



ORGANIC FARMING FOR SUSTAINABLE AGRICULTURE: STATUS, ISSUES AND PROSPECTUS

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Abstract

Sustainable agriculture comprises a wide range of production practices including conventional and organic method of farming. Organic farming is one of the several approaches to meet the objective of sustainable development of agriculture. It avoids the use of synthetic chemicals as well as genetically altered organisms and usually subscribes to the principle of sustainable farming. The objective of the paper is to review the status of organic farming in India, to study the factors influencing the growth of organic farming and to study the problems and prospectus of organic farming industry in Karnataka. The study is based on both primary and secondary sources of information. The required information is collected through structured questionnaire from the agriculturists who are engaging in the production of organic crops in Mysuru district. Multi-stage stratified sampling method will be used to collect data from organic farmers. Mean score, percentages, charts and diagrams are used for the interpretation of data. On an average, the farmers who are holding 5-10 hectares of land engaging in organic farming as the maintenance is easy. Increase the soil fertility is one of the major factor which extremely influences for the growth of organic farming. Protecting the environment, concern for health, demand for organic products, personal beliefs and values towards sustainable development, influence by other farmers are the other factors which very much influence on organic farming initiatives and growth. Suitable soil and climate condition is moderately influences for the growth of organic farming and potential profitability is slightly influences on organic farming industry. Pest and disease management, Market acquisition and price premium are the top major constraints of organic farming.

Keywords: Sustainable Agriculture, Organic Farming, Climate Change, Ecology, Agripreneurs.

Introduction

Due to India's growing population, agricultural production needs to be both stabilised and increased further in a sustainable way. According to scientists the "Green Revolution," that used a lot of inputs, has come to an end and is now being supported with diminishing dividends. For the sake of preserving both life and property, a natural balance needs to be maintained at all costs. The supply of agrochemicals, which are made from fossil fuels, is decreasing and they are not renewable. Therefore, it is inevitable to go for organic farming.

Organic farming focuses on cultivating the soil and growing crops in a natural manner by using organic wastes (such as crop, animal, and farm wastes as well as aquatic wastes), other biological materials, and helpful microbes (bio-fertilizers). It aims to maintain the soil's life and health while releasing nutrients to crops for increased sustainable production in a clean, pollution-free environment. By maintaining soil organic matter levels, promoting soil biological activity, and using judicious mechanical intervention, organic farming preserves the long-term fertility of soils. Organic farming supplies crop nutrients indirectly to the plant by using relatively insoluble nutrient sources by the action of soil microorganisms. In organic farming, nitrogen self-sufficiency can be achieved through



the use of legumes and biological nitrogen fixation as well as effective recycling of organic materials including crop residues and livestock manures.

Review of Literature

Arshdeep S et al (2022) analysed the perceptions, constraints and reasons for adopting organic farming in Himachal Pradesh, India. This study was based on primary and secondary sources of information. In this study, 60 organic crop growers were selected using a three- stage random sampling design in the year 2018-19 and these farmers had adopted organic farming under Parampragat Krishi Vikas Yojana (PKVY). This study revealed that the cost of cultivation is increasing continuously with the increasing use of inorganic input was the major reason for shifting farmers to organic farming. The study found that department of agriculture is playing a significant role in changing the perception of farmers toward the adoption of organic farming and also farmers adopted organic farming because of low cultivation cost. The study also revealed that low productivity of organically cultivated crops and difficulty in disposal of organic produce due to a lack of specialized agencies.

Renu S et al (2022) studied organic farming: A Sustainable Agricultural Practice. The objective of this study was to review the status, objectives, principles and problems of organic farming in India. This study was based on secondary sources of information. The study revealed that organic farming is an economical and environmentally friendly method that has immense potential in preventing environmental degradation. Organically cultivated food stuffs have become increasingly popular due to their numerous health benefits. This study also highlighted that India has experienced a significant expansion of organic farming and presently one of the major organic producers in the world. But shifting to organic farming still remains a big challenge in developing countries like India.

