

Organic Farming in India: An Analysis of Patterns in Area and Production

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Abstract

Organic farming, a sustainable agricultural method, has attracted attention of farmers, consumers, and government. Agriculture sector problems like stagnant yield, dependency on fertilizer and high water requirement associated with environmental problems like salinity, alkalinity, water logging, pollution of water bodies due to agricultural residues; and awareness on quality and nutrition related aspects of food have made people to look for alternative agricultural systems. Organic farming, an alternative method of cultivation aims at promoting environmentally friendly cultivation practices by adopting nature based inputs and avoiding all chemical and synthetic based inputs. Further, organic farming products require certification through legal standards and verification. In this background, the present paper attempts to examine patterns in area and production of organic farming in India and across the states. Secondary data published by APEDA on organic farming has been used in the study. The analysis revealed that organic farming has increased at global level both in terms of area and production. In India, in the beginning area under organic farming increased significantly, but in later years declined. Further, there is wide variation across states both in terms of area and production. The study showed that there is significant scope to increase area and production of organic farming across majority of Indian states.

1. Introduction

Organic farming has received importance from government and farmers as a way of sustainable agriculture in recent years worldwide and also in India. Necessity of producing more food compelled the Government of India to introduce Green Revolution in 1969, which promoted use of high yielding varieties (HYVs), chemical fertilizer and more water dependent crops. All these developments increased food production in India, but, also brought several problems like stagnation in growth of yield, besides environmental problems such as increased dependency on chemical fertilizers, high water dependency for crop production; and hence, soil quality degradation, salinization, pollution of water bodies, etc. For instance, according to Indian Council of Agricultural Research, as presented in State of Indian Agriculture 2017 (GoI 2018) 37 per cent of 328.73 million ha of land is degraded in India during 2010. The total degraded land is about 120.40 million ha, which includes water and wind erosion (94.87 million ha), water logging (0.91 million ha), soil alkalinity/sodicity (3.71 million ha), soil acidity (17.93 million ha), soil salinity (2.73 million ha) and mining and industrial wastes (0.26 million ha). These types of problems led for searching environmental friendly sustainable agricultural systems in 1980s addressing economic and environmental impacts of agricultural patterns in the long run. In this direction different approaches of sustainable agriculture systems like organic farming, low-input sustainable agriculture, integrated farming, etc. were developed, which focused on achieving sustainability in agriculture by changing cultivation practices and resource use. Among the various approaches of sustainable agriculture organic farming differs from others by advocating zero external inputs, specifically chemical or synthetic inputs. Initially organic farming was started in developed countries with

the intention of improving quality of food products and integrating environmental considerations into agricultural systems. Organic agriculture as a movement began in Europe in 1920s with the preaching of Rudolf Steiner in Austria, Lady Eve Balfour and Albert Howard in England.

1.1. Definition of Organic Farming

Organic farming has been defined in different ways keeping the objective of sustainability in agriculture along with maintaining and improving environmental interaction in agriculture. According to Lampkin (1994) organic farming is aimed at creating integrated, humane, environmentally and economically sustainable agricultural production systems, maximizing reliance on farm-derived renewable resources and managing ecological and biological processes and interactions, to provide acceptable levels of crop, livestock and human nutrition, protection from pests and diseases, and an appropriate return to the human and other resources employed. The word 'organic' does not refer to the types of inputs used, but to the farm as an organism, in which all parts like soil, minerals, organic matter, microorganisms, insects, plants, animals and humans interact to create a coherent whole system. Codex Alimentarius has defined organic farming as a system involving holistic production management system (for crops and livestock) emphasizing use of management practices in preference to the use of off-farm inputs; by using cultural, biological and mechanical methods in preference to synthetic materials.

