



# Organic Farming in India: The Present Scenario

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**Abstract:** One of the talking points about organic farming in recent years has been its long-term sustainability not only in terms of production and productivity but also for the environment. In fact, in the last few decades, the organic farming sector has undergone a significant change. There has been an impressive surge at various levels of research and scientific implications at the world level in this area. According to a recent report by organic giants FiBL and IFOAM-Organic Internationals, nearly 200 countries of the world today are involved in organic activities. These figures suggest that farmers are no longer unaware of the benefits offered by organic farming. Lesser use of synthetic compounds not only help producer to cut off extra expenses, it is also helpful to the consumer to get safe food and surroundings. Hence, maintenance of system productivity as well as resource quality is the need of the hour. Organic farming in India can play a significant role in sustaining the environment as we have mostly an agrarian economy and nearly half of the population is engaged in this sector. Therefore, it would be interesting to study the present status and prospects of organic farming in India.

Keywords: organic farming, agriculture, sustainability, health, green revolution.

## Introduction

The quality of food and its safety are two vital factors that have attained significant attention in people all over the world. Growing environmental consciousness and numerous food hazards have led to considerable decrease in the consumer's faith towards the quality of food in the last decades. Agriculture sector the world over has witnessed a remarkable growth since the nineteenth century. This growth mostly driven by green revolution technology, has made a noteworthy contribution on aggregate supply of food grains, ensuring sufficient food security to the growing population. The green revolution has brought about a series of technological achievements in agricultural production, particularly in Asia. Worldwide cereal harvests tripled between 1950 and 2000, making it possible to provide enough dietary calories for a world population of six billion by the end of the 20th century (Trewavas, 2002). The agricultural development till now focused on increasing the productivity and self-sufficiency in food grain production than on a more holistic natural resource management for food security and sovereignty. The increase in food production through intensive cultivation has not only been accompanied by a multitude of difficulties and challenges such as the deterioration and exploitation of natural resources but also affected the human health. At present, more comprehensive system-oriented approaches are gaining momentum and are expected to better address the difficult issues associated with the complexity of farming systems in different locations and cultures (IAASTD, 2009). Therefore, the next stage of growth faces a serious challenge in

terms of sustainability in terms of both, environment and foodgrains. So, protection of human health, environment along with production sustainability is the major concern at world level now-a-days. These problems have led to increasing awareness among the masses and a felt need for shifting from the input intensive agriculture perused during the green revolution phase, to sustainable in different parts of the world. While the need for a paradigmatic shift in the growth strategy is well recognized, the transition from input intensive to sustainable farming however, has certain inherent difficulties (Babar, 2012). Notwithstanding these limitations, policies in both developed as well as developing countries have led increased emphasis on promoting sustainable agriculture. Intensive conventional farming can add contamination to the food chain. For these reasons, consumers are quested for safer and better foods that are produced through more ecologically and authentically by local systems. Organically grown food and food products are believed to meet these demands (Rembalkowska, 2007).

In recent years, organic farming as a cultivation process is gaining increasing popularity (Dangour et al., 2010). Organically grown foods have become one of the best choices for both consumers and farmers. Organically grown foods are part of go green lifestyle. But the question is that what is meant by organic farming? (Chopra et al., 2013) The word 'organic' denotes 'the plant or animal origin'. It also refers to an organism's organizational structure. The term 'organic' was first coined by Northbourne, in 1940, in his book entitled 'Look to the Land'. Northbourne stated that 'the farm itself should have biological completeness; it must be a living entity; it must be a unit which has within itself a balanced organic life' (Northbourne, 2003). He also defined organic farming as 'an ecological production management system that promotes and enhances biodiversity, biological cycles and soil biological activity'. According to the United States Department of Agriculture, 'organic farming is a system which avoids or largely excludes the use of synthetic inputs like feed additives, fertilizer, pesticide, hormone and the maximum extent feasible rely upon crop rotations, crop residues, animal manures, off farm organic waste, mineral grade rock additives and biological system of nutrient mobilization and plant protection'. According to the Food and Agriculture Organization, (FAO) organic farming is a special type of production management that uses on-farm agronomic, biological, and mechanical approaches instead of any artificial off-farm inputs to support and increase the health of agro-ecosystems, including biodiversity, biological cycles, and soil biological activities.

