Organic Farming in India: - Cultivating a sustainable future

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Organic farming system in India is not new and is being followed from ancient time. It is a method of farming system which primarily aimed 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 (crop, animal and farm wastes, aquatic wastes) and other biological materials along with beneficial microbes (biofertilizers) to release nutrients to crops for increased sustainable production in an eco-friendly pollution free environment.

In recent years, organic farming has gained significant momentum in India as a viable and sustainable agricultural practice. With concerns about environmental degradation, food safety, and the need for long-term sustainability, organic farming has emerged as a promising solution. This article explores the growth of organic farming in India, its benefits, challenges, and the way forward for a greener and healthier agricultural sector.

Understanding Organic Farming

Organic farming is a holistic approach to agriculture that emphasizes the use of natural inputs and techniques while avoiding synthetic chemicals, genetically modified organisms (GMOs), and artificial fertilizers. The objective is to promote soil health, biodiversity, and ecological balance, resulting in nutritious, chemical-free produce.

Organic farming in India:-

India has a rich tradition of organic farming practices deeply rooted in its agricultural heritage. However, it wasn't until the early 2000s that the modern organic farming movement gained traction. Today, India stands as one of the largest organic producers globally, with over 1.5 million hectares of certified organic land.

The key characteristics of organic farming includes

- Protecting the long-term fertility of soils by maintaining organic matter levels, encouraging soil biological activity, and careful mechanical intervention
- Providing crop nutrients indirectly using relatively insoluble nutrient sources which are made available to the plant by the action of soil micro-organisms
- Nitrogen self-sufficiency through the use of legumes and biological nitrogen fixation, as well as effective recycling of organic materials including crop residues and livestock manures
- Weed, disease and pest control relying primarily on crop rotations, natural predators, diversity, organic manuring, resistant varieties and limited (preferably minimal) thermal, biological and chemical intervention
- The extensive management of livestock, paying full regard to their evolutionary adaptations, behavioral needs and animal welfare issues with respect to nutrition, housing, health, breeding and rearing
- Careful attention to the impact of the farming system on the wider environment and the conservation of wildlife and natural habitats

Key Features of Organic Farming

- Natural Livestock and Poultry Production.
- Natural Crop Production.
- Organic Weed and Pest Control.
- Soil Management.
- Buffer Zones and Record-Keeping.
- Maintaining Ecological Balance.
- Maintaining Fairness.

Benefits of organic farming: -

a. Environmental Conservation: Organic farming minimizes pollution brought on by synthetic chemicals, prevents soil erosion, and conserves water. By protecting native agricultural varieties, maintaining natural ecosystems, and fostering beneficial insects and wildlife, it encourages biodiversity.

b. Organic produce is safer and healthier for consumers because it doesn't include artificial additives or dangerous pesticide residues. Organic farming also promotes sustainable agricultural methods that protect the health of farmers and rural communities.

c. By removing their reliance on pricey synthetic inputs, small-scale farmers can benefit economically from organic farming. Local marketplaces, fair trade principles, and the development of enduring rural livelihoods are encouraged.

d. Sustainability over the long term. Many changes observed in the environment are long term, occurring slowly over time. Organic agriculture considers the medium- and long-term effect of agricultural interventions on the agro-ecosystem. It aims to produce food while establishing an ecological balance to prevent soil fertility or pest problems. Organic agriculture takes a proactive approach as opposed to treating problems after they emerge.

e. Air and climate change. Organic agriculture reduces non-renewable energy use by decreasing agrochemical needs (these require high quantities of fossil fuel to be produced). Organic agriculture contributes to mitigating the greenhouse effect and global warming through its ability to sequester carbon in the soil. Many management practices used by organic agriculture (e.g., minimum tillage, returning crop residues to the soil, the use of cover crops and rotations, and the greater integration of nitrogen-fixing legumes), increase the return of carbon to the soil, raising productivity and favoring carbon storage.

f. Ecological services. The impact of organic agriculture on natural resources favors interactions within the agro-ecosystem that is vital for both agricultural production and nature conservation. Ecological services derived include soil forming and conditioning, soil stabilization, waste recycling, carbon sequestration, nutrients cycling, predation, pollination and habitats. By opting for organic products, the consumer through his/her purchasing power promotes a less polluting agricultural system. The hidden costs of agriculture to the environment in terms of natural resource degradation are reduced.

