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Research Article

Challenges Of Implementing Organic Farming In Tamil Nadu- From Farmers' Perspective.

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ABSTRACT

The Indian economy heavily depends on agriculture. More than two-thirds of the workforce in the nation is directly employed in agriculture. Therefore, the income, wealth, happiness, and general well-being of the people in this nation are directly linked to any improvements made in agriculture. The Indian economy's most significant and expansive industry is this one. With an increasing population, India's agriculture faces significant hurdles. This study attempts to bring together different challenges in the light of recent developments for organic farming in the state of Tamil Nadu. The following month of the Green Revolution encouraged farmers to take up this type of farming. This study attempts to depict the organic farming scenario in Tamil Nadu. The key issues emerging in organic farming include production, finance, and marketing challenges. Factors related to ecology, marketing of the producer, and policy support. It has been argued that organic farming is productive and sustainable, but there is a need for strong support for it in the form of government subsidies, agricultural extension services, and research to enhance production scientifically.

Keywords: Organic Farming, Agriculture, Economy, and Sustainable Development.

1. Introduction.

Organic Farming is a form of agriculture that relies on techniques such as crop rotation, green manure, compost, and biological pest control to maintain soil productivity and control pests on a farm. Organic farming uses fertilizers and pesticides but excludes or strictly limits the use of manufactured synthetic fertilizers, pesticides, which include herbicides, insecticides, and fungicides, plant growth regulators such as livestock antibiotics, food additives, genetically modified organisms, and nano material.
Organic Farming helps in the improvement of crop quality and reduces environmental pollution. It brightens the prospects of the export of organic food items. Organic agriculture has demonstrated its ability not only to produce safer commodities for consumers but also to produce biodiversity at all levels (Aron, 1996).
Organically produced food items are superior in quality aspects as compared to those produced with the help of synthetic chemicals. They are good in taste, flavor, essential nutrients, and the like, and at the same time, they are free from harmful or toxic chemicals. Organic agriculture appears to be a viable alternative because it enriches the soil, strengthens the natural resource base, and sustains biological production at various levels. Export markets can also be tapped by prospective farmers by growing organic crops (Saleb Ganebalk, 2023).
According to the Food and Agriculture Organization (FAO), sustainable agriculture is the successful management of resources for agriculture to satisfy changing human needs, while maintaining or enhancing the quality of the environment and conserving natural resources. There are many definitions for sustainable agriculture. Uniformly, they lay great emphasis on maintaining a steady agricultural growth rate, which can meet the demand for food of all living things, keeping in mind not to deplete the existing basic resources (Dahama,2002).

Organic Farming is a system which avoids or largely excludes the use of synthetic inputs (such as fertilizers, pesticides, hormones, feed additives, etc.) and to the maximum extent feasible rely upon crop rotations, crop residues, animal manures, off-farm organic wastes, mineral grade rock additives and biological system of nutrient mobilization and plant protection, It has suggested that, 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. Modern agricultural practices cause adverse effects not only on the farm but also on the health of all living beings (Kanshik,1997).

Consequently, the environment deteriorates. It has been properly documented all over the world. Application of technology, particularly in terms of the use of chemical fertilizers and pesticides all around us, has persuaded people to react against such practices. Their effects on the environment have started manifesting through soil erosion, water shortages, salinization, soil contamination, genetic erosion, etc. (Meena et al, 2023).

Organic farming is one of the widely used methods, presently being considered to be the best alternative to replace the ill effects of chemical farming. Organic farming is a system that is designed and maintained to produce agricultural products by the use of methods and substances that maintain the integrity of organic agricultural products until they reach the consumer. This is accomplished by using substances, to fulfill any specific fluctuation within the system so as to maintain long- term soil biological activity, ensuring causing peak management, recycling wastes to return nutrients to the land, providing attentive care for farm animals and handle the agricultural products without the use of even extraneous synthetic additives or processing (Kathpal, et. al,1997).

With the increase in population, our compulsion would be not only to stabilize agricultural production but to increase it further in a sustainable manner. The scientists have realized that the Green Revolution with high input use has reached a plateau and is now sustained with diminishing returns of falling dividends. Thus, a natural balance needs to be maintained at all costs for the existence of life and property. The obvious choice for that would be more relevant in the present era, when these agro-chemicals, which are produced from fossil fuel and are not renewable, are diminishing in availability. It may also cost heavily on our foreign exchange in the future.

