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Current Scenario of Organic Farming in India: An Overview

Md. Reza Kaushar Hasmi* Dr. Md Areful Hoque **

***Research Scholar (Ph.D.), Department of Geography, Central University of Karnataka, Gulbarga, Karnataka, India**

****Assistant Professor of Geography, St. Xavier's College, Mahuadanr, Latehar district, Affiliated College under Nilamber Pitamber University (NPU), Medininagar, Jharkhand, India.**

Abstract:

Organic farming is the most fundamentals aspect in agricultural geography. Organic farming accounts currently 1 per cent land in all over the world. In the modern era of agriculture organic farming is the most burning issues with regard to sustainable agriculture and consumption of healthy food habits. Organic farming is a process in which chemical fertilizers and pesticides or any other chemical inputs are to be avoided. It is commonly recognised as farming systems that exclude the use of chemical and synthetic fertilizers, pesticides. Organic farming is basically a specialized form of farming involving selected application of organic fertilizers, green manures, cow dung, crop residues, green manuring crops, earthworms casts (vermiculture) etc. to enrich the soil fertility with adequate nutrients and provide good soil structure and soil health with the aim of creating a sustainable form of farming system. Crop rotation, inter-cropping and minimal tillage are also used to improved the soil fertility. Organic farming also known as ecological or biological farming. This paper is an attempt to know the major components of organic farming, to focus the major determinants of organic farming and assessing the status of organic farming and its impacts on human health condition, to give valuable suggestions for better development of organic farming in India. Organic farming is not only about managing soil-plants and environmental interaction in a holistic manner. Sikkim is only first state in India that practises 100 per cent of organic farming state.

Key Words: Organic farming, Agriculture, Eco-friendly, Sustainable Agriculture, Health

Introduction:

Agriculture is the backbone of Indian economy, near about 60 percent of peoples directly or indirectly engaged in this activity. Organic farming is the most fundamentals aspect in agricultural geography. In the modern era of agriculture organic farming is the most burning issues with regard to sustainable agriculture and consumption of healthy food habits. Organic

farming is an agricultural system which originated early in the 20th century in reaction to rapidly changing of farm practices. Organic farming is a process in which chemical fertilizers and pesticides or any other chemical inputs are to be avoided. It is commonly recognised as farming systems that exclude the use of chemical and synthetic fertilizers, pesticides. Organic farming is basically a specialized form of farming involving selected application of organic fertilizers, green manures, cow dung, crop residues, green manuring crops, earthworms casts (vermiculture) etc. to enrich soil with adequate nutrients and provide good soil structure and soil health with the aim of creating a sustainable form of farming system. Organic farming also known as ecological or biological farming. Organic farming is not only about managing soil-plants and environmental interaction in a holistic manner. It has also food quality, human health, animal warfare and socio-economic aims. Sikkim is only first state in India that practises 100 per cent of organic farming state. The conventional or modern farming has been heavily criticized for causing biodiversity loss, soil erosion and increase water pollution due to rampant uses of synthetic fertilizer and pesticides. "An organic farmer is the best peacemaker today, because there is more violence, more death, more destruction, more wars, through a violent industrial agricultural system. And to shift away from that into agriculture of peace is what organic farming is doing".

The population of the planet is skyrocketing, overpopulation and providing food for the world is becoming extremely difficult. With the increasing use of pesticides in farming over the past few years, there has been a steady rise in the numbers of diseases and illness of human beings. Organic agriculture is an ecologically intensive production system expanding worldwide as demand for sustainability increases (Eyhorn et al., 2019; Willer et al., 2019). Although organic farms produce lower yields than comparable conventional farms (Seufert et al., 2012; Ponisio et al., 2015), they are more profitable, more friendly to pollinators and the environment, and deliver equally or more nutritious foods with fewer pesticide residues (Kennedy et al., 2013; Tuck et al., 2014; Lori et al., 2017) of the mean effects of organic and conventional farming systems on sustainability metrics such as biodiversity, yield, soil quality, and profitability; they did not consider variability. In contrast, few studies have considered variability of any sustainability metric over time (Pimentel et al., 2005; Smith et al., 2007). According to *Webster's Dictionary*, "organic" is defined as relating to or belonging to the class of chemical compounds with a carbon basis. Organic farming aims to preserve soil and ecosystem health by forgoing heavy use of artificial fertilizers and pesticides. In addition

