



## Organic Farming: Global and Indian Context

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### Summary

Organic farming is gaining gradual momentum now days, although the heritage of Indian agriculture reveals that the roots of agriculture have broadly based on organic farming practices. The need to feed the burgeoning population of the country led to the use of the ways and means for achieving fast growth in agriculture (food grain production) with the use of scientific and input intensive agriculture. The mis-management of agriculture inputs (fertilizers and pesticides) caused the problems of soil health; insect pests and disease and are taking complex shape and posing serious challenges for the researchers in future also. The increasing awareness among the people worldwide about the safety and quality of foods, the organic farming has emerged as an alternative system of farming which not only address the quality and sustainability concerns, but also aims at cultivating the land and raising crops in such a way, as to keep the soil alive and in good health by use of organic wastes and other biological materials along with beneficial microbes (bio-fertilizers) to release nutrients to crops for increased sustainable production in an eco-friendly environment. According to FAO “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”.

### Introduction

As of now a small industry, organic agriculture is becoming of growing importance in a number of countries, irrespective of their stage of development. For example, in several developed countries organic agriculture has come to represent a significant portion of the food system (10 percent in Austria, 7.8 percent in Switzerland) and many others are experiencing growth rates that exceed 20 percent annually (e.g. USA, France, Japan, Singapore). Some of the developing countries have small domestic organic markets (e.g. Egypt) and a few have begun to seize the lucrative export opportunities presented by organic agriculture (e.g. exports of Mexican coffee, Ugandan cotton).

Though only a small percentage of farmers are expected to become organic producers, consumer demand for organically produced food and fibre products provides new market opportunities for farmers and businesses around the world. It also presents new challenges for FAO. For many years, and with great success, the private sector alone has developed the concepts and markets for organic products. However, the surge in consumer interest has created new interest from the public sector, and developing countries are particularly in need of good information. Member countries are requesting FAO assistance as they seek to determine the potential of such markets in specific areas. Governments need to know the potential of organic agriculture to contribute to sustainability in order to direct research and extension efforts. Countries also seek FAO's assistance in deciphering the multitude of rules

various traders expect to be followed; increasing international trade in organic products has placed FAO in the forefront of efforts to achieve greater harmony in organic standards.

The World Food Summit Plan of Action recognized the importance of "appropriate input technologies, farming techniques and other sustainable methods, such as organic farming, to assist farming operations to be profitable, with the goal of reducing environmental degradation, while creating financial resources within the farming operation." This paper discusses the opportunities and constraints of organic agriculture and the public policies influencing the adoption of organic agricultural practices. The paper proposes a coherent and cross-sectoral FAO programme in organic agriculture with four distinct functions, all aimed at enabling member countries to make informed choices about organic management. COAG is asked to endorse FAO's intention to develop such a coherent programme.

According to the Union Ministry of Agriculture and Farmers' Welfare, organic farming is in a nascent stage in India. About 2.78 m ha of farmland was under organic cultivation as of March 2020. This is two per cent of the 140.1 million ha net sown area in the country. A few states have taken the lead in improving organic farming coverage, as a major part of this area is concentrated only in a handful of states. Madhya Pradesh tops the list with 0.76 million ha of area under organic cultivation — that is over 27 per cent of India's total organic cultivation area. The top three states — Madhya Pradesh, Rajasthan and Maharashtra — account for about half the area under organic cultivation. The top 10 states account for about 80 per cent of the total area under organic cultivation.

### **Global scenario of Organic farming**

Organic agriculture is practiced in 181 countries covering an area of 69.8 million hectares (including conversion areas) out of that 14 countries have ten percent organic agricultural land or more, and 16 countries have between 5 and 10 percent organic agricultural land. Global organic market reached 92.1 billion Euros (Lernoud and Willer, 2019). As per the available statistics, India's rank in terms of World's Organic Agricultural land was 9<sup>th</sup> and in terms of total number of producers was 1<sup>st</sup> as per 2018 data (Lernoud and Willer, 2018).

