

Organic farming in India: Benefits and Challenges

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Abstract

There is a developing significance on health benefits as people are getting cognizant about the food themselves their relatives and family members. Thus, there is a degree for organic farming developed products. Prior people used to expend quality local vegetables, heartbeats and organic products. This brought about a life span and solid way of life. This paper provides an overview of organic farming benefits and challenges and its present scenario in India.

Keywords: *Organic farming, Organic products, Soil health, Climate Change, Biomass, Biodiversity.*

Introduction

Agricultural development policy for developing countries needs to focus on increasing the productivity of the land under cultivation, with lower costs, higher efficiency of products with little or no damage to both humans and the environment. Nedumaran, et al (2020) Organic farming systems have attracted increasing attention over the last one decade because they are perceived to offer some solutions to the problems currently besetting the agricultural sector. Organic farming has the potential to provide benefits in terms of environmental protection, conservation of non-renewable resources and improved food quality. Charyulu, and Dwivedi, (2016) Organic farming is a societal need; it is not only from the consumer's perspective but also from a farmer point of view. For the transformation of rural agriculture into a well sustainable agriculture, organic farming might become a panacea which can build a plinth for sustainable agriculture and reimburse conversion cost and maintain the sustainability of soil. Yadava, (2019)

India is home to 30 per cent of the total organic producers in the world, but accounts for just 2.59 per cent (1.5 million hectares) of the total organic cultivation area of 57.8 million hectares, according to the World of Organic Agriculture 2018 report. Pandey and Sengupta(2018)

(A majority of the farming community is resource poor and purchasing fertilizers and chemicals in adequate quantities is beyond their capacity, thus encouraging organic farming. Moreover, Organic farming is favorable for small and scattered agriculture land holders. Singh, (2019)

Review of Literature

According to Mendon et al, (2020) the farming of organic products is a unique practice which balances the environmental sustainability and also controls the detrimental effect both on customer's safety by creating a positive notion in the minds of the customers. Varkey, (2020) contends that countries, developing as well as developed are emphasising environment sustainability of agricultural production, methods and practices. The traditional wisdom of farmers on indigenous agrarian practices increasingly being called into question owing to a host of factors.

The work of Magnaye, (2018) examines the relationship between smallholder organic farming and entrepreneurship taking into account the environmental conservation approach of organic farming and the economic enhancement features of entrepreneurship. Furthermore, it intends to determine, through qualitative analysis using case studies, how smallholder organic farming can be planned, and the competencies needed by an organic farmer when venturing into an organic farm enterprise. On the other hand Giovannucci, (2007) assert that generally speaking, find that there is significant evidence that organic methods could be favorable for small farmers. In fact, most of the cases clearly noted a number of direct benefits and related externalities from which it is reasonable to conclude that the promotion of organic agriculture methods among small and resource-poor farmers can be well warranted. Yadav, et al, (2013) add that in the post independence period, the most important challenge in India has been to produce enough food for the growing population. Hence, high-yielding varieties are being used with infusion of irrigation water, fertilizers.

Objective

- To study the importance of organic farming in this era.
- To study the benefits and challenges of organic farming.

Organic farming

The term "organic farming" was coined by Lord Northbound in 1940. The beginnings of the organic movement can be traced back to the beginning of the 1800s. In 1840 Justus Von Liebig developed a theory of mineral plant nutrition. Liebig believed that manure could be directly substituted by certain mineral salts. Filipovich, (2020)

Figure1: Organic Farming



Source: Bighaat (2017)

Organic Farming in India

Ever increasing population as opposed to an ever decreasing supply of living resources like food and water has made it necessary to increase agricultural production and stabilize it in a viable and feasible manner. The benefits of 'Green Revolution' credited to Dr. MS Swaminathan have now reached a plateau and with diminishing returns it has become necessary to devise alternate techniques. In addition, the excess use of fertilizers and artificial growth regulators has led to an issue called 'pollution'. The need of the hour is a natural balance between life and property for existence. Keeping in view the fact that fossil fuels are on their way of extinction and are non-renewable, organic, nature friendly ways of farming and agriculture has gained importance. (<https://www.farmingindia.in/organic-farming/>)