Organic farming is a crop production system that excludes use of synthetic compounds, growth regulators and livestock food additives but uses organic inputs and recycle farm waste for nutrient supply, emphasize cropping rotation and soil biological processes for pest management and hence significantly reduces negative effects attributed to conventional farming. It can sustain the health of soils, ecosystems, and people by combining tradition, innovation, and science because it combines crop management and animal husbandry in the agro-ecosystems which are socially acceptable and ecologically sustainable. Therefore, this system minimizes the use of external inputs and knowledge, and aims at optimization of crop productivity rather than its maximization through renewal and strengthening of ecological processes and functions of farm ecosystems (Shukla et al., 2011). Conventionally grown foods have massive adverse health effects due to the presence of higher pesticide residue, heavy metals, more nitrate, antibiotic residue, hormones, and genetically modified organisms. Moreover, conventionally grown foods lack necessary nutrition and contain lesser amounts of protective antioxidants. With growing awareness, health benefits, food safety concerns and in the quest for healthy food, the demand for

organically grown foods has increased during the last decades. Even in developing countries like India, the demand for organically grown produce is increasing as people are more aware now about the safety and quality of food, and the organic process has an enormous influence on soil health as well the environment, which devoid of chemical pesticides. Organic cultivation has an immense prospect of income generation too (Bhardwaj and Dhiman, 2019). The soil in India is bestowed with various types of naturally available organic nutrient resources that aid in organic farming (Adolph and Butterworth, 2002; Reddy, 2010; Deshmukh and Babar, 2015).

### **Environmental Impact of Organic farming**

Organic farming plays a significant and protective role in environmental conservation. The effect of organic and conventional agriculture on the environment has been extensively studied over the years. It is believed that organic farming is less harmful to the environment as it does not allow synthetic pesticides, most of which are potentially harmful to water, soil, and local terrestrial and aquatic wildlife (Oquist et al., 2007). Moreover, due to practices of crop rotation organic farms are better than conventional farms to sustain biodiversity. Organic farming improves physio-biological properties of soil consisting of more organic matter, biomass, higher enzyme, better soil stability, enhanced water percolation, holding capacities, lesser water, and wind erosion compared to conventionally farming soil (Fließbach & Mäder, 2000). Organic farming uses lesser energy and produces less waste per unit area or per unit yield (Hansen et al., 2001). In addition, organically managed soils are of greater quality and water retention capacity, resulting in higher yield in organic farms even during the drought years (Pimentel et al., 2005).

**Objectives:** The present study aims to:

1. Analyze the structure of organic farming at world level.
2. Examine the status of organic farming in India.
3. Assess and evaluate the factors which may facilitate the adoption of organic farming in the country.

**Methodology and data sources:** The paper is based on the secondary data sources for the period covering nearly a decade. The information about organic farming and its practices made at both, India and other developed countries is collected from various published sources such as publications of FiBL Statistics - European and global organic farming statistics, APEDA (Agricultural processed food products & export development Authority), PGS-India Web Portal, NCOF annual reports, journals, periodicals, and newspapers, etc.

The present study analyses the area, production, nature of commodities produced and export of organic products. The compound average growth rate has been used to measure the growth performance for different time periods to study the magnitude and direction of performance of organic farming in India. Comparative analysis of India with other countries and at regional level has been presented in tabular form as well in form of graphs.