to these potential beneficial effects on the environment, consumers are attracted to organic foodstuff because of the claimed positive health effects, presumably due to the absence of pesticides or artificial hormones. Potential detrimental effects of pesticide application may include disruption of neuro-endocrine signaling, negative effects on immune function or the development of cancer, depending on the particular class of pesticide. Especially prenatal exposure, or exposure during infancy, may aggravate these effects. It has been shown that infants consuming a predominantly organic diet have almost non-detectable levels of oregano-phosphorus pesticide metabolites, suggesting a starting point for investigating molecular mechanisms of the potential health benefits of organic foods. The United States Department of Agriculture (USDA) which regulates organic foods does not claim that organically produced food is safer or more nutritious than traditionally produced foods. However, risks have been identified with exposure to some pesticides.

The prospect that organic agriculture has the potential to feed the world is welcome news in light of the contradictions of modern agriculture. These include the massive productivity of green-revolution agriculture yet the stubborn persistence of hunger and malnutrition, the loss of small farms even though they are more productive and contribute more to local economies than do large farms, and the pervasive environmental destruction by agricultural biocides and synthetic fertilizers even as more and more ecological services of agricultural landscapes are being recognized. Organic agriculture *per se* cannot resolve all of these contradictions, but its potential to provide enough food to feed the entire world opens the door to the creation of a new kind of food system based on agro ecological production principles. We (Badgley et al. in this issue) have demonstrated two critical points. The first is that the relative yields of organic versus non-organic methods (green-revolution methods in the developed world, low-intensive methods in the developing world) suffice to provide enough calories to support the whole human population eating as it does today. This conclusion is based on a global dataset of 293 yield ratios for plant and animal production. The second point concerns nitrogen fertility. Data from 77 published studies suggest that nitrogen-fixing legumes used as green manures can provide enough biologically fixed nitrogen to replace the entire amount of synthetic nitrogen fertilizer currently in use. Thus, the principal arguments from critics of organic agriculture are invalid. These results are controversial, partly from prejudice and vested interests in the current agricultural system and partly from disputed aspects of the analysis. While this study claims that organic yields and nitrogen fertility methods *could* feed the world, it does not

forecast yields for any particular crop or region, nor does it claim that a global organic food system would necessarily increase food security anywhere. Food security depends on policies and prices as much as on yields.

After the independence of India the agriculture practices was not healthy and there is the shortage of food security. Due to traditional farming there is no bumper production in agriculture. In the decade of 1960-68 due to adoption of green revolution, India become self sufficient in wheat and rice production. According to world of Organic Agriculture Report (2018), India is the home to 30 percent of total organic producers in the world, but accounts for just 2.59 percent (1.5 million Hectares) of the total organic cultivation area of 57.8 million hectares. Organic farming promotes consumer health by keeping soil healthy and maintaining environment integrity.

Statement of Problems

Organic farming system in India is not new and is being followed from ancient time. Organic farming is the most precious and most practices farming especially in countryside areas of India. With the use of organic materials the production is not taken bumper production or suddenly tremendous production but the production crops or materials are very healthy for the human being. The chemical fertilizers or chemical pesticides or insecticides are very much detrimental for the soil condition and ecosystem of the environment. The materials of organic farming are dingy, smelly and dirty, it requires a long years of time to prepare the organic farming materials. It is also difficult to carry the materials from the preparation place to the field. On the other hand, organic farming is eco-friendly with the environment.

Organic farming accounts currently 1 per cent land in all over the world. In organic farming there is no use of chemical fertilizers, chemical herbicides, pesticides and additives. So, there are no negative effects on natural environment. It is very much eco-friendly. The quality of production in organic farming is also good. The organic product is also very good for our environment and human health. All the country of the world is promoting organic farming. The outcomes or findings from this study will be very helpful for Administrators, Policymakers, Economists, Sociologists, Researchers, Academicians, Journalists, NGO workers, Ministry of Rural Development, Ministry of Agriculture, Government of India for their policy making.

Objectives of the Study

The main objectives of the study are

1. To know the status of organic farming in India and major components of organic farming.
2. To focus the major determinants of organic farming and assessing the Impacts of organic farming on Environment and human health condition.
3. To give valuable suggestions for better development of organic farming.

Database and Research Methodology

The present study is based on Secondary sources of data. The data has been collected from Agriculture & Processed food products export and Development Report 2015-16 to 2020-21, on National programme for organic production, Ministry of Agriculture, Government of India Reports, 2020-21, various news papers, journals, books and edited books, Google Scholar, Researchagate etc. The current research work is analytical, descriptive and empirical type of research work.

