

Current Status and Future Outlook for Organic Farming in India

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Abstract

Introduction-Organic farming is not a present concept as it has a longstanding history in India, dating back to ancient times. It involves cultivation without the use of chemical fertilizers, synthetic pesticides, genetically modified organisms, growth hormones, and antibiotics. The agricultural development policy for developing countries should prioritize increasing land productivity while minimizing costs and maximizing efficiency, ensuring minimal harm to both human health and the environment. Organic farming plays a pivotal role in promoting food security, particularly for small farmers operating in traditional or low-input systems. It achieves this by improving yields and incomes, enhancing food availability through diversification and mixed farming, and reducing the risk of crop failure during extreme climate events. Additionally, organic agriculture contributes to the revival of traditional crop varieties and reintroduces traditional foods into the diets of farming communities, fostering cultural richness.

Purpose-This paper aims to create awareness about the need and importance of organic farming in India. This paper also provides a comprehensive study of the challenges and opportunities associated with organic farming, along with its current status in India.

Research Methodology- Secondary data is used for this study. Researcher has gone through various research papers, journals and other online data for this paper. Due to time limitation only secondary data is being analyzed by researcher.

Conclusion- The benefits of organic farming surpass the challenges it presents. Besides yielding healthier and more nutrient-rich food, organic farming promotes a sustainable and secure ecosystem. With adequate knowledge, training, and resource availability, it is possible to overcome the obstacles associated with organic farming. By endorsing organic farming practices, we have the potential to enhance our well-being, preserve the environment, and advance the state of agriculture.

Keywords- (Benefits, Challenges, Farming, Future, Organic)

Introduction

Agriculture plays an important role in the economy of India because there are more than 66% people depending on agriculture and their livelihood exists just because of agriculture. Today, to meet the vast need and demand of food and fiber. There is extensive use of chemicals in the agricultural field by farmers to increase the production, chemical fertilizer, pesticides, insecticide are in great demand because of their instant result on the production. It can be asserted that agriculture forms the cornerstone of India. Following independence, a critical imperative for the country has been to generate sufficient food to meet the expanding population's needs. Consequently, the adoption of high-yielding varieties has been accompanied by the application of irrigation, fertilizers, and pesticides to meet the need

of people for food also. Chemical fertilizers play an important role to meet nutrient requirement of the crop but their continuous use on lands will have deleterious effects on physical, chemical and biological properties of soil, which in turn reflects on yield (Aher et al., 2015) To overcome the problem of hunger, green revolution has come in 1966. In green revolution scientist suggested to use the chemical for better productivity but the suggestion of using chemical on crops is the need of that time because in 1960's, the situation was different from today every people was in hungry and there was a food crisis also. But today unfortunately farmers are using these chemicals for only production, not for better livelihood. So there is a huge need of adopting natural farming because the environment is degrading day by day and it became a cause of global warming, to reduce the anti-environmental impact, there is only one solution i.e. organic farming. Sustainable Agriculture is more a philosophy or way of life. Sustainable agriculture is able to feed the world without destructive the environment or fear provoking human health. It is a way of growing food in an ecologically and ethically responsible approach and it results in higher returns over time, with less need for high-priced and environmentally harmful inputs such as chemical fertilizers, pesticides and weedicides. Therefore, organic farming is an inherently indigenous idea in India, promoting agricultural sustainability. This method involves the sustainable cultivation of crops, utilizing locally available natural resources such as compost, farmyard manure, vermicompost, bio-fertilizers, bio-pesticides, and similar alternatives. To maintain ecological balance without any impact on productivity is the outcome of organic farming. The concept of organic farming is developing very fast and if we talk about present status of organic farming, there are more than 160 countries in the whole world who are practicing organic farming for food production on commercial basis because organic farming is the integrated system of farming that promote environmental sustainability, social and economic benefits also for food and fiber. Currently more than 160 countries are there who are practicing natural farming/ permaculture for sustainable development and reduction in chemical inputs. India holds the 11th position globally when it comes to the export of organic products. India has legacy of 30% in total organic product produce in the world. M.P. has covered largest area under organic certification. In Madhya Pradesh, certain areas, including Mandla, Dindori, Balaghat, Chhindwara, Betul, Katni, Umaria, Anuppur, and Damoh, are actively involved in organic farming practices. The overall production of organic products in India for the 2020-21 period amounted to 3,496,800.34 metric tons, with a total export volume of 888,179.68 metric tons during the same timeframe. The revenue generated from the export of organic food in 2020-21 was approximately INR 707,849.52/- (equivalent to 1,040.95 million USD). The major exporting countries are USA, European Union, Canada, Great Britain, Korea Republic, Israel, Switzerland, Vietnam and Australia.

