Asian Journal of Research in Social Sciences and Humanities
ISSN: 2249-7315 Vol. 11, Issue 11, November 2021 SJIF 2021 = 8.037
A peer reviewed journal

INDIA'S ORGANIC AGRICULTURE FOR LONG-TERM DEVELOPMENT: A REVIEW

Sunil Kumar*

*Department of Agricultural Sciences,
Teerthanker Mahaveer University, Moradabad, Uttar Pradesh, INDIA
Email id: sunil.agriculture@tmu.ac.in
DOI: 10.5958/2249-7315.2021.00263.X

ABSTRACT

Organic farming, formerly seen as a fringe movement of questionable reputation, grew from humble beginnings to acquire recognition and expand across the globe, with annual sales of about US$40 billion. One of the current arguments in this area is whether organic farming is just a status symbol or if it is really healthier for us. Failures of the green revolution, dwindling biodiversity and agricultural yields, worsening human and environmental health, and other factors have prompted us to reconsider agriculture in general, and sustainable agriculture in particular. In Kerala, for example, farmers, environmentalists, and policymakers took the unusual step of adopting a legislation requiring all growers in the state to cultivate organically by 2020. The example of Kerala demonstrates that, when done correctly, this kind of agriculture can benefit everyone in our global food system. With reference to India, the purpose of this article is to offer a range of views on the nature and significance of organic farming, as well as to explain the pattern of development of the organic food system. The article does a good job of addressing some of the problems as well as some of the uncertainty regarding its future growth.

KEYWORDS: *Organic Agriculture, Organic Farming, Organic Food, Sustainable Development.*

1. INTRODUCTION

The service sector is driving India's development. Agriculture's significance is rapidly dwindling, while manufacturing's expansion remains static. Despite the fact that agriculture's contribution to national revenue and economic development is rapidly declining, agriculture is still capable of guiding our growth path(1). Huge swaths of rich agricultural land are being used for industrial purposes under the guise of special economic zones and megaprojects(2). The amount of land accessible for agriculture is dwindling. Despite all of this, India has been able to attain food self-sufficiency. Economic and trade liberalization, as well as the passage of the Food Security Bill, are putting a strain on India's land resource partitioning in areas like forestry, agriculture, grazing lands, human settlements, and industries(3). As a result, the combined effect of meeting food demand within a limited area while also producing toxin-free agricultural produce has become a significant factor forcing countries like ours to consider alternatives to conventional agriculture, such as organic farming, a holistic production management system that is supportive of the environment, health, and sustainability. Development should not come at the expense of the environment. The need for long-term development is urgent. With the rise in population, we will be compelled not only to maintain but also to expand agricultural output in a sustainable way(4).

Organic farming may guarantee a healthy interaction between human and natural resources in general, and commons in particular. People and the environment will benefit from a compassionate approach to agriculture(5). As a result, a natural equilibrium must be preserved at all costs to ensure the survival of life and property for current and future generations. Organic farming is the obvious option. Organic farming has evolved as a viable option for fulfilling food

demand, preserving soil fertility, and increasing the carbon pool in the soil(6). People are increasingly opting for green goods as a result of increased knowledge, information, and awareness.

Green products are the only way to preserve the environment via sustainable consumption. With increasing concerns about food safety and health, more customers are turning to organic goods(7). The rise in consumer interest in organic food has been linked to a rising desire for food free of pesticides and chemical residues, among other factors. Humans, other living creatures, and environment all benefit from organic foods. It also encourages the use of no chemical preservatives and the preservation of food's uniqueness. This avoids the overuse of hazardous substances and therefore guarantees good health(8).

The goal of an agricultural development plan for developing nations should be to increase the productivity of land under cultivation while lowering costs and improving the efficiency of inputs while causing little or no damage to humans and the environment(9). To minimize land degradation and input misuse, the primary need is to promote a healthy soil-plant-environment system. Organic farming is a novel approach for encouraging environmentally friendly farming by modifying current agricultural systems in the area of soil nutrient restoration to promote the use of organic resources(10). The difficulties and possibilities of implementing this system in India are discussed in this paper.