Lampkin (1994) identifies characteristics of organic farming as (i) protecting the long term fertility of soils by maintaining organic matter levels, fostering soil biological activity and careful mechanical intervention; (ii) providing crop nutrients indirectly by using relatively insoluble nutrient sources which are made available to the plant by the action of soil microorganisms; (iii) 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 wastes; (iv) weed, disease and pest control relying primarily on crop rotations, natural predators, diversity, organic manuring, resistant varieties and limited (preferably minimal) thermal, biological and chemical intervention; (v) extensive management of livestock, paying full regard to their evolutionary adaptations, behavioural needs and animal welfare issues with respect to nutrition, housing health, breeding and rearing; and (vi) careful attention to the impact of farming system on wider environment and conservation of wildlife and natural habitats. Further, organic farming is different from other forms of sustainable agricultural methods as it involves legislated and voluntary standards and certification procedures. According to FAIR CERT, an organic certification agency, organic certification is a process by which the accredited certification body by way of a scope certificate assures that the production or processing system of the client has been methodically assessed and conforms to the specific standard requirements. These measures of developing and practicing of standards and certification procedures make organic farming products distinct from other agricultural products, and compel farmers to adhere to environmental requirements. Hence, organic farming is a benign practice of sustainable

agriculture integrating environmental and agricultural interactions, while protecting agro ecosystem and farmers by increasing their income.

The specific feature - certification with standards - of organic farming products has created a huge and increasing organic farming products market at both national and global level. According to FiBL and IFOAM the global organic market is around 97 billion US dollars or 90 billion euros in 2017. Among the countries, US has largest market with 40 billion euros followed by Germany (10 billion euros), France (7.9 billion euros) and China (7.6 billion euros). Organic farming products have occupied over 13 per cent of total food market in Denmark indicating importance assigned to organic farming. World over 2.9 million farmers have been involved in organic farming and India has the largest number of producers (835,200) followed by Uganda (210,352) and Mexico (210,000). Area under organic farming has increased at 20 per cent according to FiBL and IFOAM and the total area is 69.8 million ha. in 2017 increasing from 11.7 million ha. The largest area under organic farming is in Australia with 35.6 million ha. followed by Argentina with 3.4 million ha. It is to be noted that fourteen countries have 10 per cent or more farm land in organic farming. In countries like Liechtenstein, Samoa and Austria respectively 37.9, 37.6 and 24 per cent of agricultural land is organic.

1.2. Organic Farming in India

Considering the importance of organic farming in terms of economic and environmental benefits, governments at Centre and states in India have been promoting it to achieve sustainable agriculture. Government of India initiated various promotional activities by setting up National Institute of Organic Farming in Gaziabad in Uttar Pradesh in 2003, appointing accreditation and certifying agencies for organic farm products and developing certification standards for organic products, besides providing financial assistance for organic farming. Government of India has been implementing organic farming across the country through Paramparagat Krishi Vikas Yojana (PKVY) scheme since 2015 initiated under National Mission for Sustainable Agriculture (NMSA). This scheme provided assistance for forming clusters, mobilizing farmers, certifying and quality control, land conversion to organic farming, production units, green manuring, etc. Further, the Central government implemented Mission Organic Value Chain Development for North Eastern Region to promote organic farming in north eastern states. Apart from central government various state governments have encouraged organic farming. States like Maharashtra, Karnataka, Gujarat, Tamil Nadu and others have brought state policies covering organic farming as a measure to secure economic and environmental benefits along with achieving sustainable agriculture.