2. Characteristics of Organic Farming

It is protecting the long-term fertility of soils by maintaining organic matter levels, encouraging soil biological activity, and careful mechanical intervention. It is providing crop nutrients indirectly using relatively insoluble nutrient sources, which are made available to the plant by the action of soil micro-organisms. It has 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. The Weed, disease, and pest control relies primarily on crop rotations, natural predators, diversity, organic management, resistant varieties, and limited 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, carefully attends to the impact of the farming system on the wider environment and the conservation of wildlife and natural habitats.

3. Review of Literature

All literature reviews make it clear that organic farming divides both among farmers and experts. Crops were productive, and the increase in crops in organic farming is sharp, but there is a consensus on its friendly nature and sustainable ability to protect human life and health. Sakthi Ganapathi (2023) reported that agricultural growth in the nation has mostly aimed to increase crop yields during the last 5-6 decades. Although yields increased dramatically, the cost to farmers and the environment was enormous. Farmers faced unfavourable conditions due to low farm product prices and high chemical input costs, prompting them to seek other revenue streams. Jayasree Das and Deepro Bhattacharyya (2022) studied organic agricultural obstacles in Sikkim and proposed methods to address them. The author concludes that organic farming is the most viable choice available. Sikkim is unique in being the only state in the nation producing 100 percent organic agriculture. Meena, and Yadav (2021) stated that pesticide residue is the second largest agent causing cancer, next to cigarettes. Besides, the pesticides and fertilizers that persist in the soil are harmful to the beneficial soil microorganisms and earthworms, resulting in degradation of soil fertility. Organic farming helps in rejuvenating the degraded soil and ensures the sustainability of crop production, and also nowadays, consumers are preferring to consume natural/ethnic foods, particularly organic foods, across the world. Moreover, they are ready to pay a premium price for such foods. The demand for organic agricultural products is increasing day by day. Dinesh Kumar and Shivay (2020) stated that with the current trend toward the use of organic fertilizers, many people are again looking at green manuring as an economical, practical, and even aesthetically pleasing method of restoring soil productivity. According to them, green manuring is widely

practiced in Karnataka, West Bengal, Andhra Pradesh, Odisha, Madhya Pradesh, Punjab, and Uttar Pradesh, while it is practiced on a limited scale in other states.

4. Need for the Study

There are three categories of opinions about the relevance of organic farming in Tamil Nadu State. The first important category was simply to dismiss it as a fad or craze. The second foremost category, which includes many farmers and researchers, opined that there are qualities in organic farming, but cautiously considers the national needs and conditions in Tamil Nadu agriculture functions. Organic Farmers are fully aware of the environmental problems created by conventional farming. Then, many Organic Farmers believe that the yields are lower in organic farming during the starting period of cultivation, and labor density tends to increase productivity.

The last one is an organic farming advocate and advocates its adoption wholeheartedly. Farmers all think that tomorrow's ecology is more important than today's farm benefits. Many important reservations, the prosperity of organic farming versus conventional farming, were a crucial one from the point of view of Tamil Nadu farmers.

5. Objectives of the Study

To study the challenges of implementing Organic Farming in Tamil Nadu.

6. Hypothesis of the Study

Farmers have a similar level of opinion towards production, finance, and marketing challenges in organic farming.

7. Research Methodology

Type of Research

A research methodology is a logical and systematic planning and directing of a research process to accomplish research goals. This study used a descriptive type of research.

Population

The population of the study is the farmers doing organic farming in Coimbatore district, who are all registered in the Tamil Nadu state organic farming council.

Sample Size

In the Coimbatore district, there are 6800 farmers registered as doing organic farming. From this 100-sample, respondents have been approached for this survey through a convenience sampling method.

Study Variables

Challenges of organic farming, such as production, finance, and marketing, are considered as study variables.

Research Tool

The survey method is taken as a research tool for this study. The researcher constructed a survey tool for the challenges of production, finance, and marketing.

