion, wildlife protection, resilient agro ecosystem, compatibility of production with environment.
Social conditions	Improved health, better education, stronger community, reduced rural migration, gender quality, increased employment, good quality work.
Economic conditions	Stronger local economy, self-reliant economy, income security, increased returns, reduced cash investments, low risk.
Organizational/ institutional	Cohesiveness, stability, democratic organizations, enhanced capacity.

## Sustainable Agriculture

The form of agriculture aimed at meeting the food and fuel needs of the present generation without endangering the resource base for the future generations. It is an efficient management system of renewable resources including the soil, forests, crops, fish, livestock, biodiversity and ecosystems without degradation to provide adequate food and other needs of the present and future generations. Fortunately, there is growing interest in promoting sustainable agriculture, which is also referred to by other names such as organic farming, biological farming, natural farming, regenerative agriculture, permaculture etc.

### Organic Agriculture Contributes to Sustainable Development

Organic agriculture can contribute to meaningful socio-economic and ecologically sustainable development, especially in poorer countries. This is due on the one hand to the application of organic principles, which means efficient management of local resources (e.g. local seed varieties, manure, etc.) and therefore cost-effectiveness. Organic agriculture reduces the risk of yield failure, stabilizes returns and improves the quality of life of small farmers' families. To date, no systematic attempt has been made to evaluate the benefits and effects of each system. Organic farming appears to generate 30% more employment in rural areas and labour achieves higher returns per unit of labour input (Pandey and Singh, 2012).

### Organic Farming in Indian Rural Economy

The role of organic farming in India rural economy can be leveraged to mitigate the ever-increasing problem of food security of India. With rapid industrialization of rural states of India, there has been a crunch for farmland. Further, with the exponential population growth of India, the need for food sufficiency has become the need of the hour. Furthermore, the overuse of plant growth inhibitor, pesticides and fertilizers for faster growth of agricultural produce is detrimental to human health and the environment as a whole. The proposition of organic farming in India rural economy holds good, as an alternative to arrest this problem. The introduction of the process of organic farming in India rural economy is a new concept. The huge furor over the overuse of harmful pesticides and fertilizers to increase agricultural output has in fact catalyzed the entry of organic farming in India rural economy. The process of organic farming involves using of naturally occurring and decomposable matter for growth and disease resistance of different crops.

Agriculture was the main source of livelihood in India and the

use of naturally occurring matters for increasing productivity, disease resistance and pest control was always in use, since time immemorial. The use of oil cakes, cow dungs, neem leaves, etc. are still practiced in India to ward off pests and used as preservatives. The use of chemical fertilizer for increased productivity started from late 1850's. In India, the first use of chemical fertilizer for increased agriculture productivity started from 1906. India produced around 1.35 million MT (2015-16) of certified organic products which includes all varieties of food products namely Sugarcane, Oil Seeds, Cereals & Millets, Cotton, Pulses, Medicinal Plants, Tea, Fruits, Spices, Dry Fruits, Vegetables, Coffee etc. The production is not limited to the edible sector but also produces organic cotton fiber, functional food products etc.

### Advantages of Organic Farming in Indian Rural Economy

- The consumption of chemical fertilizers in comparison to organic fertilizers is always more, especially in unused cultivable lands.
- Moreover, chemical fertilizer needs huge quantities of water to activate its molecule whereas, organic fertilizers do not need such conditions.
- Further, chemical fertilizers almost always have some harmful effects either on the farm produce or on the environment.
- Furthermore, it can also produce harmful chemical compounds in combination with chemical pesticides, used to ward off harmful pests.
- The actual available area for cultivation of organic agriculture in India is much more than that is identified and certified so far.
- India has around 1,426 certified organic farms.
- India produces approximately 14,000 tons of output annually.
- It is estimated, that around 190,000 acres of land is under organic farming in India.

**The Indian states involved in organic farming in India are as follows:**

- Gujarat
- Kerala
- Karnataka
- Uttarakhand
- Sikkim
- Rajasthan
- Maharashtra
- Tamil Nadu
- Madhya Pradesh
- Himachal Pradesh

## Conclusion

**O**rganic farming works in harmony with nature rather than against it. This involves using techniques to achieve good crop yields without harming the natural environment or the people who live and work in it. An organic farmer produces vegetables, fruits, cereal crops, or livestock without the use of chemical fertilizers, pesticides, or herbicides. In another way organic farming is kind of agricultural that provide the consumers, with fresh, tasty and reliable food while regarding natural life cycle systems. In addition to health benefits of organic products for consumers, there are vital environmental benefits for the earth. An organic farming keeps biodiversity and reduce environmental pollutions such air, water and soil.

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