Suryatapa D et al (2020) studied Organic Farming in India: A Vision towards a Healthy Nation. The objective of the papers was to review the process, status and future prospects of organic farming in India. This study was a conceptual in nature and used secondary sources of information. The major highlights of the study were- popularity of organically grown foods is increasing day by day owing to their nutritional and health benefits. Organic farming also protects the environment and has a greater socio-economic impact on a nation. India is a country that is bestowed with indigenous skills and potentiality for growth in organic agriculture. Although India was far behind in the adoption of organic farming due to several reasons, presently it has achieved rapid growth in organic agriculture and now becomes one of the largest organic producers in the world. Therefore, organic farming has a great impact on the health of a nation like India by ensuring sustainable development.

Significance of the Study

Organic farming is one of the several approaches to meet the objective of sustainable development of agriculture. It avoids the use of synthetic chemicals as well as genetically altered organisms and usually subscribes to the principle of sustainable farming. In India research on organic farming is so crucial for promoting sustainable agriculture, ensuring environmental protection, enhancing economic viability and meeting the needs of both farmers and consumers. It plays an important role in addressing the unique challenges and opportunities associated with organic farming in India's diverse agricultural landscape. There are various reasons to conduct research on organic farming. Such as environmental conservation, Economic Sustainability, Export Opportunities, Cultural and Traditional Practices, Climate Change Mitigation etc.



Scope of the Study

The population of this study is the agriculturists who are engaging in the production of organic crops in Mysuru District. Mysuru, Hunsur, Periyapatna and Krishnarajanagar Taluks have been selected for the study as these Taluks have shown interest in organic farming methods, particularly in the cultivation of organic fruits and vegetables. This study confined to the 72 agriculturists who have fully adopted organic farming in Mysuru District. The major crops selected for the study are vegetables and fruits.

Objectives of the Study

The major objective of the study is:

- To review the status of organic farming in India
- To study the factors influencing the growth of organic farming and
- To study the problems and prospectus of organic farming industry in Karnataka

Research Methodology

The study is descriptive and an exploratory study. The present study is based on both primary and secondary data. The primary data has been collected through well designed survey schedules and personal interview approach in the Mysuru District of Karnataka. The other required information is collected through secondary sources like journals, articles and websites. The study is based on Multi-stage random sampling method. The sample size consists 72 respondents who are the agriculturists engaging in production of organic crops. Descriptive statistics mean and standard deviation are used for analysis.

Distribution of Samples among Taluks

Sl.No.	Taluk	Number of Samples
1	Mysuru	21
2	Hunsur	17
3	Periyapatna	16
4	Krishnarajanagar	18
Total		72

Present status of Organic Farming in India

Organic farming makes sure that the environment is rich and pure. According to research, ecological production areas have about 30% more wildlife and plant life nearby than traditional farms, because there are no pesticides used and far less fertilizer. The COVID-19 pandemic has altered public perceptions about organic food, placing a greater emphasis on food safety and nutrition for a strong immune system. It is important to discuss nutritional security rather than just food security, which only includes carbohydrates. Organic food is said to be the best option out of all the healthy food options available. So, since the epidemic began, there has been a rise in the consumption of organic food. Foods grown organically typically have higher levels of antioxidants, certain minerals, and lack of hazardous chemicals and pesticides.

According to the FiBL survey, 2021 India is in a unique position among the 187 nations in practicing organic agriculture. Out of 2.30 million acres in the world, India is home to 30% of all organic producers. In India, 27, 59,660 total farmers, 1703 total processors and 745 traders make up the total area under organic cultivation. In recent years there is a significant proportional growth in the amount of land used for organic farming across India.



Top 10 countries in terms of largest certified organic area

Sl.No	Country	(In Million Hectares)
1	Australia	35.69
2	Argentina	3.67
3	Spain	2.35
4	USA	2.33
5	India	2.3
6	France	2.24
7	China	2.22
8	Uruguay	2.14
9	Italy	1.99
10	Germany	1.61

Source: FiBL Survey 2021

In India, 3.1 million organic producers were reported. India continues to be the country with the highest number of producers. Most small-scale producers are certified in groups based on an internal control system. Organic farming is in a beginning stage in India. About 2.30 million hectares of farmland was under organic cultivation. A few states have taken the lead in improving organic farming coverage, as a major part of this area is concentrated only in a handful of states. Madhya Pradesh tops the list with 0.76 million area under organic cultivation that is over 27 per cent of India's total organic cultivation area. The top three states such as Madhya Pradesh, Rajasthan and Maharashtra account for about half the area under organic cultivation. The top 10 states account for about 80 per cent of the total area under organic cultivation.