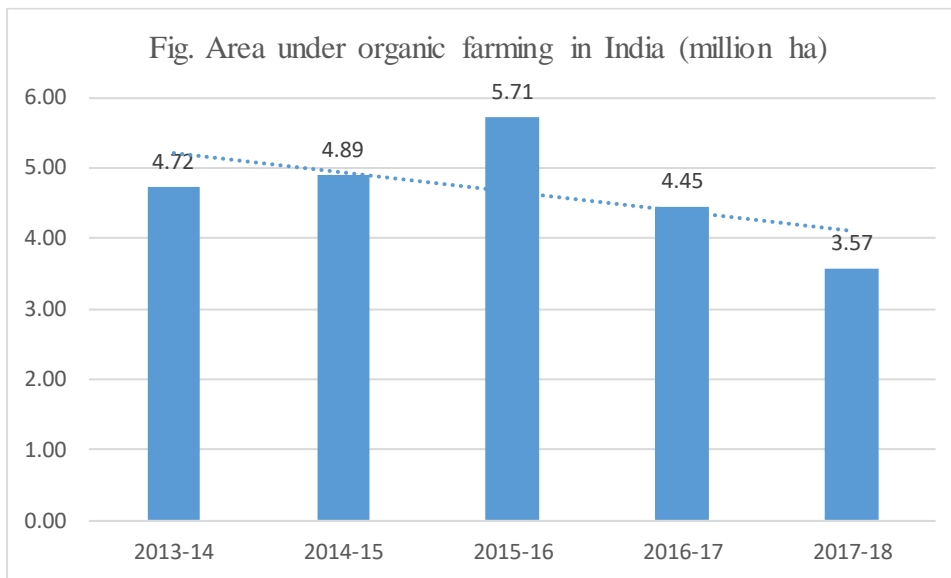
1.3. Objectives and Method of Analysis

In the above background this study attempts to examine pattern of area and production of organic farming in India and across the states. The study is based on secondary data, published by APEDA on organic farming in India. The analysis has been carried out across states and categories of products and used descriptive method of analysis applying statistical tools like ratio. This paper has been developed in four sections; where section I provides introduction and definition of organic farming, section II covers pattern of area under organic farming, section III illustrates production analysis of organic farming and section IV contains summary and conclusion.

Section II

2.1. Area under Organic Farming in India

Promotional efforts undertaken by both Central and State Governments in India have made the country to bring large area under organic farming, which was over 1.78 million ha. during 2017-18 as reported by Agricultural & Processed Food Products Export Development Agency (APEDA). This is the total cultivated area in organic farming and in conversion process (in conversion means the area before certification as organic i.e. area in process). Considering the wild harvest (FAIR CERT defines wild harvest as collection of medicinal and aromatic plants as well as sea and aquatic plant products (like seaweed) from their natural habitats; the main purpose of certifying the collection of wild plants/crops is to show that the collection does not endanger the ecosystem, and that the stability of the plant population or the ecosystem is not threatened) area under organic farming (1.78 million ha.) the total area is over 3.56 million ha. in the country. However, it is to be noted that total area under organic farming has been declining since 2016-17 as shown in Fig. 1. Area under organic farming was highest in 2015-16 at 5.71 million ha. which increased from 4.72 million ha. in 2013-14, but declined to 3.57 million ha. in 2017-18. This might indicate that farmers are shifting away from organic farming. This decline in area may not be a good one from the point of sustainable agriculture, and needs to be addressed immediately to bring back farmers to environmental friendly agriculture systems.



Let us look at the distribution of area under organic farming (cultivated and wild harvest together) across the states in India between 2013-14 and 2017-18, presented in Table 1. Madhya Pradesh stands first compared to all other states in terms of area under organic farming during all the years between 2013-14 and 2017-18, which increased from 17.58 lakh ha. to 22.92 lakh ha. during the above period, with an annual average growth rate of 6.21 per cent. During 2017-18, Rajasthan stands in second place in area under organic farming followed by Maharashtra. The average annual growth rate illustrates that area under organic farming has increased significantly in Arunachal Pradesh (48 per cent), followed by Telangana (41 per cent) and Andhra Pradesh (31 per cent). But, in states like Tamil Nadu, Jharkand, and Rajasthan area under organic farming has declined during the said period. Area under organic farming has fluctuated in almost all states indicating changes in adoption and practice of sustainable agricultural approaches like organic farming. These changes in land use for organic farming need to be studied for identifying the causal factors, which are making farmers to move away from environmentally friendly agricultural patterns.