India produced around 2.75 million MT (2019-20) of certified organic products which includes all varieties of food products namely Oil Seeds, Sugar cane, Cereals & Millets, Cotton, Pulses, Aromatic & Medicinal Plants, Tea, Coffee, Fruits, Spices, Dry Fruits, Vegetables, Processed foods 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, Tea & Coffee, Fiber crops, fodder, Pulses, Medicinal/ Herbal and Aromatic plants and Spices & Condiments. The total volume of export during 2019-20 was 6.389 lakh MT. The organic food export realization was around INR 4,686 crore (689 million USD). Organic products are exported to USA, European Union, Canada, Switzerland, Australia, Japan, Israel, UAE, New Zealand, Vietnam etc. In terms of export value realization Processed foods including soya meal (45.87%) lead among the products followed by Oilseeds (13.25%), Plantation crop products such as Tea and Coffee (9.61%), Cereals and millets (8.19%), Spices and condiments (5.20%), Dry fruits (4.98%), Sugar (3.91%), Medicinal plants (3.84%) and others. (http://apeda.gov.in/apedawebsite/organic/Organic_Products.htm)

Types of Organic Farming

Pure organic farming

It involves the use of organic manures and biopesticides with complete avoidance of inorganic chemicals and pesticides (Kankam, et al ,2020)

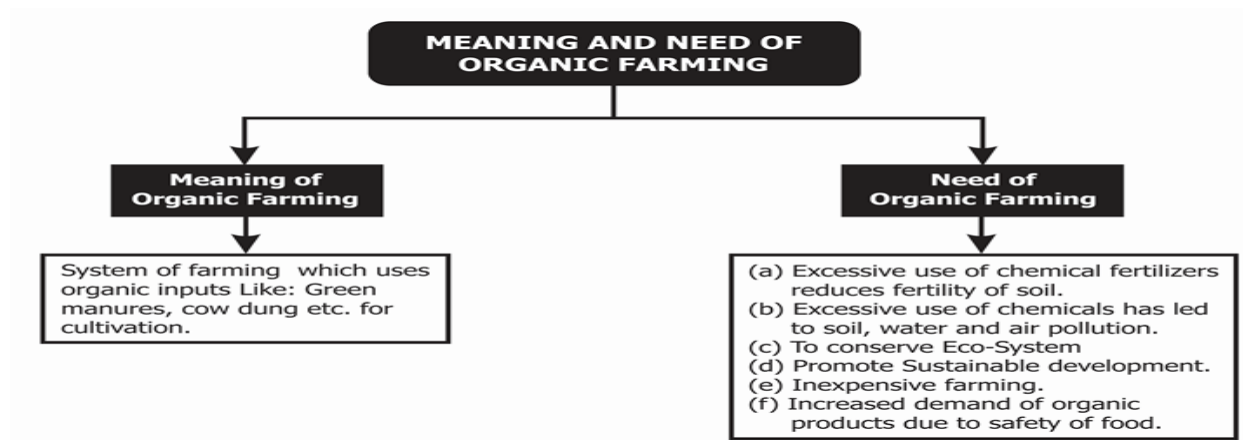
Integrated Organic Farming Systems

Pure organic farmers don't want to use much or any technology in their work. This is different from integrated organic farming systems, which use all technology they can get to make their life easier and to make more food. But, they still don't include some big amounts of chemicals or pesticides or something like that. Still inside organic rules. (<https://farmingbase.com/organic-farming-types-importances-advantages-and-benefits/>)

Integrated organic farming

Integrated organic farming involves integrating techniques aimed at achieving ecological requirements and economic demands such as integrated pest management and nutrients management. (<https://byjus.com/biology/agriculture-and-organic-farming>)