1.1. Organic farming:

Organic farming, as the name implies, is farming without the use of chemicals. Though there is no one worldwide standard for organic agriculture, widely recognized organic regulations ban the use of synthetic fertilizers, pesticides, growth regulators, animal feed additives, and place a premium on long-term soil management(11). The principles of organic farming are to produce all of the necessary plant nutrients on the farm and to use local resources for crop protection, limiting or eliminating the need of external inputs to the bare minimum.

Organic farming is basically a soil-building process, designed to preserve, create, and maintain fertility in the soil. The main concern of all organic farming is the creation of "living" soil. In organic farming, the soil is nourished rather than the produce(12). The cornerstone of organic farming is improving soil health. The organic matter must be held in the soil and circumstances must be created for microorganisms to act on it in order to release nutrients. As a result, organic farming does not simply replace chemicals with organic materials, nor does it return to traditional agriculture. It is the transformation of soil from a "non-living" to a "living" state. Several methods are used to keep life in the soil alive, including soil and moisture conversion and maintaining a minimal amount of soil organic matter(13). Green manuring, composting, vermicomposting, and the use of bio-fertilizers and bio-pesticides are all required practices for farmers(14). When it is accomplished, the soil will take care of itself, requiring minimal upkeep and external inputs.

Organic farming focuses on the utilization of organic matter to improve soil characteristics, reduce food chain-related health risks, and achieve closed nutrient cycles, all of which are important elements in achieving sustainable agriculture. Organic agriculture is a production method that combines agriculture with biodiversity, ecosystems, and biological cycles while avoiding all synthetic and chemical inputs. Natural methods such as crop rotation, animal manure, off-farm waste, crop residues, plant protection, and nutrient mobilization are used instead of artificial fertilizers, hormones, feed additives, and pesticides(15).

Organic farming's main goals are to produce high-quality food in sufficient quantities while remaining in harmony with natural systems and cycles, to improve biological cycles within the farming system involving microorganisms, soil flora and fauna, plants and animals, and to maintain long-term soil fertility and genetic diversity of the production system and its

surroundings, including plant and wildland species(16). It comprises ecological management methods for preserving and improving soil fertility, preventing soil erosion, promoting and enhancing biological variety, and reducing danger to human and animal health as well as natural resources. Vegetables, fruit, herbs, grains, meat, dairy, eggs, fibers, flowers, and other agricultural goods are now produced organically(17).

1.2. Organic Vs. Conventional:

Organic farming is often small-scale, with independent enterprises that do not utilize bought fertilizers or other inputs; minimal automation of the growing and harvesting processes; and frequently local, direct-to-consumer marketing(18). Conventional farming is large-scale, with intensive chemical initiatives and dependence on highly automated manufacturing, using special purpose equipment and facilities wholesale, with products distributed throughout large areas and sold through high-volume outlets. It is often owned by or monetarily tied to major food companies.

2. LITERATURE REVIEW

The overall goal of Hammas et al.'s study is to assess the contribution of organic farming to sustainable development using the three pillars both theoretically and practically(19). They looked at the case of the nations in the Mediterranean region before moving on to Tunisia.

Usama et al. discovered that organic farming, via sustainable agriculture, satisfies not only the current generation's food needs in an environmentally responsible manner, but also the needs of future generations, while also preserving our environment(20). Modern agriculture, which includes the use of fertilizers and pesticides, poses significant health risks as well as environmental damage. This is why people are becoming more interested in organic farming. Plants get macronutrients and micronutrients from organic farming, which also enhances the soil's physical, chemical, and biological properties.

Organic farming, according to Santhosh kumar et al., is the production of food using natural resources such as manure and compost rather than herbicides, pesticides, weedy cedes, fertilizers, or genetically modified organisms(21). Organic farming supplies plants with macronutrients and micronutrients while also improving the soil's physical, chemical, and biological properties. At a time when new technologies are still expensive and must be shown safe for long-term development, organic farming should be a safer option for sustainable agriculture. In terms of use, organic farming increases soil nutrient levels and uses genetically modified seeds for improved agricultural output.