Table 1: Area under Organic farming (cultivated and wild harvest both, area in ha.)

Sl. No.	States	2013-14	2014-15	2015-16	2016-17	2017-18	Avg. Annual Growth rate
1	Andhra Pradesh	14325.03	100623.81	93350.73	172783.03	172783.03	30.99
2	Arunachal Pradesh	71.49	3688.61	72485.26	72311.27	72311.27	48.18
3	Assam	2828.26	16258.02	28493.24	23930.40	23930.40	26.62
4	Chhattisgarh	30754.82	32405.10	180924.94	179752.14	179752.14	21.63
5	Gujarat	49363.89	49862.00	80421.40	70495.05	70495.05	6.23
6	Jammu & Kashmir	39035.38	50111.22	54515.01	181608.32	181608.32	25.04
7	Jharkhand	37447.30	71383.80	77048.73	36813.95	36813.95	-13.60
8	Karnataka	35450.22	92157.09	133647.27	81948.81	81948.81	7.37
9	Kerala	15162.33	23123.00	44788.50	43701.88	43701.88	20.08

10	Madhya Pradesh	1758226.30	1926369.01	2275567.10	2292697.39	2292697.39	6.21
11	Maharashtra	87941.66	217649.19	266299.24	292391.78	292391.78	21.70
12	Meghalaya	4673.13	4489.29	4609.42	9629.60	9629.60	12.66
13	Odisha	52787.35	91056.40	109224.05	99736.17	99736.17	12.29
14	Punjab	1534.39	19293.58	17577.20	17648.53	17648.53	20.67
15	Rajasthan	599173.07	483090.67	553447.70	539522.12	539522.12	-3.47
16	Sikkim	64296.17	76392.38	75851.21	75218.28	75218.28	3.57
17	Tamil Nadu	34212.96	12536.97	19529.79	10775.69	10775.69	-54.58
18	Telangana	0.00	2902.83	10355.59	9687.84	9687.84	41.27
19	Uttar Pradesh	112133.96	107529.11	106292.39	101459.95	101459.95	-2.55
20	Uttarakhand	79779.46	92480.23	99900.39	93586.42	93586.42	3.60
Total area (ha.)		4719816	4893851	5710384	4452987	3566538	

Source: APEDA

The total area under organic farming includes farm land and wild harvest area as observed above. Let us examine the organic farm land scenario across the states during 2017-18 (Table 2). Total area cultivated under organic agriculture in India is over 1.78 million ha. of which Madhya Pradesh has about 34.34 per cent area followed by Maharashtra with 13.19 per cent and Rajasthan with 11.67 per cent. Further, the table also presents information on percent of organic cultivated area to total cropped area (GoI, Land Use Statistics – 2014-15) of the states. It should be noted that although India has large number of farmers following organic farming practice, yet the land brought under organic farming is less than 1 per cent at all India level. Across all the states Sikkim has cultivated largest area i.e., nearly 56 per cent of total cropped area under organic farming, followed by Meghalaya (11.74 per cent), and Goa (7.53 per cent). Surprisingly, Madhya Pradesh which has 34 per cent of total organic area in the country reported 2.58 per cent of its total cropped area as organic. Important states like Maharashtra, Karnataka, Tamil Nadu, Andhra Pradesh, etc., have brought around 1 per cent of their total cropped area under organic farming. All this indicates that adequate measures need to be introduced to promote organic farming in a large scale to exploit opportunities at global organic market and at the same time to protect Indian agriculture from environmental damages.