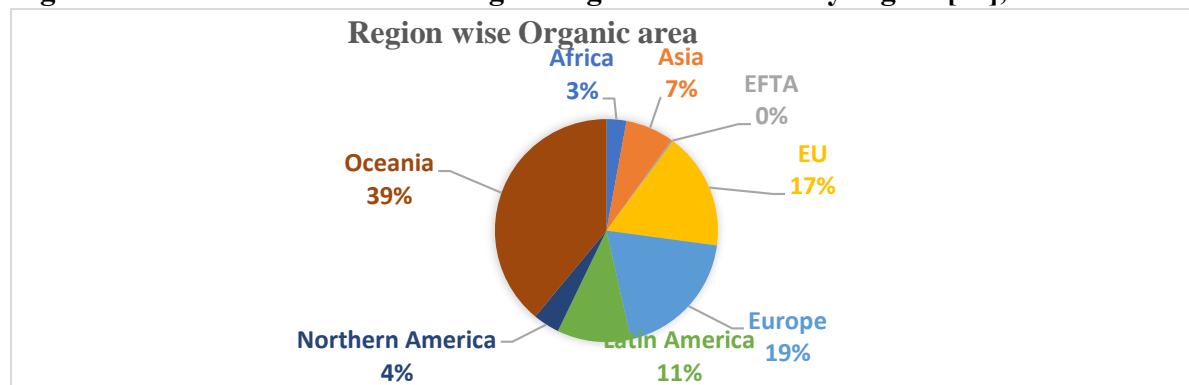
### **Empirical Analysis**

#### **World Scenario of Organic Agriculture:**

According to the latest FiBL survey (The World of Organic Agriculture 2023) from 191 countries on organic agriculture worldwide, organic farmland and organic retail sales recorded a continuous growth and reached

another all-time high. A bit more than 76.4 million hectares were organically managed at the end of 2021, representing a growth of 1.7 percent or 1.3 million hectares compared to 2020. Compared with 2001, when 15 million hectares were

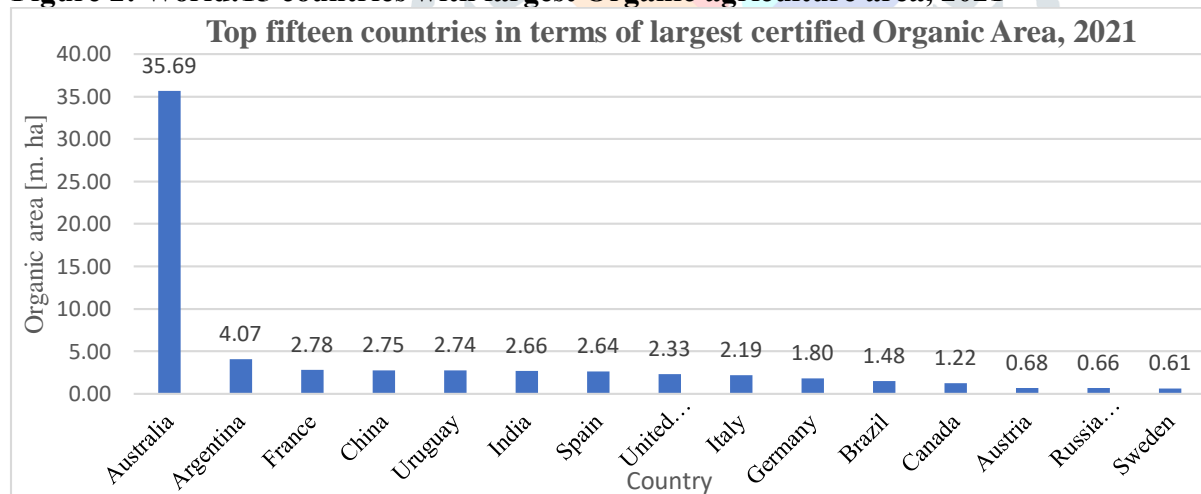
**Figure 1: World: Distribution of organic agricultural land by region [%], 2021**



Source: FiBL Survey 2023. <https://statistics.fibl.org/data.html>

organic, organic agricultural land has increased five-fold (2021). In 2021, over 76.4 million hectares of organic agricultural land, including in-conversion areas, were recorded. The regions with the largest organic agricultural land areas are Oceania (36.0 million hectares – almost half the world’s organic agricultural land, 47 percent) and Europe (17.8 million hectares, 23 percent). Latin America had 9.9 million hectares (13 percent), followed by Asia (6.5 million hectares, 8.5 percent), Northern America (3.5 million hectares, 4.6 percent) and Africa (2.7 million hectares, 3.5 percent).