Components under Organic Farming:

1. **Green Manuring:** Cultivation of plant and crops in the field and uproot them in the soil to make decomposed material to invert them in the field comes under green manuring. It increases soil fertility, soil structure. Crops used in green manuring are sunhemp, dhaincha, berseem, moong etc.
2. **Mulch:** Mulch is basically a material or crop residue to cover the plant to reduce evaporation losses and makes condition more favorable for crops and the process of doing mulch in the field is called mulching. Tender green leaves, twigs and plants, polythene can be used in mulching.
3. **Bio pesticides:** In this method, microorganism is used to control the pest population.
4. **Vermicompost:** Earthworms is regarded as "farmer's friend" and excreta of earthworms has nutrient content(3.0N,1.0P,1.5K) to help in maintaining soil health and this excreta is called vermicompost and the process of making vermicompost is called vermicomposting.
5. **Weed Management:** Management of weeds by cultural, biological and mechanical methods like churning, tillage comes under weed management.

6. **Bio fertilizer:** These are the strain of microorganism which have detrimental effect on pest without harming the environment and also reduces the dependency on chemical inputs.
7. **Crop management:** Changes in cropping system is also comes under organic farming, crop rotation is the best practice to enhance the fertility without deteriorating soil condition and pest adaptability also reduces.
8. **Farm yard manure:** Farmyard manure refers to the decomposed mixture of dung and urine of farm animals along with litter and left over material from roughages or fodder fed to the cattle and has nutrient content 0.5N,0.25P,0.5K.

Objectives

1. To create awareness about current scenario of organic farming in India.
2. To study the challenges associated with organic farming in India.
3. To explore the future scope for organic farming in India.

Research Methodology

This research paper is descriptive in nature. A detailed qualitative data is collected for this study. The type of data which is used for writing this research paper is secondary in nature. Researcher collected information from various, online research papers, journals, articles, online reports and other online information.

Current Status of Organic Farming in India

- According to the latest data from the FIBL & IFOAM Year Book of 2023, India is positioned as the sixth-largest country globally in terms of organic agricultural land and holds the first rank in the total number of producers, as of 2021. India stands out globally in the realm of organic agriculture, holding the sixth position worldwide in terms of organic agricultural land and topping the charts with the highest number of producers as of 2021. Despite 2.66 million hectares being dedicated to organic cultivation in 2021, the proportion compared to the total net sown area indicates substantial room for growth. As of March 31, 2022, the area undergoing organic certification reached 9,119,865.91 hectares, covering both cultivable land (4,726,714.74 ha) and wild harvest collection areas (4,393,151.17 ha).
- The certified organic production in the country for 2021-22 reached 3,430,735.65 metric tons, encompassing diverse food products such as oilseeds, fiber, sugar cane, cereals, millets, cotton, pulses, aromatic and medicinal plants, tea, coffee, fruits, spices, dry fruits, vegetables, and processed foods. Notably, this includes non-edible products like organic cotton fiber and functional food items. The export volume during this period amounted to 460,320.40 metric tons, contributing to an export realization of INR 5,249.32 crore (USD 771.96 million).
- India's organic products find their way to various international destinations, including the USA, European Union, Canada, Great Britain, Switzerland, Turkey, Australia, Ecuador, Korea Republic, Vietnam, and Japan. Over the past decade, there has been a substantial increase in the certified organic farming area, growing by more than 1.5 times from 5,550,405 hectares in 2011-12 to the current 9,119,866 hectares. Notably, Chhattisgarh leads the states in certified organic area, followed by Madhya Pradesh and Maharashtra in 2021-22.
- States like Bihar, Manipur, Mizoram, and Tripura have witnessed notable growth rates, while Sikkim achieved a remarkable feat by converting its entire cultivable land of more than 75,000 hectares to

organic certification by 2016. There is a rising awareness and inclination towards organic farming in India, leading to significant contributions to the global organic commodities market. In the fiscal year 2022, the export value of organic products soared to USD 771.96 million, showcasing a substantial increase compared to the USD 327 million recorded in 2015. Major contributors to this export success at the state level include Madhya Pradesh, Maharashtra, Gujarat, Haryana, New Delhi, and Karnataka in 2021-22.

Challenges

1. Insufficient Awareness

Many farmers in the country lack clear understanding and awareness about the benefits of organic farming compared to conventional methods. The utilization of bio-fertilizers and bio-pesticides necessitates awareness and willingness within the farming community. Knowledge regarding the availability and effectiveness of supplementary nutrients to enhance soil fertility is crucial for boosting productivity. Farmers often lack expertise in modern compost-making techniques, resorting to basic pit-filling with minimal waste. Adequate training is essential to equip farmers with the skills needed for efficient organic residue recycling.