Table 2: Area under organic and in-conversion organic across states

Sl. No.	State	Area (ha.)	Percent to total organic area	Per cent to total cropped area*
1	Madhya Pradesh	613395.46	34.34	2.58
2	Maharashtra	235690.55	13.19	1.00
3	Rajasthan	208571.13	11.67	0.86
4	Odisha	105616.24	5.91	2.04
5	Karnataka	86945.98	4.87	0.71
6	Gujarat	81268.94	4.55	0.64
7	Sikkim	76076.18	4.26	55.99
8	Uttar Pradesh	55197.53	3.09	0.21
9	Uttarakhand	42304.66	2.37	3.86
10	Meghalaya	40335.66	2.26	11.74
11	Kerala	31660.14	1.77	1.21

12	Andhra Pradesh	29748.65	1.67	0.39
13	Assam	28011.81	1.57	0.69
14	Jammu & Kashmir	22870.34	1.28	1.94
15	Chhattisgarh	20530.75	1.15	0.36
16	Jharkhand	17387.93	0.97	1.12
17	Tamil Nadu	17247.28	0.97	0.29
18	Himachal Pradesh	14153.47	0.79	1.54
19	Goa	11900.18	0.67	7.53
20	Telangana	8919.82	0.50	0.17
Total		1786494.06	100.00	0.90

Source: APEDA

* Land use statistics 2014-15, Government of India, website:

http://www.mospi.gov.in/sites/default/files/statistical_year_book_india_2015/Table-8.1_1.xlsx

Section III

3.1. Production of Organic Farming Products in India

Production of organic products, according to APEDA, was to the tune of 17.03 lakh tons (Table 3) in 2017-18, out of which 16.75 lakh ton is farm production (certified and in-conversion farms) and the remaining is wild harvest production. In India over 10.93 lakh farmers have been engaged in organic agriculture. This indicates that organic farm production is more in the country. It is to be observed that over 4.58 lakh tons of organic products were exported from the country which earned Rs. 3453.48 cores in 2017-18.

1	Total Certified production	1664550	97.74
2	Total In-conversion Produce	11011	0.65
3	Total Wild harvest production	27550	1.62
4	Total production (1+2+3)	1703111	100.00

Source: APEDA

Table 4 presents information on state wise production of organic products during the year 2017-18. Among all the states Madhya Pradesh, which has put large area under organic farming produced 575346 metric ton of organic products thus standing first (34 per cent) compared to other states in India. Maharashtra and Karnataka states are in second and third position producing respectively 22.5 and 9.25 per cent of total organic production in the country. Further, Sikkim with more than 55 per cent of its total cropped area has contributed 0.03 per cent of organic products, and organic production is less than 1 per cent of national production in 10 states as shown in the table. This illustrates the scope for increasing organic farming production in several states.

S No.	State	Production(MT)	Per cent to total production
1	Madhya Pradesh	575346.3	34.34
2	Maharashtra	377308.2	22.52
3	Karnataka	154922.9	9.25
4	Uttar Pradesh	117358.6	7.00
5	Rajasthan	94029.2	5.61
6	Gujarat	75304.6	4.49
7	Odisha	74642.1	4.45
8	Assam	52846.6	3.15
9	Jammu & Kashmir	47215.0	2.82
10	Uttarakhand	35644.3	2.13
11	Kerala	16134.3	0.96
12	Tamil Nadu	15893.3	0.95
13	West Bengal	10207.1	0.61
14	Andhra Pradesh	8516.7	0.51
15	Chhattisgarh	6265.4	0.37
16	Haryana	4245.5	0.25
17	Goa	2875.7	0.17
18	Himachal Pradesh	2620.6	0.16
19	Telangana	1381.5	0.08
20	Nagaland	1369.7	0.08
21	Meghalaya	612.8	0.04
22	Sikkim	435.1	0.03
Total		1675561	100

Source: APEDA

Information on area of wild collection and wild harvest produce of organic farming is presented in Table 5. As seen earlier wild collection of organic farming is procurement of aromatic and medicinal plants, and others from forests and sea without harming the ecosystem and endangering the flora and fauna. As seen in the table Madhya Pradesh has highest area under wild collection with 543486 ha. amounting to 30 per cent of the total area in the country and produces 4418 tons of wild harvest which constitutes 16 per cent of the national level collection of 27550 tons during 2017-18. Rajasthan stands second in terms of area followed by Chhattisgarh. Across the states wild harvest production is highest in Jharkhand (29 per cent), followed by Jammu and Kashmir (17.84 per cent) and Madhya Pradesh (16 per cent). Rajasthan with 13 per cent wild collection area has wild harvest of 6.7 per cent, but large number of states produce less than 1 per cent of wild harvest produce, which illustrates lot of variation across states. These states can initiate measures to augment wild harvest produce without disturbing ecological balance.