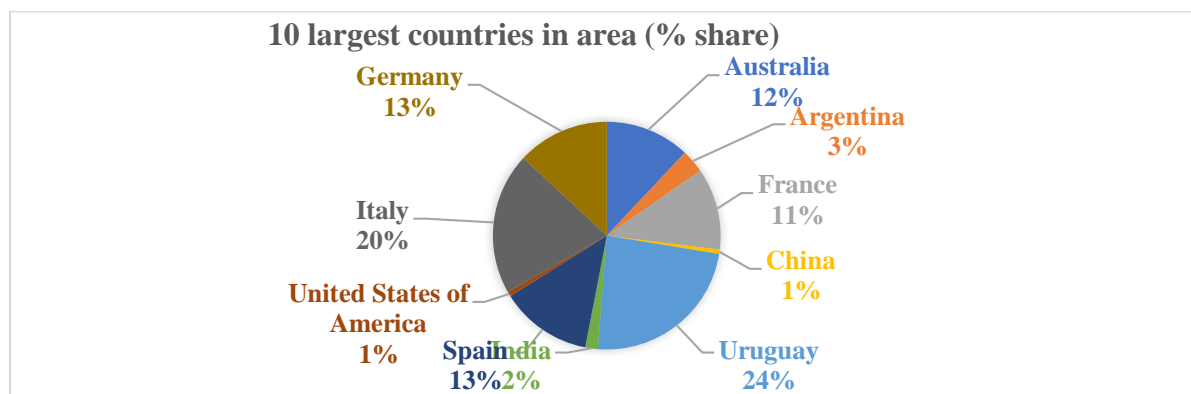
**Figure 2: World:15 countries with largest Organic agriculture area, 2021**



Source: FiBL Survey 2023. <https://statistics.fibl.org/data.html>

The countries with the largest areas of organic agricultural land recorded in the year 2021 are given in figure 2. Countries with the most organic agricultural land were Australia (35.7 million hectares), Argentina (4.1 million hectares) and France (2.8 million hectares). India acquired the sixth position with a total organic agriculture area of 2.66 million hectares. There were nearly 1.8 million producers, most of whom were in India. The leading countries by area in Asia were China (2.75 million hectares) and India (over 2.66 million hectares) (Fibl, 2023). Many countries reported a significant increase. In absolute terms, the biggest increases were in China,

**Figure 3: Largest 10 countries in Organic Area: 2021**



Source: FiBL Survey 2023. <https://statistics.fibl.org/data.html>

France, and Spain. In China, organic farmland increased by almost 320,000 hectares (+13.1 percent), in France by nearly 228,000 hectares (+8.9 percent) and in Spain by almost 198,000 hectares (+8.1 percent). However, some countries also reported decreases. The most notable decrease occurred in Argentina, which reported almost 0.38 million hectares less (mainly grazing areas).

There were almost 3.7 million organic producers worldwide in 2021. According to the FiBL survey 2023, more than 91 percent of the producers were in Asia, Africa, and Europe. The country with the most organic producers was India (1599010), followed by Uganda (404246) and Ethiopia (218175).

### Organic Farming in India

India holds a unique position among 191 countries practicing organic agriculture. About 2.66 million hectares of farmland was under organic cultivation in 2021. As per the available statistics, India ranked 6<sup>th</sup> in terms of World's Organic Agricultural land and 1<sup>st</sup> in terms of total number of producers as per 2021 data (Source: FIBL, 2023). But the area under organic agriculture as compared with total net sown area in the country is very low, suggesting that the country has a long journey ahead.