3. DISCUSSION

3.1. Present Status of Organic Farming in India:

Growing global awareness of health and environmental concerns has resulted in an increase in demand for organically produced agriproducts. Organic farming is practiced by 1.6 million farmers worldwide, with about 80% of these farmers living in poor nations. In 2012, the worldwide market for organic goods was projected to be worth $70.1 billion USD.

The organic food industry in India is estimated to be worth INR 5.6 billion, and it is a growing source of employment and revenue at the village level. Due to its diverse agro-climatic zones, India is endowed with the ability to produce a wide range of organic goods. Organic farming is a hereditary tradition in India, which benefits us. This is the key for organic producers to get into the domestic market, which is expanding at a rate of 15 to 25% each year. Farmers in pollution-free areas, distant from the dangers of modernity, are rediscovering the advantages of traditional, holistic farming, which preserves soil health and biodiversity(22).

In 2016, India has a total area under organic farming of 1,490,000.00 hectares. India now ranks 33rd in terms of total land under organic cultivation and 88th in terms of agricultural land under organic crops as a percentage of total farming area. Organically farmed land now covers 4.43 million hectares and continues to grow at a steady pace. India is home to 30% of the world's total organic producers, but just 2.59 percent (1.5 million hectares) of the world's total organic agricultural area of 57.8 million hectares.

India is the world's biggest organic cotton producer, accounting for more than half of all organic cotton produced worldwide. In 2010-11, India exported over 300 organic goods totaling 69837 MT with a value of USD 157 million. Cotton and textiles accounted for 17363 MT (25 percent), basmati (5243 MT) and non-basmati rice (1634 MT) (10 percent), oil crops 17966 MT (26 percent), except sesame-2409 MT (3 percent), processed foods 8752 MT (13 percent), tea-2928 MT and coffee (5 percent), honey-2408 MT (3 percent), dry fruits -1472 MT (2 percent), spices, medicinal plants and their processed products, and miscellaneous (13 percent). Cereals, spices, medicinal and herbal plants, coffee, vegetables, fragrant oil, and pulses are the other product categories (5 percent). Europe received 44% of organic goods, followed by Canada (22%), the United States (19%), and Asia (19%). (13 percent).

India is quickly establishing itself as a global player, exporting over 300 goods across 20 distinct categories to over 20 nations. In addition, India is the world's biggest exporter of organic cotton and home to the world's greatest number of organic growers. Along with global market changes, local markets are expanding at a faster pace than the global average and are projected to continue increasing at a 25% CAGR through 2020. In 2016, Sikkim became India's first completely organic state, with 75,000 hectares under organic agriculture, inspiring other states to seek similar goals. Meghalaya, for example, plans to convert to renewable energy by 2020.

3.2. The Debate:

The debate focuses on the overall worth and safety of chemical agriculture, with organic farming being considered to be the polar opposite of contemporary, large-scale, chemical-based agriculture. Food production has moved out of the public eye in recent decades. Many people in industrialized countries, which account for the majority of the world's income, consumption, and agricultural policymaking, are ignorant of how their food is produced. Sustainable, organic farming has a critical role to play if the techniques utilized to generate food are quickly eroding the capacity for ongoing production. This idea is at the heart of most organic farming debates. Organic farming does not allow the discharge of synthetic pesticides into the food supply or the environment, but it does allow the use of so-called natural pesticides produced from plants. Organic farming is becoming more popular, and people all around the globe are accepting it. One of the major reasons pushing farmers to switch to organic agriculture production is the increasing consumer market. Organic farming has grown in popularity in recent years as consumers have become more conscious of food safety problems and environmental concerns.