2. Challenges in Marketing Outputs

Before transitioning to organic farming, ensuring the marketability of produce, and securing premium prices compared to conventional products is imperative. The failure to command premium prices, especially during the period required to achieve productivity levels equivalent to conventional crops, poses a significant setback. For instance, in Rajasthan, organic wheat farmers faced reduced numbers, and buyers were unwilling to pay higher prices for organic wheat compared to conventional varieties. Marketing costs for both types of products, such as wheat, add to the challenges.

3. Biomass Shortage

There is uncertainty among experts and informed farmers about whether organic materials can provide all the necessary nutrients in sufficient quantities. Even if this challenge can be overcome, there is a perception that the available organic matter might not be adequate to meet requirements. Crop residues, essential for vermicompost preparation, are often utilized as fodder and fuel instead of being retained on farms. Small and marginal cultivators face difficulties in accessing organic materials compared to readily available chemical-based fertilizers, especially when financial constraints are a limiting factor. The growing population and the disappearance of common lands, including wastelands and government-owned areas, further complicate the acquisition of organic resources.

4. Lack of Adequate Infrastructure Support

Despite the introduction of the National Programme for Organic Production (NPOP) in 2000, state governments have not formulated comprehensive policies or established credible mechanisms for effective implementation. Accreditation agencies are limited in number and expertise, primarily focusing on fruits, vegetables, tea, coffee, and spices. The current shortage of certifying agencies, the absence of recognized green markets, underdeveloped trade channels, and insufficient infrastructure for farm verification leading to certification pose significant challenges.

5. Elevated Input Costs

Small and marginal farmers in India traditionally practiced a form of organic farming within traditional farming systems, utilizing local or on-farm renewable resources in an ecologically friendly manner. However, the costs of organic inputs have risen, surpassing those of industrially produced chemical fertilizers and pesticides used in conventional farming. Essential organic materials like groundnut cake, neem cake, vermicompost, silt, cow dung, and others applied as organic manure have become increasingly expensive, rendering them unaffordable for small cultivators.

6. Market Challenges for Organic Inputs

Bio-fertilizers and bio-pesticides struggle to gain popularity in the country, primarily due to the lack of established marketing and distribution networks. Retailers are often uninterested in dealing with these products due to low demand. Additionally, the higher profit margins associated with chemical fertilizers and pesticides, along with extensive advertising campaigns by manufacturers and dealers, contribute to the limited market for organic inputs in India.

7. Absence of an Effective Agriculture Policy

The absence of a suitable agriculture policy in India hampers the promotion of organic farming, both for export and domestic consumption. Addressing critical issues such as ensuring food security for millions of the poor, national self-sufficiency in food production, and regulating product and input supplies requires the formulation of a comprehensive agriculture policy that can effectively promote organic agriculture on a large scale.

8. Insufficient Financial Support

Developing countries like India face the challenge of creating numerous national and regional standards aligning with those of developed nations. The adoption and maintenance of such a regulatory framework, along with its implementation, incur substantial costs. The certification process, a major expense involving periodic inspections by certifying agencies with the flexibility to determine timing, type, and frequency of inspections, poses a burden, particularly for small and marginal farmers. The fees charged by international agencies before the introduction of the National Programme for Organic Production (NPOP) were prohibitive, hindering the promotion of organic farming.

9. Low Crop Yields

Farmers often encounter yield losses when transitioning from synthetic inputs to organic farming methods. The restoration of full biological activity, including beneficial insect populations, nitrogen fixation from legumes, pest suppression, and addressing fertility issues, takes time. The reduction in yield rates during this transition period is a consequence of this interim phase. Small and marginal farmers are reluctant to bear the risk of lower yields in the initial 2-3 years of organic farming, and there are no compensatory schemes during this gestation period. The price premiums on organic products may not provide sufficient relief, especially as they diminish with increased availability of organic farm products.

10. Inability to Meet Export Demands

While there is high demand for organic products in advanced countries like the USA, European Union, and Japan, India faces challenges in meeting this demand. Despite the willingness of US consumers to pay a premium of 60 to 100 percent for organic products, the supply from India falls short. Although India is renowned as a tea supplier in

the global organic market, there is untapped potential to export coffee, vegetables, sugar, herbs, spices, and vanilla. Various initiatives to produce and export organic produce have resulted in only about 14,000 tonnes of aggregate production for export, indicating a need for further efforts to meet international demand.