**Table 1: Organic Agriculture Statistics at a Glance in India (2021-22)**

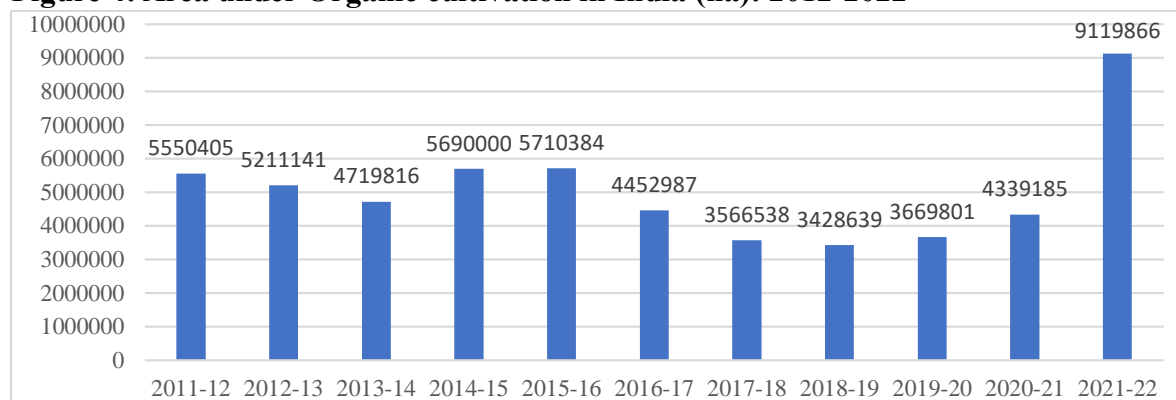
<b>Area</b>	Cultivated Area (Organic + In conversion)	4726714.74 Ha.
	Wild Harvest Collection Area	4393151.17 Ha.
	Total Area (Cultivated + Wild Harvest)	9119865.91 Ha.
<b>Production</b>	Farm Production	3410195.02 MT
	Wild Harvest Production	20540.63 MT
	Total Production	3430735.65 MT
<b>Total Farmers</b>	<b>Total Farmers</b>	2480859
<b>Organic Exports</b>	Total exports quantity	460320.40 MT
	Total Export Value (INR)	5249.32 Crore
	Total Export Value (US\$)	771.96 Million

Source: APEDA, <https://www.apeda.gov.in/apedawebsite/organic/data.htm>

The information on various parameters on organic farming in India is presented in table 1. As on 31st March 2022 total area under organic certification process (registered under National Programme for Organic Production) is 9119865.91 ha (2021-22). This includes 4726714.74 ha cultivable area and another 4393151.17 ha for wild harvest collection. The country produced around 3430735.65 MT (2021-22) of certified organic products which includes all varieties of food products namely Oil Seeds, fibre, Sugar cane, Cereals & Millets, Cotton, Pulses, Aromatic & Medicinal Plants, Tea, Coffee, Fruits, Spices, Dry Fruits, Vegetables, Processed foods etc. The production is not limited to the edible sector but also produces organic cotton fiber, functional food products etc.

The total volume of export during 2021-22 was 460320.40 MT. The organic food export realization was around INR 5249.32 Crore (771.96 million USD). Organic products are exported to USA, European Union, Canada, Great Britain, Switzerland, Turkey, Australia, Ecuador, Korea Republic, Vietnam, Japan, etc.

**Figure 4: Area under Organic cultivation in India (ha): 2012-2022**



Source: APEDA, <https://www.apeda.gov.in/apedawebsite/organic/data.htm>

Figure 4 further reports the area under organic farming in India since 2011-12. There has been significant increase in the area under certified organic farming during the last 10 years. With 5550405 ha in 2011-12, the area under certified organic farming grew by almost more than 1.5 times, during 10 years. However, the area under organic farming has recorded fluctuations during the overall period of study. Presently, 9119866 ha area is under certified organic cultivation and India ranks among top 10 countries at the world level in terms of total land under organic cultivation.