3.3. Sustainability:

Although organic farming and sustainable agriculture are often used interchangeably, they are not the same thing. Agriculture sustainability is a wide term that takes into account a variety of factors, including environmental health, economic profitability, and so on. Without depending on outside inputs, organic farming techniques establish a balance between what is taken out of the land and what is returned to it. Organic farming is now just a tiny portion of the agricultural landscape, with a negligible environmental effect.

3.4. Lessons from Kerala:

Regardless of whatever party came to power in God's own nation Kerala, the state's agricultural policy remained alive and active in favor of organic farming. Farmers, political parties and

coalitions, universities, non-governmental organizations, the Biodiversity Board, and the Agriculture Department all played a role. They recognized they were waging a losing battle against the Green Revolution's "high yield variety fertilizer-pesticide pack." They have also recognized that the deterioration and disturbance of the state's fragile ecosystems are the main causes of the state's water shortages, nutritional insecurity, loss of primary production, and agricultural crises. They want a revolution that would last forever.

The farmers were persuaded that the only way to avoid damaging the environment is to revert to traditional sustainable farming methods such as organic farming, which is based on the wide concept of "life and let live," which is recognized nationally and globally. However, agreeing on this wording and creating the policy was no simple task, and it took four tumultuous years of back-and-forth discussion to reach this point. The Kerala State Biodiversity Board is a non-regulatory organization. It is only a legislative advisory committee to the state government. Nonetheless, it was successful in having its organic farming strategy included into the state's regulatory framework and receiving funding from the Agriculture Department. In the state, the National Biodiversity Bill was implemented in its entirety. NGOs such as the Kudumbashree are making strenuous efforts. After that, the rest is history. Kerala's contribution to Incredible India is this. According to the renowned Gadgil study, Kerala's organic farming policy should be adopted across state lines: "The Organic Farming Policy of Kerala." Could serve as a model not only for the Western Ghats, but for all six states that benefit from the mountain system." As a result, the Gadgil Report provided a vehicle for proponents of Kerala's organic agricultural policy to oppose the Green Revolution and scale up organic agriculture throughout the country, citing Kerala as an example (23). "The success stories of sustainable food advocacy in the United States and agricultural policy in Kerala" offer messages of encouragement for the rest of the globe.

3.5. Challenges:

Developing countries that already produce a wide range of organic products face a number of challenges, including a lack of technical know-how, such as organic farming practices and production methods, and a lack of market information, such as which products to grow, which markets and distribution channels to choose, competition, and market access. Importers, food producers, retailers, and consumers are all looking for assurance of Organic origin. Organic goods are not cheap. Organically grown foods must follow stringent guidelines such as certification and extensive control. Organic farming is still beset by the issue of requiring more work to operate. Furthermore, organic farming is also hindered by a lack of clarity: consumers aren't always aware what organic farming really entails. Despite these obstacles, organic farming has mostly been practiced by small farmers and is gaining acceptance in emerging nations such as India. One of the most pressing issues in India is the financial restriction that farmers face during the first period of switching from non-organic to organic farming. Another annoyance is the massive quantity of required paperwork, which is particularly burdensome for illiterate farmers. Then there's the issue of being unable to sell the fruit at a premium since it can't be labeled as "organic" during the changeover time. Furthermore, India's domestic marketing is undeveloped.

4. CONCLUSION

Traditional agriculture has been subjected to increasingly stringent environmental and animal welfare regulations in recent years. The organic agricultural industry must assess its position in light of these new changes. There has already been a paradigm shift from dominating nature to maintaining its resources. Organic farming may provide high-quality food without compromising the health of the land or the environment. It is necessary to select appropriate crops/products for organic production that are in demand on the worldwide market. It will provide a lot of job opportunities and bring wealth and peace to the country. As a result, favorable policy measures to boost this sector are urgently needed. Such policies provide a strong basis for promoting long-term

growth, and the goal of long-term development will become a reality.