Issues and Resolutions:

Education and Awareness: It is essential to educate people about the advantages of organic farming, including farmers, consumers, and legislators. The shift to organic practices can be facilitated by putting in place educational programmes, farmer training programmes, and certification programmes.

Resources: For many farmers, it's still difficult to get hold of organic seeds, organic fertilizer, and financial assistance. Governments and

organizations must make sure that resources for organic farming, such as financial options and market connections, are accessible and affordable.

Pest and Disease Management: Using natural methods to control pests and diseases is a challenge in organic farming. Research and development efforts should concentrate on creating disease-resistant crop types and efficient organic pest management methods.

Governmental Programmes:

The Indian government has launched a number of efforts to encourage the expansion of organic farming since it recognizes the potential of the practice. Farmers making the switch to organic practices can get financial incentives, technical help, and certification support from the Paramparagat Krishi Vikas Yojana (PKVY) and the National Programme for Organic Production (NPOP).

The Way Forward: -

Farmers, consumers, politicians, and the private sector must work together to fully realize the promise of organic farming in India. Research & development expenditures, supply chain improvements, and domestic and international organic product promotion will assist in the mainstreaming of organic farming.

Statistics of organic farming: -

The whole area subjected to the organic certification procedure as of March 31, 2023 is 10.17 mha (2022–2023) and is registered under the National Programme for Organic Production. There are 5391792.97 ha of cultivable land and another 4780130.56 ha for gathering wild produce.

Among all the states, Madhya Pradesh has covered largest area under organic certification followed by, Maharashtra, Gujarat, Rajasthan, Odisha, Karnataka, Uttarakhand, Sikkim, Chhattisgarh, Uttar Pradesh and Jharkhand.

Around 2.9 million MT (2022-23) of certified organic products were produced in India, including all types of food products such as tea, coffee, fruits, spices, dry fruits, vegetables, processed foods, oil seeds, fibre, sugar cane, cereals & millets, cotton, pulses, aromatic & medicinal plants, and processed foods. Producing organic cotton fibre, functional foods, and other items is also done in addition to the edible industry.

312800.51 MT worth of goods were exported in total between 2022 and 2023. The export of organic food brought in about INR 5525.18 Crore (708.33 million USD). USA, EU, Canada, UK, Switzerland, Turkey, Australia, Ecuador, Korea Republic, Vietnam, Japan, etc. are among the countries that import organic products.

Major components regarding organic farming in India (Panchagavya and Jeevamrutha)

An essential part of organic agricultural methods that have their roots in India is panchagavya. It is a conventional mixture comprised of five main components that come from cow-based products: milk, curd, ghee, cow dung, and cow urine. These components are skillfully combined to create a potent organic mixture that works as a natural pesticide and fertilizer. The multiple advantages of panchagavya in boosting soil fertility, encouraging plant development, and fending against pests and diseases are well known.

Panchagavya serves as a bio-stimulant in organic farming, enhancing the soil with vital nutrients and microbes. Its high nutrient content strengthens the soil's structure, boosts its capacity to retain

water, and spurs microbial activity, all of which improve crop output and quality. In addition to acting as a natural insecticide that doesn't affect the environment or people, panchagavya deters pests and insects and stops the spread of illness. Its organic makeup makes it the perfect option for farmers who practice chemical-free, sustainable agriculture, fostering a healthier environment and safer food production.

A crucial element of organic agricultural methods is jeevamrutha. It is a natural fertilizer and soil conditioner that is essential for boosting soil fertility and encouraging strong plant growth. When making jeevamrutha, numerous healthy elements are combined, including cow dung, cow urine, jaggery, gramme flour, water, and various healthy microbes. This organic mixture is full of microbes, enzymes, and important nutrients that support the overall health of the soil and plants.

Jeevamrutha, when applied to the soil, strengthens its structure, increases its ability to hold water, and enriches it with vital minerals. Additionally, it boosts soil microbial activity, encouraging the development of helpful microbes that help with nutrient cycling and disease prevention. Farmers can promote sustainable agriculture, lessen dependency on synthetic fertilizers, and produce healthy, nutrient-rich crops in an environmentally benign way by introducing Jeevamrutha into their organic agricultural practices.

Conclusion:

A promising step towards sustainable agriculture, organic farming in India ensures a healthier environment, better livelihoods for farmers, and safer food for customers. India can take the lead in promoting sustainable food systems and serve as a role model for the rest of the globe by adopting organic practices. Let's work together to promote the development of organic farming and build a greener, more sustainable future for future generations.

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