Among all the states, Chhattisgarh has covered largest area under organic certification followed by Madhya Pradesh, and Maharashtra during 2021-22. The top three states account for about

**Table 2: State wise CAGR of total area under organic certification process (cultivated + Wild Harvest) (in ha): 2016-17 to 2021-22**

State	2016-17	2021-22	CAGR
Andaman & Nicobar Islands	0	155	-
Andhra Pradesh	172783.03	49638.42	-0.22
Arunachal Pradesh	72311.27	12636.64	-0.29
Assam	23930.4	18102.94	-0.05
Bihar	679.2	30941.01	1.15
Chhattisgarh	179752.14	3008606.33	0.76
Goa	15762.43	18259.72	0.03
Gujarat	70495.05	602248.5	0.54
Haryana	5031.76	3198.95	-0.09
Himachal Pradesh	14376.72	203043.02	0.70
Jammu & Kashmir	181608.32	59825.58	-0.20
Jharkhand	36813.95	58970.14	0.10
Karnataka	81948.81	110703.45	0.06
Kerala	43701.88	43681.54	0.00
Ladakh	0	7817.85	-
Lakshadweep	895.52	895.51	0.00
Madhya Pradesh	2292697.39	2370593.41	0.01
Maharashtra	292391.78	1133668.57	0.31
Manipur	241.4	14628.42	1.27
Meghalaya	9629.6	27508.74	0.23
Mizoram	210	19038.89	1.46
Nagaland	4699.93	14269.27	0.25
New Delhi	9.23	12.95	0.07
Odisha	99736.17	184034.35	0.13
Pondicherry	2.84	21.51	0.50
Punjab	17648.53	24180.6	0.07
Rajasthan	539522.12	686420.61	0.05

Sikkim	75218.28	75475.28	0.00
Tamil Nadu	10775.69	53388.22	0.38
Telangana	9687.84	39200.47	0.32
Tripura	203.56	12081.63	1.26
Uttar Pradesh	101459.95	115590.47	0.03
Uttarakhand	93586.42	113747.54	0.04
West Bengal	5176.03	7280.37	0.07
<b>India</b>	<b>4452987.24</b>	<b>9119865.91</b>	<b>0.15</b>

Source: APEDA, <https://www.apeda.gov.in/apedawebsite/organic/data.htm>

half the area under organic cultivation. The top 10 states account for about 80 per cent of the total area under organic cultivation in 2021-22.

The country recorded 0.15 percent CAGR during last five years spanning from 2016-17. At the state level, Bihar, Manipur, Mizoram, and Tripura recorded a significant increase in the growth rates during this period. During 2016, Sikkim has achieved a remarkable distinction of converting its entire cultivable land (more than 75000 ha) under organic certification. The figures suggest that there has been growing awareness among the people towards organic farming in the country.

State wise organic farm production for the year 2021-22 is presented in table 3. Madhya Pradesh is the largest producer followed by Maharashtra, Rajasthan, Karnataka, and Odisha. In terms of commodities, Fiber crops are the single largest category followed by Oil Seeds, Sugar