Data Collection

The data were collected with the help of an interview schedule prepared for the present study from the respondents of the selected wards. Household heads of the family were administered the individual questionnaire; thus, they were regarded as the major source of information. After completion of the data collection, the data tabulation was done, and finally, the field data were processed accordingly for statistical analysis. This study is based on primary data, which was collected from the households of Coimbatore.

Statistical Tools

For analyzing the data for this study, Descriptive analysis and the Friedman multiple comparison test are used.

8. Results and Discussion

Table 1: Production Challenges of Organic Farmers

Sl.No	Production Challenges	Mean Rank	Friedman Test value	Multiple Comparison Test
1.	Inadequate supply of manure	7.80	chi-square value 28.992 P=0.001	1,2 7, 10 3,6,8,9 4,5
2.	Short supply and quality	7.29		
3.	Difficulty in preparing organic pesticides	6.82		
4.	Weed problems	5.26		
5	Lack of awareness	5.12		
6	Lack of standards in the cultivation process	6.58		
7	Risk of crop failure	7.21		

8	Climate changes	6.48		
9	Shortage of labour	6.24		
10	Low yield	7.12		

Table 1 explains the farmers' opinions towards the production challenges of organic farming. Production challenges are measured with 10 items in the five-point scale from strongly agree to strongly disagree. Further, it is hypothesized that farmers have a similar opinion towards the production challenges of organic farming. In order to test the hypothesis, the Friedman multiple comparison test is applied. According to the test result, the chi-square value is 28.992 and the p-value is 0.001, which is significant at the one percent level. It is noted that the hypothesis is rejected. Thus, farmers have different opinions towards the production challenges of organic farming. Hence, the Friedman multiple comparison test is applied. The result shows that inadequate supply of manures, short supply of quality seeds, risk of crop failure, and low yield are predominant problems, followed by difficulty in preparing organic pesticides, lack of standards in the cultivation process, climate changes, and shortage of labour are the second-level problems, and weed problems and lack of awareness are the third-level problems.

Table 2. Financial Challenges of Organic Farming

Sl.No	Financial Challenges	Mean Rank	Friedman Test value	Multiple Comparison Test
1.	Non-availability of rent-free cold storage	3.35	Chi-square value 15.342 P=0.001	5,4,2 1,3
2.	Non-availability of a free-soil testing facility	4.32		
3.	Fewer incentives for export	3.17		
4.	Difficulty in getting crop insurance	4.62		
5.	Limited Subsidies for Organic Farming	4.87		

Table 2 explains the farmers' opinions towards the financial challenges of organic farming. Financial challenges are measured with 5 items in the five-point scale from strongly agree to strongly disagree. Further, it is hypothesized that farmers have a similar opinion towards the financial challenges of organic farming. In order to test the hypothesis, the Friedman multiple comparison test is applied. From the test result, the Chi-square value is 15.342 and the p-value is 0.001, which is significant at the one percent level. It is noted that the hypothesis is rejected. Thus, farmers have different opinions towards the financial challenges of organic farming. Hence, the Friedman multiple comparison test is applied. The result shows that Limited Subsidies for organic farming, Difficulty in getting crop insurance, and non-availability of free-soil testing facility have been found to be the primary problems, and non-availability of rent-free cold storage and Less Incentives for export are the secondary level financial problems.

Table 3: Marketing Challenges of Organic Farmers

Sl.No	Production Challenges	Mean Rank	Friedman Test value	Multiple Comparison Test
1.	Consumers feel that the prices of organic farming products are high	8.12	chi-square value 25.098 P=0.001	4, 8, 9, 1 2,5,6 3,7
2.	There is less demand for organic products	7.87		
3.	Organic farms have a premium price for their product	6.13		
4.	Consumers find the required food items unavailable in shops	8.64		
5	Organic farmers find it difficult to get buyers.	7.31		
6	Growing purchase power of consumers.	7.12		
7	Exploitation by middlemen	6.02		
8	Lack of awareness in the certification process	8.49		
9	Fewer digital marketing platforms	8.32		