Figure 2: Meaning and Importance of Organic Farming



Source: <https://byjus.com/commerce/organic-farming/>

Difference between organic farming and conventional farming

S.NO	Organic Farming	Conventional Farming
	Organic manures, compost, vermicompost	Synthetic non organic insecticides
	Green manures	Weedicides
	Cover crops & mulches	Genetically Modified Organisms (GMO) seeds
	Nutrient fixing & solubilizing microbes	Plant growth hormones
	Natural Minerals	Synthetic dyes and colors
	Beneficial organisms	Sewage irrigation
	Biological pest control agents, traps and cow based preparations	Artificial ripening chemicals
	Companion crops and trap crops	Plant antibiotics
	Mechanical weeding	Soil fumigants

Source: <https://adyanaturals.com/the-organic-philosophy.html>

Government Initiatives to Promote Organic Farming

Paramparagat Krishi Vikas Yojana (PKVY)

Paramparagat Krishi Vikas Yojana promotes cluster based organic farming with PGS (Participatory Guarantee System) certification. Cluster formation, training, certification and marketing are supported under the scheme. Assistance of Rs. 50,000 per ha /3 years is provided out of which 62 percent (Rs. 31,000) is given as incentive to a farmer towards organic inputs.

(<https://agriculturepost.com/5-govt-schemes-promoting-organic-farming-in-india/#:~:text=The Government of India provides, the country though different>)

Rashtriya Krishi Vikas Yojna

Assistance for promotion of organic farming on different components are also available under Rashtriya Krishi Vikas Yojana (RKVY) with the approval of State Level Sanctioning Committee. (<http://www.indianbotanists.com/2014/02/avail-benefits-from-government-schemes.html>)

One District - One Product (ODOP)

The programme aims to encourage more visibility and sale of indigenous and specialized products/crafts of Uttar Pradesh, generating employment at the district level. The presence of aggregators is imperative to bring about economies of scale for the small and marginal farmers. (Drishti IAS, 2020)

National Mission on Oilseeds and Oil Palm (NMOOP) Financial assistance @ 50% subsidy to the tune of Rs. 300/- per ha is being provided for different components including bio-fertilizers, supply of Rhizobium culture/Phosphate Solubilising Bacteria (PSB)/Zinc Solubilising Bacteria (ZSB)/Azatobacter/ Mycorrhiza and vermicompost. (<https://pib.gov.in/Pressreleaseshare.aspx?PRID=1656146>)

The Organic Farming Action Programme 2017-2020

The objective of the Organic Farming Action Programme is to promote and significantly develop organic farming by means of priority measures

- **As a particularly high number of organic farms are active in Uniq areas**, they also obtain **a quarter of the compensatory allowance** for less-favoured areas.
- **Bonus for organic production, the so-called 'Biobonus'** (higher subsidy, better assessment in the selection process) in connection with aids granted for **investments, processing and marketing, education, information, and sales.**

A holistic philosophy and a farming cycle as complete as possible, with a diverse structure, are the principles and prerequisites of successful organic farming. The natural resources of soil and water are used in an environmentally compatible manner and are preserved for future generations (<http://www.organicfarmbest.com/organic-farm/>)

Challenges in Organic Farming

Shortage of Biomass

Many experts and well informed farmers are not sure whether all the nutrients with the required quantities can be made available by the organic materials. Even if this problem can be surmounted, they are of the view that the available organic matter is not simply enough to meet the requirements. (<https://www.yourarticlelibrary.com/essay/major-problems-and-constraints-for-organic-farming-in-india/25013>)