Results and Discussion

Table 1. 1 : Status of Organic Agriculture: in India 2020-21

Agriculture components	Area (In Hectares)
Cultivated Area (Organic + In-conversion)	2657889.33
Wild Harvest Collection Area	1681295.61
Total Area (Cultivated + Wild Harvest)	4339184.93

Source: Agriculture & Processed food products export and Development Authority (APEDA) Report, 2020-21, Ministry of Commerce and Industry, Government of India

Table 1. 2: Organic farm operators: in India 2020-21

Organic Farm Operators	Total (In Numbers)
Individual farm producers	3495
ICS Groups	4781
Total Processors	1703
Total Trader	745
Wild Operators	71
Total Operators	10795
Total Farmers	**1599010**

Source: Agriculture & Processed food products export and Development Authority (APEDA) Report, 2020-21, Ministry of Commerce and Industry, Government of India

Table 1. 3: State-wise total area under organic farming India, 2015-16 to 2020-21

State Name	Total Area (In Hectares)					
	2015-16	**2016-17**	**2017-18**	**2018-19**	**2019-20**	**2020-21**
Madhya Pradesh	2275567.10	2292697.39	1156881.40	918303.08	1161015.03	1637730.46
Rajasthan	553447.70	539522.12	442133.72	632701.23	539244.81	481862.38
Maharashtra	266299.24	292391.78	304074.81	261571.74	293135.19	371798.28
Chhattisgarh	180924.94	179752.14	191464.66	206180.71	208392.80	286684.52
Himachal Pradesh	1358449.24	14376.72	170153.47	204836.35	203847.50	203736.47
Jammu and Kashmir	54515.01	181608.32	180870.34	187002.89	215275.95	19276.82
Karnataka	33647.27	81948.81	105515.02	104962.37	170418.49	174423.56
Uttar Pradesh	106292.39	101459.95	192734.40	205980.82	132031.67	159307.73
Gujrat	80421.40	70495.05	8400.71	94708.69	95207.58	147866.41
Odisha	109224.05	99736.17	117910.30	127851.77	115676.68	96306.88
Uttarakhand	99900.39	93586.42	103134.66	41409.55	43647.02	82210.20
Jharkhand	77048.73	36813.95	51187.93	58116.87	64254.18	81661.70
Sikkim	75851.21	75218.28	76076.18	75798.92	75717.65	75729.66
Kerala	44788.50	43701.88	34160.14	40911.24	47575.29	48364.18
Tamil Nadu	19529.79	10775.69	20070.51	26546.83	36766.59	41618.86
Meghalaya	4609.42	9629.60	40335.66	48409.74	45382.40	38376.39
Andhra Pradesh	93350.73	172783.03	184748.65	37409.72	42101.87	36801.36
Bihar	91.76	679.20	695.80	3519.51	22712.55	29902.54
West Bengal	17890.41	5176.03	5811.48	20989.65	6392.05	21002.61
Punjab	175277.20	17648.53	18000.77	25524.58	25637.95	18637.50
Assam	28493.24	23930.40	28071.81	28234.67	26753.67	18470.84
Goa	16957.59	15762.43	15698.98	20964.80	20786.66	18222.16
Nagaland	6186.93	4699.93	8839.86	8268.56	14254.97	14790.38
Manipur	251.40	241.40	5397.90	7460.83	14990.07	14724.92
Arunachal Pradesh	72485.26	72311.27	6179.69	9246.94	10657.66	13114.12
Mizoram	213.80	210.00	998.95	7039.89	10029.89	13038.89
Telangana	10355.59	9687.84	8919.82	8759.52	8742.28	6865.56
Tripura	203.56	203.56	2251.19	2534.52	3539.18	6521.31
Haryana	4889.21	5031.76	6912.40	5998.58	6155.75	4903.06
Total	**5710348.00**	**4452987.00**	**3566538.77**	**3428638.77**	**3669801.33**	**4339184.94**

Source: Agriculture & Processed food products export and Development Authority (APEDA) Report, 2020-21, Ministry of Commerce and Industry, Government of India

Major Components of Organic Farming

(i) Cow Dung
(ii) Green Manures

(iii) Vermi Composed and Composed Manures
(iv) Crop Rotation and Legumes Crops
(v) Animals Husbandry, Bio-fertilizers and Biological Management