Table 3 explains the farmers' opinions towards marketing challenges of organic farming. Marketing challenges are measured with 9 items in the five-point scale from strongly agree to strongly disagree. Further, it is hypothesized that the farmers have similar opinions towards the marketing challenges of organic farming. In order to test the hypothesis, the Friedman multiple comparison test is applied. From the test result, the Chi-square value is 25.098 and the p-value is 0.001, which is significant at the one percent level. It is noted that the hypothesis is rejected. Thus, farmers have different opinions on the marketing challenges of organic farming. Hence Friedman multiple comparison test is applied. The result shows consumers find required food items unavailable in shops, a lack of awareness in the certification process, fewer digital marketing platforms, and consumers feel prices of organic farming products are high are found to be the first-level challenges. There is less demand for organic products. Organic farmers find it difficult to get buyers, and the growing purchase power of consumers is the second level challenge and Organic farms have a premium price for their product, and Exploitation by middlemen is the least level challenge. The most important constraint felt in the progress of organic farming is the inability of the government policy-making level to take a firm decision to promote organic agriculture. Unless such an unambiguous direction is available in terms of both financial and technical

support, from the Centre to the Panchayath levels, mere regulation-making will amount to nothing. The following are found to be the major problem areas for the growth of organic farming in the country:

It is a fact that many farmers in the country have only vague ideas about organic farming and its advantages as to conventional farming methods. Use of bio-fertilizers and bio-pesticides requires awareness and willingness on the part of the farming community. Knowledge about the availability and usefulness of supplementary nutrients to enrich the soil is also vital to increase productivity. Farmers lack knowledge of compost making using modern techniques, and also its application. The maximum they do is make a pit and fill it with small quantities of waste. Often the pit is flooded with rainwater, and the result is that the top of the compost remains under composted the bottom becomes like a hard cake. Proper training for the farmers will be necessary to make vermin compost on modern lines. It is found that before the beginning of the cultivation of organic crops, their marketability, and that too at a premium over the conventional produce, has to be assured. Inability to obtain a premium price, at least during the period required to achieve the productivity levels of the conventional crop, will be a setback. It was found that the farmers of organic wheat in Rajasthan got lower prices than those of the conventional wheat. The cost of marketing of both types of products was also the same, and the buyers of wheat were not prepared to pay higher prices for the organic variety (Rao, 2003).

Many experts and well-informed farmers are not sure whether all the nutrients in 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 sufficient to meet the requirements.

The crop residues useful to prepare vermicompost are removed after harvest from the farms, and they are used as fodder and fuel. Even if some are left out on the farms, termites, etc., destroy them. Experiments have shown that the crop residues ploughed back into the soil will increase productivity, and a better alternative is conversion into compost.

The small and marginal cultivators have difficulties in getting the organic manure compared to the chemical fertilizers, which can be bought easily, of course, if they have the financial ability. But they have to either produce the organic manures by utilizing the biomass they have, or they have to be collected from the locality with a minimum effort and cost. Increasing pressure of population and the disappearance of the common lands, including the wastes and government lands, make the task difficult. Bio-fertilizers and bio-pesticides are yet to become popular in the country. There is a lack of marketing and distribution network for them because the retailers are not interested in these products, as the demand is low. The erratic supplies and the low level of awareness of the cultivators also add to the problem. Higher margins of profit for chemical fertilizers and pesticides for retailing, heavy advertisement campaigns by the manufacturers and dealers are other major problems affecting the markets for organic inputs in India.

The developing countries, like India, have to design a plethora of national and regional standards in attune with those of the developed countries. The adoption and maintenance of such a regulatory framework and its implementation will be costly. In many cases, the farmers experience some loss in yields on discarding synthetic inputs in the conversion of their farming method from conventional to organic. Restoration of full biological activity in terms of growth of beneficial insect populations, nitrogen fixation from legumes, pest suppression, and fertility problems will take some time, and the reduction in the yield rates is the result of the interregnum. It may also be possible that it will take years to make organic production possible on the farm.

Hybrid seeds are designed to respond to fertilizers and chemicals. The seed, fertilizer, and pesticide industry, as well as the importers of these inputs to the country, have a stake in conventional farming. Their opposition to organic farming stems from these interests. Although many States have made remarkable progress in organic farming, it has not yet managed to assume the centre stage of Indian agriculture. It needs to overcome challenges at the policy, commercial, and infrastructural levels. Organic farming is fast assuming the new face of Indian agriculture.