### **Important features of Indian organic sector**

With the phenomenal growth in area under organic management and growing demand for wild harvest products India has emerged as the single largest country with highest arable cultivated land under organic management. India has also achieved the status of single largest country in terms of total area under certified organic wild harvest collection. In India, total area under organic certification process (registered under National Programme for Organic Production) is 3.56 million ha (2017-18). This includes 1.78 million ha (50%) cultivable area and another 1.78 million ha (50%) for wild harvest collection. Among all the states, Madhya Pradesh has covered largest area under organic certification followed by Rajasthan, Maharashtra and Uttar Pradesh. During 2016, Sikkim has achieved a remarkable distinction of converting its entire cultivable land (more than 76000 ha) under organic certification. India produced around 1.70 million MT (2017-18) of certified organic products which includes all varieties of food products *viz.* oil seeds, sugarcane, 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. Among different states Madhya Pradesh is the largest producer followed by Maharashtra, Karnataka, Uttar Pradesh and Rajasthan. In terms of commodities Oil seeds are the single largest category followed by Sugar crops, Cereals and Millets, Fiber crops, Pulses, Medicinal, Herbal and Aromatic plants and Spices and Condiments. With the production of more than 77,000 MT of organic cotton lint India had achieved the status of largest organic cotton grower in the world a year ago, with more than 50% of total world's organic cotton (Shukla *et al.*, 2017). The total volume of export during 2017-18 was 4.58 lakh MT. The organic food

export realization was around INR 3453.48 crore. Organic products are exported to USA, European Union, Canada, Switzerland, Australia, Israel, South Korea, Vietnam, New Zealand and Japan.

### **Nodal agency for Organic farming**

National Centre of Organic Farming, Ghaziabad with its seven Regional Centres located at Ghaziabad, Bengaluru, Bhubaneswar, Imphal, Nagpur, Jabalpur and Panchkula have been functioning under NMSA for promotion of organic farming, through technical capacity building of all stakeholders including human resource development, transfer of technology, promotion and production of quality organic and biological inputs, awareness and publicity through print and electronic media.

**Organic production requirements:** The important organic production requirements as per national standards for organic production developed by APEDA are given below:

Organic agriculture means a process of developing a viable and sustainable agro-ecosystem. The time between the start of organic management and certification of crops and/or animal husbandry is known as the conversion period. The whole farm, including livestock, should be converted according to the standards over a period of three years. Organic certification is based on continuance. The certification programme should only certify production which is likely to be maintained on a long-term basis. Converted land and animals shall not get switched back and forth between organic and conventional management.

### **Crop production**

**Choice of crops and varieties** - All seeds and plant material should be certified organic. Species and varieties cultivated should be adapted to the soil and climatic conditions and be resistant to pests and diseases. In the choice of varieties genetic diversity should be taken into consideration. When organic seed and plant materials are available, they shall be used. When certified organic seed and plant materials are not available, chemically untreated conventional materials shall be used. The use of genetically engineered seeds, pollen, transgenic plants or plant material is not allowed.

**Duration of Conversion Period:** The establishment of an organic management system and building of soil fertility requires an interim period, the conversion period. The conversion period may not always be of sufficient duration to improve soil fertility and reestablish the balance of the ecosystem but it is the period in which all the actions required to reach these goals are started. The duration of the conversion period must be adapted to the past use of the land and the ecological situation. Plant products produced can be certified organic when the national standards requirements have been met during a conversion period of at least two years before sowing or in the case of perennial crops other than grassland, at least three years before the first harvest of products. The accredited inspection and certification agency may decide in certain cases to extend or reduce the conversion period in the light of previous status of the land but the period must equal or exceed twelve months.

**Diversity in Crop Production:** The basis for crop production in gardening, farming and forestry in consideration of the structure and fertility of the soil and surrounding ecosystem and to provide a diversity of species while minimizing nutrient losses.