11. Influence of Vested Interests

The pesticide industry and importers of these inputs into the country have a vested interest in hybrid seeds designed to respond to fertilizers and chemicals used in conventional farming. Opposition to organic farming often stems from these interests.

12. Lack of Quality Standards for Bio-Manures

The rising popularity of organic farming in India has led to a need for standardized quality parameters for bio-fertilizers and bio-manures. With numerous brands claiming high levels of natural nutrients, many farmers are unaware of potential issues with commercially available bio-manure products. Faulty production methods leading to chemical contamination may disqualify products from being certified as organic. Parameters for bio-manure produced through vermicomposting or microbe composting are yet to be finalized.

13. Political and Social Factors

Agricultural practices in India are subject to political interventions aimed at garnering electoral support. Policies such as subsidies, controlled prices for inputs, and government support for various agricultural products often serve political objectives. Initiatives promoting organic farming face opposition from those benefiting from conventional farming policies. In a democratic system like India, policy formulation that affects voting bloc interests is likely to be avoided unless counterforces demanding change become more powerful. Additionally, the organized workforce in public sector industries such as fertilizers, pesticides, and seeds may oppose government efforts to promote large-scale organic farming due to concerns about job security and other considerations.

Benefits of Organic Farming

1. Soil Preservation

A fundamental advantage of organic farming lies in its dedication to maintaining soil well-being. By eschewing chemical fertilizers and pesticides, organic farmers safeguard the inherent composition of the soil, fostering biodiversity and preserving crucial microorganisms essential for nutrient-rich crops. The applications of organic farming span from enhancing soil health to conserving biodiversity, showcasing its diverse and impactful uses.

2. Water Efficiency

Organic agricultural practices prioritize the efficient use of water. Through the utilization of natural irrigation methods, crop rotation, and mulching, farmers can minimize water consumption, ensuring the judicious and sustainable utilization of this valuable resource.

3. Ecologically Responsible

If you seek to make a positive environmental impact, the significance of organic farming cannot be overstated. This method actively champions biodiversity and ecosystem well-being. By steering clear of detrimental chemicals, it

reduces pollution and contributes to wildlife preservation, fostering a harmonious coexistence between agriculture and nature.

4. Support for Farmers' Livelihoods

Organic farming empowers farmers by reducing their reliance on expensive chemical inputs. Embracing organic practices has the potential to boost profits and enhance economic stability for farmers. It establishes a beautiful connection with our cherished farmers, allowing them to cultivate hope and harmony with the land. AsmitA Organic Farms, driven by a love for our planet, dedicates 2% of revenue to these unsung heroes, nurturing not just the Earth but the lives of those tending to it—small farmers, the heart and soul of our shared journey.

5. Safer Crop Cultivation

Organic crops are devoid of harmful chemical residues, making them safer for both farmers and consumers. Opting for organic farming ensures the production of wholesome, pesticide-free food, such as everyday cereals and pulses, contributing to healthier diets and reducing the risk of health-related issues.

6. Long-Term Viability

Sustainable organic farming practices prioritize long-term benefits over short-term gains. By emphasizing crop rotation, natural pest control, and composting, organic farming ensures that the land remains fertile for future generations.

7. Health Advantages of Organic Farming

Organically grown crops are rich in essential nutrients, promoting improved human health. Additionally, consuming food free from chemical additives and pesticides may decrease the risk of certain diseases and allergies.

8. Animal Well-Being

The benefits of organic farming extend to animals by promoting pasture-based systems and prohibiting the use of growth hormones and antibiotics. This ensures ethical and humane treatment of farm animals, allowing them to roam freely, such as in the case of grass-fed cows for products like Organic Cow Ghee.

9. Carbon Storage

Organic farming plays a crucial role in combating climate change. By promoting healthier soil with increased organic matter, carbon is sequestered from the atmosphere and stored in the ground, thereby reducing greenhouse gas emissions.

10. Climate Adaptability

Organic farming has demonstrated greater resilience in the face of extreme weather events. Organic farms exhibit improved water retention, reduced soil erosion, and enhanced adaptability to changing environmental conditions.

11. Job creation

Organic farming can create various jobs for people. It can create jobs for less educated people also. Organic farming needs more manpower.