Disparity of Supply and Demand

Non-perishable grains can be grown anywhere and transported to any location but this is not the case with fruits and vegetables. It should be produced locally for which there should be willing companies, aggregators and farmers around that particular area from where the demand is coming. But generally, the demand comes from metros where there are no farmlands to produce organic fruits and vegetables. Smart transport and dedicated channels of supply are the solutions to this disparity. (<https://www.bizencyclopedia.com/article/major-challenges-in-organic-farming-in-india>)

Time

Indeed, organic farming requires greater interaction between a farmer and his crop for observation, timely intervention and weed control for instance. It is inherently more labor intensive than chemical/mechanical agriculture so that, naturally, a single farmer can produce more crops using industrial methods than he or she could by solely organic methods ([https://small-farm-permaculture-and-sustainable living.com/](https://small-farm-permaculture-and-sustainable-living.com/))

High MRP

It is almost obvious that due to the extreme care taken to go along with organic farming, the results would be kept at a high price. Once sold to the market, most of the place is devoted to the sale of these organic fruits and vegetables. Most people do that to approve of organic products because of this. The items sold in the market are half the price of non-organic products. So, we can say that organic items are expensive and not every consumer is willing to pay the price for it. (<http://www.akmindia.in/organic-farming-pros-cons/>)

Lack of special infrastructure

Most large organic farms still operate in an industrialized agriculture style, including industrial transportation of the food from field to plate. Unfortunately, this involves the adoption of the same environmentally harmful practices as those of factory farms which are however hidden under the cover of being organic. (<https://greentumble.com/pros-and-cons-of-organic-farming/>)

Benefits of organic farming

Better Taste and More Nutrition

Fruits and vegetables that are organically raised have a much better taste than other mechanically farmed ones. This is due to the fact that they are given a much longer time to develop and are not pumped with artificial things. The sugar structures in these crops have more time to mature and develop into a tasty and nutritious product. (<https://www.b2bio.bio/en/noticias-productos-ecologicos/ventajas-y-desventajas-del-agricultura-organica/>)

Reduces pesticide and chemical residue in soil

Organic farming minimizes the use of pesticides and chemicals thereby reducing the major environmental issues. It ensures the health of soil, water, air and flora and fauna. Also reduces the major environmental issues like soil erosion, air pollution, water pollution etc.

Promotion of Biodiversity

Crop rotation to build soil fertility and raising animals naturally helps promote biodiversity, which promotes greater health across all living species. As organic farms provide safe havens to wildlife, local ecosystems also improve. (<https://precisionagricultu.re/8-benefits-of-organic-farming/>)

Consumes Less Energy

Organic farming does not rely on the use of synthetic fertilizers as opposed to conventional techniques that are generous with these external chemicals. Avoiding fertilizers contributes to a greater cause of energy conservation. This is because manufacturing synthetic fertilizers consumes a significant amount of energy. On average, it's safe to say that the energy usage is lower by at least 30-50% in the organic farming systems. The British Department for Environment, Food and Rural Affairs in one of their reports

suggested that organic crops and organic dairying use 35% and 74% less energy respectively than their conventionally grown counterparts.(<https://suminterindiaorganics.com/here-are-the-5-key-environmental-benefits-of-organic-farming/>)

Long-term sustainability

Organic farming is a long-term, sustainable approach to food production. Organic farming takes a proactive, preventative approach instead of dealing with problems after they emerge which can be too late.(<https://www.econation.co.nz/organic-food/>)

Reduced erosion and better water management

Both soil improvement and the concept of keeping the ground “covered” as much as possible, either by mulches or cover crops, reduces soil erosion. Soils with improved structure and higher content of organic matter and the more compact growth of an organic crop also reduces the water consumption in agriculture.(<http://grolink.se/resources/oa/benefits-of-organic-farming/>)

Familiarity with the techniques

Organic farming is like going back to the roots before mechanization hit the lands. Thus the farmers can easily understand and adapt to the techniques of organic farming that deploys traditional knowledge. The farming techniques are based on how well a farmer can make the best use of his immediate natural resources.(<https://www.24mantra.com/blogs/organic-lifestyle/what-if-india-goes-fully-organic-how-will-this-benefit-the-farmers/>)