STATEWISE PRODUCTION OF BIOFERTILISERS IN INDIA (2021-22)			
(Zone wise)			
	State	Carrier based (MT)	Liquid based (KL)
South Zone			
1	Andaman & Nicobar Island	0	0
2	Andhra Pradesh	123.19	98.49
3	Daman & Diu	0	0
4	Karnataka	1446.5	870.53
5	Kerala	164.98	2612
6	Lakshadweep	0	0
7	Puducherry	97.17	2.16
8	Tamil Nadu	88652.43	434.313



9	Telengana	448.72	150.14
West Zone			
1	Chhattisgarh	558.88	268.68
2	Gujarat	19483.31	8055.72
3	Goa	30	0
4	Madhya Pradesh	21834.3	15811.1
5	Maharashtra	5328.18	2140.95
6	Rajasthan	10612	0
7	Dadar& Nagar Haveli	0	0
North Zone			
1	Delhi	0	0
2	Chandigarh	0	0
3	Haryana	3105.42	113.17
4	Himachal Pradesh	0.22	0.22
5	Jammu & Kashmir	0	0
6	Punjab	16042.27	361.37
7	Uttar Pradesh	0	5725.64
8	Uttarakhand	3708.83	1150.81
East Zone			
1	Bihar	74.59	2.11
2	Jharkhand	0	0
3	Odisha	19406.64	859.6
4	West Bengal	448.59	33.54
North East Zone			
1	Arunachal Pradesh	0	0
2	Assam	438.54	3447.35
3	Manipur	20	24.01
4	Meghalaya	0	0
5	Mizoram	1.4	0
6	Nagaland	19.14	0
7	Sikkim	0	69.02
8	Tripura	283.99	9.02
Total		192329.28	4223.92

Source: National Centre for Organic Farming



Results and Discussions

Table 1: Demographic Profile of the Respondents

	No. of Respondents	Percentage (%)
a) Age in Years:		
18-25	5	6.94
26-40	16	22.22
41-50	28	38.89
Above 50	23	31.94
b) Gender		
Male	68	94.44
Female	4	5.56
c) Marital Status		
Married	64	88.89
Unmarried	8	11.11
d) Educational Qualification		
SSLC	6	8.33
PUC	18	25.00
Degree	36	50.00
Post-graduation	12	16.67
e) Main Occupation		
Farming	32	44.44
Employee in Government Sector	4	5.56
Employee in Private Sector	8	11.11
Business	28	38.89

In Table 1, demographic profile of the respondents is presented. Most of the respondents are male that is 94% and remaining 6% respondents are female. Majority (39%) of the respondents are in the age group between 41-50, followed by 32%, 22% and 7% are in the age group above 50, between 26-40 and 18-25 respectively. Most of the respondents are married i.e. 89% and remaining 11% of the respondents are unmarried. Main occupation of the majority of the respondents are farming i.e 44%. 39% of the respondents' main occupation is business apart from organic farming and 11% of the respondents are working in private sector.

Table 2: Size of the Farm

Sl.No.	Size of the farm (In Hectares)	No. of Respondents	Percentage
1	0-3	7	9.72
2	3-5	12	16.67
3	5-10	31	43.05
4	10 and Above	22	30.55

A detail of size of the farm holding by the respondents has been presented in Table 2. Majority of the respondents (43%), holding 5-10 hectares of farm land, 30% of the respondents having land of 10 acre and above and 17% of the respondents having 3-5 acre of farm land.



Table 3: Factors influencing for the growth of organic farming

Factors	Extremely		Very Much		Moderately		Slightly		Not at all		MEAN
	F	%	F	%	F	%	F	%	F	%	
Protecting the Environment	15	20.83	26	36.11	20	27.78	8	11.11	3	4.17	3.58
Having concern for your own and family health	21	29.17	32	44.44	9	12.50	6	8.33	4	5.56	3.83
Potential Profitability or Cost Saving	0	0.00	4	5.56	22	30.56	31	43.06	15	20.83	2.21
Demand for Organic product in the Market	2	2.78	29	40.28	25	34.72	14	19.44	2	2.78	3.21
Personal Belief and Values: Commitment to Sustainable Agriculture	14	19.44	30	41.67	16	22.22	8	11.11	4	5.56	3.58
Increase the Soil Fertility	36	50.00	27	37.50	7	9.72	2	2.78	0	0.00	4.35
Influenced by Other farmers and Organizations	19	26.39	33	45.83	16	22.22	3	4.17	1	1.39	3.92
Suitable Soil and Climate Condition for Organic Farming	7	9.72	25	34.72	31	43.06	5	6.94	4	5.56	3.36