Educated and well-informed farmers with the aid of Kisan help lines — launched by NGOs and Government departments and assisted by appropriate technology, have made impressive progress in organic farming. Owing to the ill effects of chemical pesticides and an increased acceptance of organic food, biological farming is being widely regarded as the next phase of evolution in the history of agriculture. The Union Government‘s determined approach, coupled with the focus of various State Governments, has helped many States to achieve remarkable progress in organic farming. For instance, Sikkim recently became the first Indian State to go wholly organic. Thanks to the efforts of the Sikkim Organic Mission, nearly 67 per cent of the population is engaged in agriculture on 50,000 hectares of land that was transformed to organic farming. This has inspired other States to follow suit and have announced detailed policies for organic farming. Despite such heartening developments, it is surprising that organic farming has not yet managed to assume the centre stage of Indian agriculture. This is due to a number of challenges faced by the agricultural sector at policy, commercial, and infrastructural levels. These challenges, if left unresolved, can negatively impact the growth of organic farming in India, besides affecting the quality of organic food produced. More importantly, it is crucial to address these issues to safeguard the financial security of the farming sector.

9. Findings and Suggestions

It is found that inadequate supply of manures, short supply of quality seeds, risk of crop failure, and low yield have been found to be predominant problems. It is found that Limited Subsidies for organic farming, Difficulty in getting crop insurance, and Non-availability of free soil testing facility have been found to be the primary challenges. It is found that consumers find required food items not available in shops, a lack of awareness in the certification process, fewer digital marketing platforms, and consumers feel prices of organic farming products are high are found to be the first-level challenges. There is a vast scope for enhancing the return by the suitable reallocation of resources used. However, the awareness level of growing organic farming is pitifully low among the public. Therefore, a massive propaganda effort is necessary, but also to use organic products in day-to-day life. The Tamil Nadu Government should initiate steps to popularize the organic way of cultivation through mass media and the agriculture department.

An adequate supply of various organic inputs, such as farmyard manures, bio-fertilizers, and bio-pesticides, must be ensured on time, and that too at a subsidized cost. Farmers' Associations have a great role to play in this respect. A data bank may be created about the time and place of availability of these inputs for the ready use of farmers. Many farmers expressed their concern over the market risk and certification process in organic products. The process of certification must be made transparent and easy. Since the entire process, right from the day of preparing land till harvesting, requires monitoring by the certifying authority, cooperation from the farmers and their association will give the desired benefit. Training on organic farming practices must be systematically given to farmers intending to practice organic cultivation. The Tamil Nadu State Agriculture Department could take special care in this respect. While discouraging dubious organic farming by unscrupulous farmers through suitable legal measures, sincere farmers should be encouraged by special subsidies and rewards. Care has to be taken in this respect to ensure no favoritism and nepotism. The Tamil Nadu Government may take initiatives to sell organic certified paddy through the network of the public distribution system at a subsidized price. The supply of organically produced rice should be used in the free noon meal programme all over the state. This will not only ensure a ready market for organic paddy, thereby attracting more farmers to undertake organic farming, but also will ensure the health of people, particularly the school-going children who are the tomorrow's national builders. The government must consider the additional cost incurred in this respect as the cost of creating strong and healthier assets. Necessary budgetary allocation may be made in this respect forthwith.

10. Conclusion

Sustainable food production is increasingly important in developing countries, as these will be the home for most of the world's population. Organic farming can contribute to sustainable food security by improving nutrition intake, supporting healthier livelihoods in rural areas, and, most importantly of enhancing biodiversity while simultaneously reducing the vulnerability of people to drastic climate change that the world is now confronting. Natural way of living is the time-tested, well-proven alternative to the chemical-dominated lifestyle that resulted in the currently prevailing harsh weather patterns and uncontrollable fatal diseases.
The present study is a humble attempt to explore various challenges and prospects of organic farming in an area where agriculture is predominant. The suggestions put forward by the researcher based on the major findings of the study will help policymakers to frame suitable measures for betterment. It is hoped that the study will be an eye-opener and will strengthen the existing knowledge on organic farming in general.

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