Conclusion

The phenomenon of ‘Organic agriculture’ is the only solution to nurture the land and to regenerate the soil by going back to our traditional method of farming i.e., free from chemicals, pesticides and fertilizers. This is a possible step for sustainable development by choosing not to use chemicals, synthetic materials, pesticides and growth hormones to produce high nutritional quality food and in adequate quantities (Onkar and Suryawanshi,2019) Organic farming is an option agricultural system which quickly changes farming rehearsals. It depends on composts of natural starting points, for example, fertilizer excrement, green excrement, and bone feast and so forth substantially more than deciding not to utilize pesticides, fertilizers.

References

1. Admin. (2015, February 27). 8 Benefits of Widespread Organic Farming. Retrieved from <https://precisionagricultu.re/8-benefits-of-organic-farming/>
2. Admin. (2020, August 05). Introduction to Agriculture and Basic Methods of Organic Farming. Retrieved from <https://byjus.com/biology/agriculture-and-organic-farming/>
3. Advantages and Disadvantages of Organic Farming. (2019, August 02). Retrieved from <https://tutsmaster.org/advantages-and-disadvantages-of-organic-farming/>
4. Advantages and disadvantages of Organic Farming. (n.d.). Retrieved from <https://www.b2bio.bio/en/noticias-productos-ecologicos/advantages-and-disadvantages-of-organic-farming>
5. Agriculture Post. (2020, September 18). 5 Govt schemes, promoting organic farming in India. Retrieved from [https://agriculturepost.com/5-govt-schemes-promoting-organic-farming-in-india/#:~:text=The Government of India provides,the country though different schemes.&text=Paramparagat Krishi Vikas Yojana promotes,\(Participatory Guarantee System\)](https://agriculturepost.com/5-govt-schemes-promoting-organic-farming-in-india/#:~:text=The Government of India provides,the country though different schemes.&text=Paramparagat Krishi Vikas Yojana promotes,(Participatory Guarantee System))