In Table 3, factors influencing for the growth of organic farming has been presented. Increase the soil fertility is one of the major factor which extremely influences for the growth of organic farming. Protecting the environment, concern for health, demand for organic products, personal beliefs and values towards sustainable development, influence by other farmers are the other factors which very much influence on organic farming initiatives and growth. Suitable soil and climate condition is moderately influences for the growth of organic farming and potential profitability is slightly influences on organic farming industry.

Table 4: Constraints of Organic Farming Industry

Constraints	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree		MEAN
	F	%	F	%	F	%	F	%	F	%	
Lower Yield	16	22.22	23	31.94	26	36.11	5	6.94	2	2.78	3.53
Pest and Disease Management	25	34.72	18	25.00	15	20.83	9	12.50	5	6.94	3.68
Weed Control	19	26.39	24	33.33	16	22.22	7	9.72	6	8.33	3.60
Limited Synthetic Inputs	15	20.83	20	27.78	29	40.28	6	8.33	2	2.78	3.56
Certificate and Compliance	0	0.00	0	0.00	17	23.61	32	44.44	23	31.94	1.92
Market Acquisition and Price Premium	32	44.44	25	34.72	8	11.11	4	5.56	3	4.17	4.10
Transition Period	18	25.00	28	38.89	14	19.44	7	9.72	5	6.94	3.65
Knowledge and Education	21	29.17	33	45.83	15	20.83	3	4.17	0	0.00	4.00
Resource Intensiveness	19	26.39	22	30.56	29	40.28	1	1.39	1	1.39	3.79
Climate Vulnerability	12	16.67	24	33.33	33	45.83	2	2.78	1	1.39	3.61



Major constraints pertaining to organic farming industry has been presented in Table 4. 36% of the respondents are neutral in their opinion with regard to lower yield as major constraints. 35% and 44% of the respondents have strongly agreed that pest & disease management and market acquisition and price premium as the major constraints for organic farming industry respectively. 33% of the respondents have agreed that weed control as one of constraints of organic farming industry. 40% and 46% of the respondents are neutral in their opinion with regard to resource intensiveness and climate vulnerability as the constraints for organic farming industry respectively. 39% and 46% of the respondents have agreed that transition period and knowledge and education are the constraints of organic farming respectively.

Major Findings

- India is the fifth country among top 10 countries in terms of largest organic certified area.
- Middle age farmers who are between 41-50 age group are generally engage in organic farming in India.
- Main occupation of majority of the farmers who are engaging in organic farming is agriculture only as some of the farmers are engaging in business and employment as their main occupation.
- On an average, the farmers who are holding 5-10 hectares of land engaging in organic farming as the maintenance is easy.
- Increase the soil fertility is one of the major factor which extremely influences for the growth of organic farming.
- Protecting the environment, concern for health, demand for organic products, personal beliefs and values towards sustainable development, influence by other farmers are the other factors which very much influence on organic farming initiatives and growth.
- Suitable soil and climate condition is moderately influences for the growth of organic farming and potential profitability is slightly influences on organic farming industry.
- Pest and disease management, Market acquisition and price premium are the top major constraints of organic farming. Organic farming has limited methods for pest management because the environment and human health should be protected.
- As per the opinion of the respondents certification and compliance is not a major constraint of organic farming.

Conclusions

The commitment of organic farming to soil health is one of its main advantages. Organic farmers safeguard the natural composition of the soil, fostering biodiversity and maintaining critical microorganisms necessary for nutrient-rich crops, by avoiding from applying chemical fertilizers and pesticides. Organic farming has the potential to make a major economic contribution to India. The industry has a favorable effect on GDP growth, job creation, and export revenue. It encourages sustainable growth as well. Of all industries, agriculture accounts for 14% of GDP and employs 42% of workers. Organic farming is promoted under various schemes of the state and central government which can boost the farmers to get into organic farming.

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