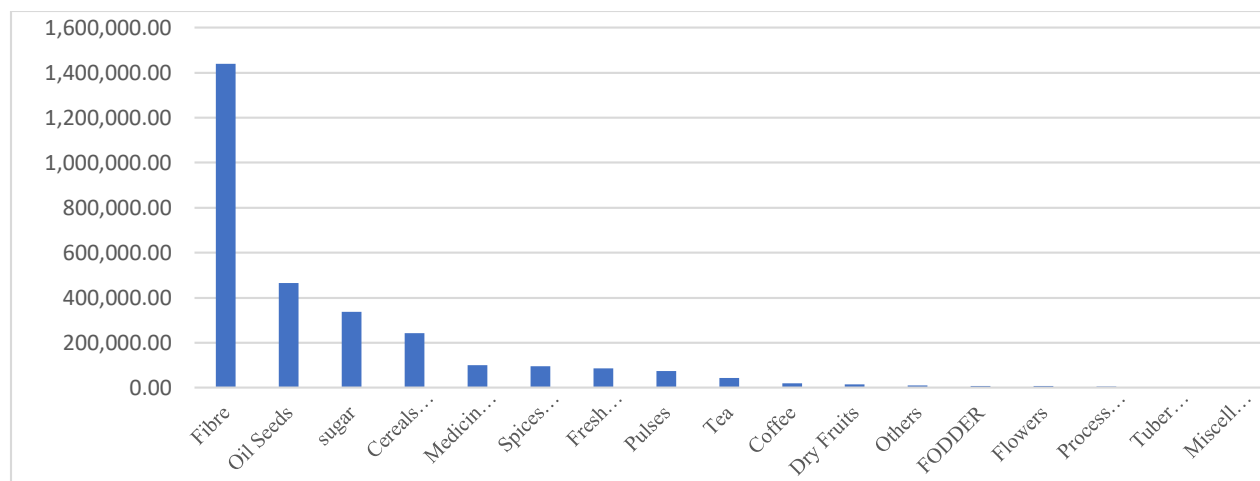
**Table 3 : State wise Organic Farm Production for the year 2021-22**

State Name	Organic Production (In MT)	Conversion Production(In MT)	Total Production (In MT)
Andhra Pradesh	18,751.55	907.71	19,659.26
Arunachal Pradesh	81.55	0	81.55
Assam	15,897.00	0	15,897.00
Bihar	12.11	0	12.11
Chhattisgarh	21,841.22	518.1	22,359.32
Goa	2,652.76	9.39	2,662.15
Gujarat	1,22,155.19	1,36,518.84	2,58,674.03
Haryana	4,547.48	0	4,547.48
Himachal Pradesh	3,486.48	0	3,486.48
Jammu & Kashmir	38,640.64	0	38,640.64
Karnataka	1,50,640.95	12.1	1,50,653.05
Kerala	31,965.48	0	31,965.48
Madhya Pradesh	12,62,966.52	1,47,927.97	14,10,894.49
Maharashtra	5,81,164.05	1,10,255.67	6,91,419.72
Manipur	121.67	0	121.67
Meghalaya	10,192.01	0	10,192.01
Nagaland	1,192.87	0	1,192.87
Odisha	1,35,999.21	47,604.82	1,83,604.02
Punjab	443.35	0	443.35
Rajasthan	3,31,900.65	15,060.67	3,46,961.32
Sikkim	20.17	0	20.17
Tamil Nadu	31,005.87	458.99	31,464.86
Telangana	3,871.64	0	3,871.64
Tripura	339.83	0	339.83
Uttar Pradesh	1,31,812.92	0	1,31,812.92
Uttarakhand	31,719.74	0	31,719.74
West Bengal	17,497.89	0	17,497.89
<b>India</b>	<b>2950920.79</b>	<b>459274.24</b>	<b>34,10,195.02</b>

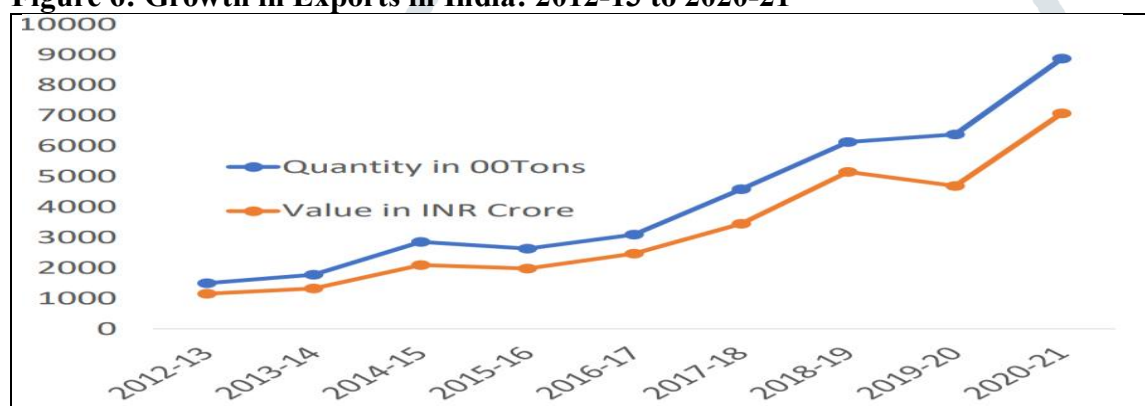
Source: APEDA, <https://www.apeda.gov.in/apedawebsite/organic/data.htm>