- certification.&text=31,000) is given as incentive to a farmer towards organic inputs.
6. Apeda. (n.d.). Retrieved from http://apeda.gov.in/apedawebsite/organic/Organic_Products.htm
 7. Avail Benefits from Government Schemes for Organic Farming. (n.d.). Retrieved from <http://www.indianbotanists.com/2014/02/avail-benefits-from-government-schemes.html>
 8. Benefits of organic farming in India. (n.d.). Retrieved from <https://www.24mantra.com/blogs/organic-lifestyle/what-if-india-goes-fully-organic-how-will-this-benefit-the-farmers/>
 9. Benefits of organic farming: Organic Farming in India. (n.d.). Retrieved from <http://www.organicfarmbest.com/organic-farm/>
 10. Bighaat. (n.d.). Organic Farming in India. Retrieved from <https://www.bighaat.com/blogs/kb/organic-farming-in-india>
 11. Charyulu, D. K., & Dwivedi, A. K. (2016, November 17). Economics of Organic Farming Vis-à-Vis Conventional Farming in India. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2859912
 12. Drishti IAS. (2020, August 21). Organic Farming in India. Retrieved from <https://www.drishtias.com/daily-updates/daily-news-analysis/organic-farming-in-india>
 13. Farming Base. (2020, September 23). Organic Farming Types, Importances, Advantages and Benefits. Retrieved from <https://farmingbase.com/organic-farming-types-importances-advantages-and-benefits/>
 14. Farming India, Ashmi, C.I.meena, Owner, F. I., Umbarkar, C. R., C.r., U., . . . Ballzykid. (2020, July 05). Organic Farming in India: Organic Farming Methods and Certification. Retrieved from <https://www.farmingindia.in/organic-farming/>
 15. Featured Video. (n.d.). Retrieved from <https://www.upsciasexams.com/article-details/219/Organic-Farming,-Types,-methods,-objectives-and-advantages-|Organic-farming-in-India>
 16. Giovannucci, D. (2007, June 24). Evaluation of Organic Agriculture and Poverty Reduction in Asia. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=996119
 17. Greentumble. (2020, August 13). Sustainable Organic Farming: Pros and Cons. Retrieved from <https://greentumble.com/pros-and-cons-of-organic-farming/>
 18. Howe, M. (2017, July 12). Advantages and Disadvantages Organic Farming. Retrieved from https://small-farm-permaculture-and-sustainable-living.com/advantages_and_disadvantages_organic_farming/
 19. India has the highest number of organic farmers globally, but most of them are struggling. (n.d.). Retrieved from <https://www.downtoearth.org.in/news/agriculture/india-has-the-highest-number-of-organic-farmers-globally-but-most-of-them-are-struggling-61289#:~:text=India is home to 30,of Organic Agriculture 2018 report>
 20. Kankam, T., Okese, K. A., & Boamah, J. (2020, June 08). Organic Farming: Types, Principles, Methods and Importance. Retrieved from <https://blog.agrihomegh.com/organic-farming-types-principles/>
 21. M, M., Nedumaran, D. G., Prabakaran, V., Kumar, M. A., & Alaguraja, M. (2020, April 14). Challenges and Possible of Organic Farming. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3555601
 22. M, M., Nedumaran, D. G., Prabakaran, V., Kumar, M. A., & Alaguraja, M. (2020, April 14). Challenges and Possible of Organic Farming. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3555601
 23. Magnaye, D. (2018, November 13). Smallholder Organic Farming: An Entrepreneurial Strategy in Harmony with Nature. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3283615
 24. Major Challenges in Organic Farming in India. (n.d.). Retrieved from <https://www.bizencyclopedia.com/article/major-challenges-in-organic-farming-in-india>
 25. Major Problems and Constraints for Organic Farming in India. (2014, February 07). Retrieved

- from <https://www.yourarticlelibrary.com/essay/major-problems-and-constraints-for-organic-farming-in-india/25013>
26. Mendon, S., Salins, M., & Aithal, P. S. (2020, January 13). Emerging Trends in Sustainability of Organic Farming and its Impact on Purchase Intention - a Review & Research Agenda. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3512860
 27. Onkar K and Suryawanshi, S. B. (2019). Organic Farming in India: An overview. Retrieved from <http://www.jetir.org/view?paper=JETIRBL06011>
 28. Singh, N. (2019, March 05). Economic and Environmental Aspects of Organic Farming: Evidence From India. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3241639
 29. Varkey, J. (2020, March 08). Financial Inclusion and Organic Farming Practices of Kuruchya Tribe in Wayanad: An Empirical Study. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3536824
 30. Yadav, S. K., Babu, S., Yadav, M. K., Singh, K., Yadav, G. S., & Pal, S. (2013, June 05). A Review of Organic Farming for Sustainable Agriculture in Northern India. Retrieved from <https://www.hindawi.com/journals/ija/2013/718145/>
 31. Yadava, A. K. (2019, August 08). Current Status of Organic Farming and Role of Government Institutions in India. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3431720.

Web Reference

1. <https://findanyanswer.com/what-are-the-types-of-organic-farming>
2. <https://adyanaturals.com/the-organic-philosophy.html>
3. <https://findanyanswer.com/what-are-the-types-of-organic-farming>
4. <https://pib.gov.in/Pressreleaseshare.aspx?PRID=1656146>
5. <http://grolink.se/resources/oa/benefits-of-organic-farming/>
6. <https://academic.oup.com/fqs/article/4/2/69/5861338>
7. <https://suminterindiaorganics.com/here-are-the-5-key-environmental-benefits-of-organic-farming/>
8. <http://www.akmindia.in/organic-farming-pros-cons/>