Diversity in crop production is achieved by a combination of:

- a) a versatile crop rotation with legumes
- b) an appropriate coverage of the soil during the year of production which diverse plant species

**Fertilization Policy:** Sufficient quantities of biodegradable material of microbial, plant or animal origin should be returned to the soil to increase or at least maintain its fertility and the biological activity within it. Biodegradable material of microbial, plant or animal origin



produced on organic farms should form the basis of the fertilization programme. Fertilization management should minimize nutrient losses. Accumulation of heavy metals and other pollutants should be prevented. Non synthetic mineral fertilizers and brought in fertilizers of biological origin should be regarded as supplementary and not a replacement for nutrient recycling. Manures containing human excreta (faeces and urine) shall not be used. Chilean nitrate and all synthetic nitrogenous fertilizers, including urea, are prohibited.

**Pest, Disease and Weed Management including Growth Regulators:** Organic farming systems should be carried out in a way which ensures that losses from pests, diseases and weeds are minimized. Weeds, pests and diseases should be controlled by a number of preventive cultural techniques which limit their development, e.g. suitable rotations, green manures, a balanced fertilizing programme, early and pre-drilling seedbed preparations, mulching, mechanical control and the disturbance of pest development cycles. The natural enemies of pests and diseases should be protected and encouraged through proper habitat management of hedges, nesting sites etc. Pest management should be regulated by understanding and disrupting the ecological needs of the pests. An ecological equilibrium should be created to bring about a balance in the pest predator cycle. The use of synthetic herbicides, fungicides, insecticides and other pesticides is prohibited. The use of synthetic growth regulators and synthetic dyes is prohibited. The use of genetically engineered organisms or products is prohibited.

**Contamination Control:** All relevant measures should be taken to minimize contamination from outside and from within the farm. In case of risk or reasonable suspicion of risk of pollution, the certification programme should set limits for the maximum application levels of heavy metals and other pollutants. Accumulation of heavy metals and other pollutants should be limited. In case of reasonable suspicion of contamination, the certification programme shall make sure that an analysis of the relevant products to detect the possible sources of pollution (soil and water), shall take place to determine the level of contamination. For protected structure coverings, plastic mulches, fleeces, insect netting and silage rapping, only products based on polyethylene and polypropylene or other polycarbonates are allowed. These shall be removed from the soil after use and shall not be burnt on the farmland. The use of polychloride based products is prohibited.

**Soil and Water Conservation:** Soil and water resources should be handled in a sustainable manner. Relevant measures should be taken to prevent and water, excessive and improper use of water and the pollution of ground and surface erosion, salination of soil water. Clearing of land through the means of burning organic matter, e.g. slash-and burn, straw burning shall be restricted to the minimum. The clearing of primary forest is prohibited.

**Collection of Non Cultivated Material of Plant Origin and Honey:** When harvesting or gathering the products, attention should be paid to maintenance and sustainability of the ecosystem. Wild harvested products shall only be certified organic if derived from a stable and sustainable growing environment. Harvesting or gathering the product shall not exceed the sustainable yield of the ecosystem, or threaten the existence of plant or animal species. The collection area shall be at an appropriate distance from conventional farming, pollution and contamination.

### **Important web portal and websites**

**Jaivik Kheti Portal** – A dedicated portal for organic farming acting as both a knowledge platform as well as marketing platform will be developed. Details of farmers involved in Organic farming, input supplier, certification agency (PGS), and marketing agencies will be available for smooth implementation from production to marketing. PKVY/PGS groups can take the advantage of this portal for capacity building, technical know-how, communicating

with marketing channels/other groups and direct marketing of their produce to prospective buyers and consumers.

Website - <https://pgsindia-ncof.gov.in/pkvy/Index.aspx>

### Conclusion

Organic production is coming from farmer's movement and consumer's choice. All facilities need to be extended to organic farmers as they need appropriate package and practices, voluminous amount of organic inputs, low cost & easy certification process and good domestic as well as export market.

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