REFERENCES

1. Rahmann G, Ardakani MR, Bàrberi P, Boehm H, Canali S, Chander M, et al. Organic Agriculture 3.0 is innovation with research. Organic Agriculture. 2017.
2. Sharma P, Berwal YS, Ghai W. Krishimitr: A cloud computing and platform for disease detection in agriculture. Int J Innov Technol Explor Eng. 2019;
3. Freddy HJ. Food security bill 2013 of India - a retrospective analysis. Futur Food J Food, Agric Soc. 2013;
4. Manjit K, Abhishek M. Plant growth promoting rhizobacteria (PGPR) for enhancing sustainable agriculture and revolutionized tools for farmers. Res J Biotechnol. 2021;
5. Jain N, Awasthi Y. WSN-AI based Cloud computing architectures for energy efficient climate smart agriculture with big data analysis. Int J Adv Trends Comput Sci Eng. 2019;
6. Hole DG, Perkins AJ, Wilson JD, Alexander IH, Grice P V., Evans AD. Does organic farming benefit biodiversity? Biol Conserv. 2005;
7. S G. Food Safety and Organic Farming. MOJ Food Process Technol. 2017;
8. Kumar S, Shamim M, Bansal M, Gangwar B, Aggarwal RP. Computational modeling and emerging trend in agriculture. In: 2015 International Conference on Computing for Sustainable Global Development, INDIACom 2015. 2015.
9. Carvalho FP. Pesticides, environment, and food safety. Food and Energy Security. 2017.
10. Kaur V, Oberoi A. Novel Approach for Plant Disease Detection Based on Textural Feature Analysis. In: Advances in Intelligent Systems and Computing. 2020.
11. Sharma P, Berwal YPS, Ghai W. Enhancement of plant disease detection framework using cloud computing and gpu computing. Int J Eng Adv Technol. 2019;
12. Sharma P, Berwal YPS, Ghai W. KrishiMitr (Farmer's friend): Using machine learning to identify diseases in plants. In: Proceedings - 2018 IEEE International Conference on Internet of Things and Intelligence System, IOTAIS 2018. 2019.
13. Wani PA, Rafi N, Wani U, Bilikis A H, Khan MSA. Simultaneous bioremediation of heavy metals and biodegradation of hydrocarbons by metal resistant Brevibacillus parabrevis OZF5 improves plant growth promotion. Bioremediation Journal. 2021.
14. Mandal UK, Singh G, Victor US, Sharma KL. Green manuring: Its effect on soil properties and crop growth under rice - Wheat cropping system. Eur J Agron. 2003;
15. Sharma P, Berwal YPS, Ghai W. Performance analysis of deep learning CNN models for disease detection in plants using image segmentation. Inf Process Agric. 2020;
16. Khatri M, Kumar A. Stability Inspection of Isolated Hydro Power Plant with Cuttlefish Algorithm. In: 2020 International Conference on Decision Aid Sciences and Application, DASA 2020. 2020.
17. Prakash P, Radha, Kumar M, Pundir A, Puri S, Prakash S, et al. Documentation of commonly used ethnoveterinary medicines from wild plants of the high mountains in shimla district, himachal pradesh, india. Horticulturae. 2021;
18. Sanwal R, Chaudhary AK. Wound healing and antimicrobial potential of Carissa spinarum Linn. in albino mice. J Ethnopharmacol. 2011;

19. Hammas MA, Ahlem Z. Organic Farming: A Path of Sustainable Development. Int J Econ Manag Sci. 2017;

20. Usama M, Siddiqui MJA. Organic Farming – An Approach to Sustainable Development. Int Adv Res J Sci Eng Technol. 2016;

21. Santhoshkumar M. A Review on Organic Farming - Sustainable Agriculture Development. Int J Pure Appl Biosci. 2017;

22. Singh SP, Pundhir A, Ghosh S. Validation of an analytical methodology for determination of tetracyclines residues in honey by UPLC-MS/MS detection. Indian J Nat Prod Resour. 2015;

23. Vanaja T. Saline Prone Rice Ecosystem of Kerala, India. Am J Environ Prot. 2013;