Future of Organic Farming in India

- India is currently undergoing a significant shift towards organic farming, driven by increasing awareness of the harmful effects of chemical fertilizers and pesticides. This movement is seen as a sustainable and environmentally friendly alternative to conventional farming, emphasizing practices that maintain soil fertility and control pests through natural means. Although organic farming demands more labor and time, the potential benefits, including reduced carbon footprint, guaranteed food security, and sustainable practices, make it a worthwhile investment for the future. The organic food market in India is experiencing substantial growth, with a value of USD 849.5 million in 2020 and an expected CAGR of 20.5% from 2021 to 2026, reaching approximately USD 2601 million. Factors contributing to this growth include increasing health awareness, rising disposable incomes, and the establishment of organic food retail chains.
- Patience is crucial for success in organic farming, an integral part of sustainable agriculture in India. Despite potential rewards, farmers face challenges such as limited knowledge, infrastructure constraints, and a lack of certification standards for organic produce. Similar to raising a child, organic farming demands attention, care, and dedication, but the long-term rewards in terms of better yields and soil health are substantial.
- Transitioning to organic farming is a gradual process that requires planning and management. Just as losing weight requires gradual adaptation, the shift to organic farming involves starting with small quantities of organic products and gradually increasing proportions based on crop, soil, and geography. Organic farming has the potential to revolutionize agriculture in India by providing an eco-friendly alternative to conventional techniques. To ensure its success, government, NGOs, and stakeholders must collaborate to facilitate its widespread adoption and success.
- Organic farming contributes to sustainable development by maintaining environmental balance and using organic fertilizers, in contrast to traditional farming practices that rely on harmful chemicals. It produces toxin-free food, maintains soil fertility, and contributes to ecological balance. Sustainable development encompasses social, economic, environmental, and institutional dimensions, emphasizing a balanced and mutually beneficial interaction between corporate, government, and civil society interests.
- Information technology plays a crucial role in supporting organic farming by unlocking creative potential and knowledge, managing factors like weather forecasting, crop treatment, and storage conditions, and providing access to expert advice. Awareness of the latest technology and resources can significantly improve crop quality and quantity, creating job opportunities in rural areas.

Conclusion

- The benefits of organic farming surpass the challenges it presents.
- Besides yielding healthier and more nutrient-rich food, organic farming promotes a sustainable and secure ecosystem.
- Organic agriculture is a comprehensive system of production management that prioritizes and enhances the health of agro-ecosystems, encompassing biodiversity, biological cycles, and soil biological activity.
- The foundational principles of organic agriculture, including Health, Ecology, Fairness, and Care, guide its growth and development.
- Due to its avoidance of synthetic inputs like chemical fertilizers, pesticides, and insecticides, coupled with mandated 'soil-building' crop rotations, organic farming exhibits superior environmental performance per unit area compared to conventional agriculture.
- Organic management practices offer an opportunity to enhance soil fertility and mitigate soil degradation, with the use of bio fertilizers playing a crucial role in ensuring long-term soil fertility and sustainability.
- While nutritional differences between organic and conventional produce appear minimal, studies on this subject have been limited by inadequate controls for potential confounders, such as moisture, product maturity, and measurement techniques. Other factors like climate, soil quality, water availability, cropping methods, and processing techniques also influence nutritional levels.
- Numerous studies confirm that organic produce contains fewer pesticide residues than its conventional counterpart, leading to reduced human exposure to pesticides.
- The adoption of labor-intensive organic agriculture in rural areas not only creates employment opportunities but also facilitates the inclusion of women who may face barriers in accessing formal credit markets and purchasing agricultural inputs.
- From an economic standpoint, organic agriculture brings several benefits for farmers, including cost-effective inputs, higher and more stable prices, and the opportunity for organization through farmer cooperatives. In countries like India, sustainable agriculture, particularly organic farming, can address challenges related to food security, job creation, and poverty reduction.
- Although the transition from conventional to organic farming incurs increased production costs and certification expenses, hindering widespread adoption, the organic share of total agricultural land is gradually increasing, reaching 1.3 percent. The demand for organic products is rising both domestically and globally, indicating substantial untapped export potential for certified organic products.
- There is need for knowledge on both sides, farmers as well as consumers in markets.

Recommendations

- Awareness programmes should be organized in urban as well as rural areas so that all kind of people can get knowledge about it.
- People of all income group should be targeted.
- Organic products should come in small trial packs also so that more people can purchase it for trial. It can create more customers for organic products.
- Seminars should be organized at graduation level for students. It will help in circulation of knowledge about organic India at a faster rate.
- Government should implement more policies for organic farming. Micro finance facilities should be provided to small farmers for organic farming.
- Proper certification procedure should be done in all areas for organic farming. So that customers can recognize organic products easily.
- Outlets should be opened for selling specifically organic products. If sale is good then it will motivate farmers to produce more organic products.
- Subsidies should be provided by Government for promoting organic farming.

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