crops, Cereals and Millets, Medicinal/ Herbal and Aromatic plants, Spices & Condiments, Fresh Fruit Vegetable, Pulses, Tea &

Coffee. This shows a wide coverage of crops under organic farming in the country.

**Figure 5: Category Wise Production of Organic Commodities During Year 2021-22**

Source: APEDA, <https://www.apeda.gov.in/apedawebiste/organic/data.htm>

**Figure 6: Growth in Exports in India: 2012-13 to 2020-21**

Source: PGS-India Web Portal

The country has made significant contribution in the exports of organic commodities. In the fiscal year 2022, the export value of organic products was over 771.96 million U.S. dollars from India. This is a significant increase as compared to the export value 327 million U.S. dollars in 2015. At the state level, Madhya Pradesh, Maharashtra, Gujarat, Haryana, New Delhi and Karnataka have recorded the major share in export of organic commodities in 2021-22.

**Table 4: State Wise Export in India: 2021-22**

State Name	Exported Qty (In MT)	Total Value (In Crore)	Total Value (In USD Million)
Andhra Pradesh	2,720.27	76.76	11.29
Assam	5.87	0.29	0.04
Chhattisgarh	59.9	4.25	0.62
Daman & Diu	16,532.39	134.13	19.73
Goa	175.33	10.91	1.6
Gujarat	60,023.78	727.09	106.92
Haryana	29,093.98	270.66	39.8
Himachal Pradesh	11.56	4.13	0.61
Jammu & Kashmir	539.55	8.92	1.31
Karnataka	22,075.80	419.6	61.71
Kerala	7,337.49	308.59	45.38
Madhya Pradesh	1,76,385.91	1,292.55	190.08
Maharashtra	85,526.16	696.71	102.46
New Delhi	24,771.90	199	29.26
Odisha	15.75	0.36	0.05
Punjab	182.4	2.2	0.32
Rajasthan	9,142.59	109.17	16.05
Tamil Nadu	6,281.77	123.32	18.14
Telangana	7,310.18	209.16	30.76



Uttar Pradesh	6,968.17	333.4	49.03
Uttarakhand	285.43	11.58	1.7
West Bengal	4,874.22	306.57	45.08
<b>Total</b>	<b>460320.4</b>	<b>5249.32</b>	<b>771.96</b>

Source: APEDA, <https://www.apeda.gov.in/apedawebsite/organic/data.htm>

## Conclusion

The Green Revolution technology introduced in the year 1960 changed the whole scenario in the field of agriculture where the farmers were introduced to high yielding seeds and fertilizers to maintain food security. The increase in productivity ensured profit and food availability but gradually it turned the land barren due to the excessive usage of chemicals and fertilizers making the soil infertile and pesticides turning the product dangerous to consume. With the growing population and decreasing supply of resources, there is an urgent need to address food security and safety. Therefore, we need to increase the production but in a feasible and sustainable manner. Preserving a clean and green environment is very important and thus environmental sustainability needs to be maintained which can be achieved through organic farming. India has great potential and is bestowed with lot of natural resources to produce all varieties of organic products due to its various agro climatic conditions. There is a lot of promise for the organic producers to tap the market which is growing steadily in the domestic, global and export sector. The most important barrier considered in the development of organic agriculture in India is the lack of government policies for making a firm decision to promote organic agriculture.

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