Table 1.5 Top 5 States of India in Largest Organic Farm Production 2020-21

State Name	Organic Production (In Metric Tonnes)
Madhya Pardesh	1392095.23
Majarashtra	775774.99
Karnataka	355718.73
Uttar Pradesh	183409.04
Odisha	131852.01

Source: Agriculture & Processed food products export and Development Authority (APEDA) Report, 2020-21, Ministry of Commerce and Industry, Government of India

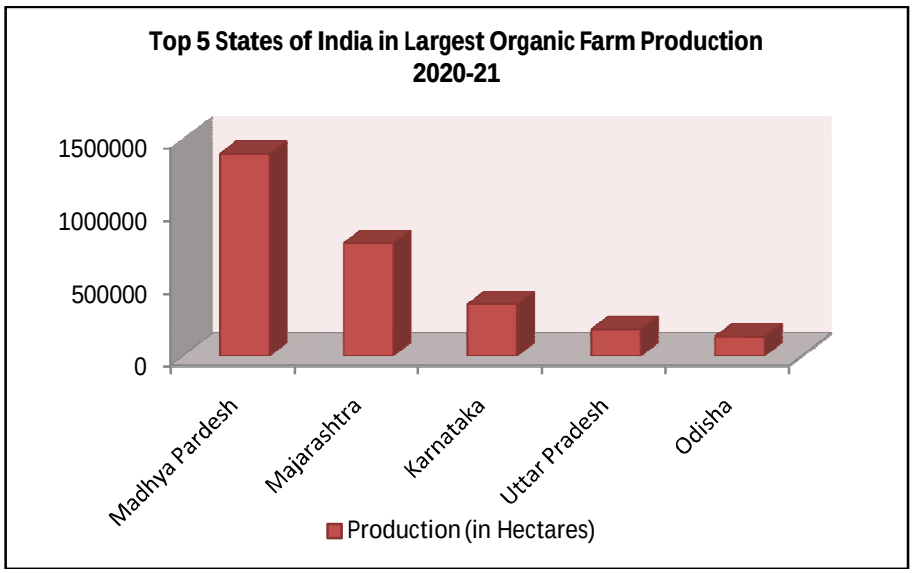
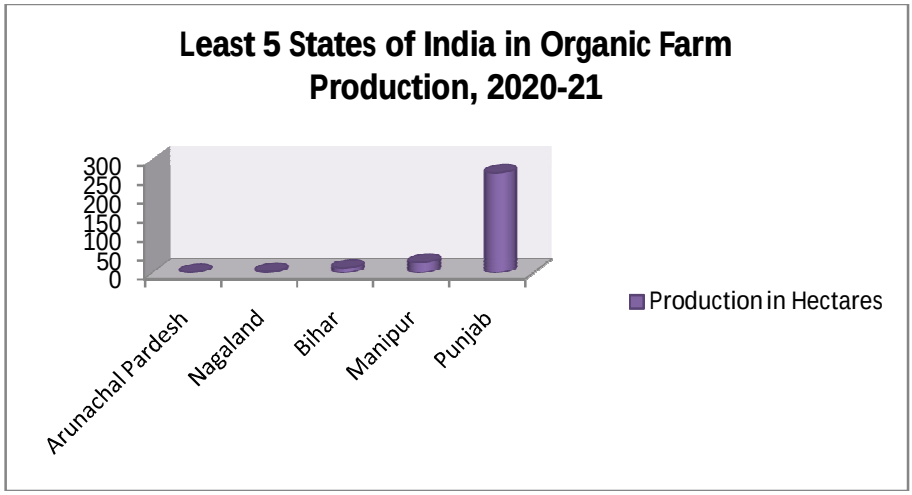


Table 1.5 Least 5 States of India in Organic Farm Production 2020-21

State Name	Organic Production (In Metric Tonnes)
Arunachal Pardesh	1.09
Nagaland	3.50

Bihar	12.60
Manipur	27.74
Punjab	264.63

Source: Agriculture & Processed food products export and Development Authority (APEDA) Report, 2020-21, Ministry of Commerce and Industry, Government of India



Impacts of Organic Farming to the Environment

- An organic food-production system creates healthy soils, the foundation for healthy crops. It care the environment,
- Farming practices in an organic system include growing diverse crops and a crop-rotation plan using cover crops, which are plants beneficial in preventing soil erosion, enhancing soil fertility, and disrupting weed, pest, and disease cycles.
- An organic food-production system eliminates synthetic fertilizers, thereby reducing nitrogen and phosphorus contamination of groundwater.
- An organic food-production system conserves fossil-fuel energy.
- An organic food-production system reduces the use of pesticides that persist in the environment.
- It protecting soil quality using organic materials and encouraging biological activity.

Impacts of Organic Farming on Human Health

- Organic food contributes to better health through reduced pesticide exposure for all and increased nutritional quality. Organic food can feed us and keep us healthy without producing the toxic effects of chemical agriculture.
- Organic crops have higher antioxidant components that help in reducing the various chronic diseases such as heart diseases, blood pressure problems, migraine, diabetes and cancer of human beings.
- Organic food has higher nutritional values such as vitamins and minerals to the human body
- Organic food consumption may reduce the risk of allergic diseases and of overweight and obesity.

Benefits of Organic Farming

Various organic agricultural technologies have been used for about 6000 years to make agriculture sustainable while conserving soil, water, energy, and biological resources. The following are some of the benefits of organic technologies identified in this investigation:

1. Fruits and vegetables are better taste and more nutrition contents.
2. Although higher soil organic matter and nitrogen levels were identified for the organic systems, similar rates of nitrate leaching were found to those in conventional corn and soybean production.
3. The high levels of soil organic matter helped conserve soil and water resources and proved beneficial during drought years.
4. Depending on the crop, soil, and weather conditions, organically managed crop yields on a per-ha basis can equal those from conventional agriculture, although it is likely that organic cash crops cannot be grown as frequently over time because of the dependence on cultural practices to supply nutrients and control pests.
5. Because organic foods frequently bring higher prices in the marketplace, the net economic return per ha is often equal to or higher than that of conventionally produced crops.
6. Crop rotations and cover cropping typical of organic agriculture reduce soil erosion, pest problems, and pesticide use.
7. The recycling of livestock wastes reduces pollution while benefiting organic agriculture.

8. Abundant biomass both above and below the ground (soil organic matter) also increases biodiversity, which helps in the biological control of pests and increases crop pollination by insects.
9. Traditional organic farming technologies may be adopted in conventional agriculture to make it more sustainable and ecologically sound.
10. The United Kingdom, Netherlands and Germany, USA, Australia, Singapore, Japan have a high demand for organic mangoes, organic pineapples, organic vegetables which could be exported by India.

Major Challenges and Constraints of Organic Farming in India

- ❖ Low Yield in Agriculture Production
- ❖ Lack of Good Marketing
- ❖ High Input Cost of Farming
- ❖ Lack of financial Support from the Government
- ❖ Shortages of biomass
- ❖ Inadequate farming Infrastructure
- ❖ Low quality and standards of Manures
- ❖ Lack of Governmental policies to promote organic agriculture
- ❖ Labour Intensive and time taking
- ❖ Inability to meet the Export
- ❖ Lack o Awareness of the farmers
- ❖ Political and Social Factors

Major Schemes Initiatives for Promotion of Organic Farming in India

- ➢ Paramparagati Krishi Vikas Yojna (PKVY)
- ➢ Rashtriya Krishi Vikash Yojna
- ➢ One District – One Product Mission (ODOP)
- ➢ Farmers Solar Energy Power Subsidy

Conclusion and Suggestion

Organic farming is more environmentally friendly than conventional farming. Organic farming is the most primitive form of agriculture, which practices by the aborigines or native tribal people during ancient's time. When due to implication of modern agriculture used of pesticides, insecticides chemical fertilizers, the soil become saline and alkaline and quality of

foods become unhealthy then we are shifted towards organic farming. The organic farming or agriculture has the potential to feed the world is welcome news in light of the contradictions of modern agriculture. Integrated pest and nutrient management systems and certified organic agriculture can reduce reliance on agrochemical inputs as well as make agriculture environmentally and economically sound. Heavy agricultural reliance on synthetic chemical fertilizers and pesticides is having serious impacts on public health and the environment. The aim of organic agriculture is to argument ecological processes that foster plant nutrition yet conserve soil and water resources. Organic systems eliminate agrochemicals and reduce other external inputs to improve the environment and farm economics. Organic food industry has been blossoming in India, it has to be recognized as a separate industry. We should always remember the famous statement by Jaggi Vasudev, "With wrong farming methods, we turn fertile land into desert. Unless we go back to organic farming and save the soil, there is no future."

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