Sl. No.	State	Area (In Ha.)	Area (in per cent)	Production (in Tons)	Production (in per cent)
1	Madhya Pradesh	543486	30.532	4418	16.04
2	Rajasthan	233563	13.121	1858	6.74
3	Chhattisgarh	170934	9.603	2508	9.10
4	Jammu & Kashmir	158000	8.876	4916	17.84
5	Himachal Pradesh	156000	8.764	115	0.42
6	Andhra Pradesh	155000	8.708	84	0.31
7	Uttar Pradesh	137537	7.727	101	0.37
8	Maharashtra	68384	3.842	14	0.05
9	Uttara Khand	61830	3.474	25	0.09
10	Jharkhand	33800	1.899	8000	29.04
11	Karnataka	18569	1.043	648	2.35
12	Punjab	16616	0.933	130	0.47
13	Odisha	12294	0.691	2305	8.37
14	Gujarat	4132	0.232	0	0.00
15	Goa	3799	0.213	1930	7.01
16	Tamil Nadu	2823	0.159	490	1.78
17	Kerala	2500	0.140	0	0.00
18	Bihar	678	0.038	9	0.03
19	Assam	60	0.003	0	0.00
20	Haryana	40	0.002	0	0.00
Total		1780045	100	27550	100

Source: APEDA

Note: per cent to total

Farmers have been involved in producing different types of crops under organic farming, particularly considering suitability of crops to their lands and also market opportunities. In this regard Table 6 presents information on organic production (certified) by categories of crops in India, which indicates that among various organic farming products oil seeds production is highest (over 32 per cent) during 2017-18, followed by sugar crops, cereals and millets and fibre crops. Production of crops like medicinal plants, spices, plantation, fruits, vegetables, etc. is less as compared to above showing opportunity to increase production of these crops.

S. No.	Categories	Production (in Tons)	Per cent to total
1	Oil Seeds	539109.94	32.39
2	Sugar crop	318405.35	19.13
3	Cereals & Millets	284314.70	17.08
4	Fibre Crops	247437.93	14.87
5	Pulses	67050.79	4.03
6	Medicinal/Herbal/Aromatic Plants	46558.40	2.80
7	Spices and Condiments	45641.10	2.74
8	Plantation Crops (tea/coffee/coconut)	43707.20	2.63
9	Fruits	33448.64	2.01
10	Vegetables	20628.77	1.24
11	Dry fruits	8127.56	0.49
12	Ornamental Plants (Flowers)	6977.05	0.42
13	Fodder seeds/Crops	2868.00	0.17
14	Tuber crop	239.27	0.01
15	Other (Heena/Hibiscus/Reetha/stevia)	34.84	0.002
	Total Certified production	1664549.54	100.00

State and category-wise production of organic farming products has been presented in Table 7 (Source: APEDA), which reveals the advantages of few states in producing some organic farming products. Among all the states production of cereals and millets, fibre crops, medicinal plants, vegetables and oil seeds is highest in Madhya Pradesh compared to other states. Goa has been producing highest quantity of dry fruits, while Gujarat producing fruits. Karnataka is leading in production of sugar crops and ornamental crops; Kerala has been producing highest volume of plantation products. The scenario reveals that each state has an advantage in producing certain crops which are suitable for their agro-climatic conditions, informing to promote these crops in the concerned states.

S.No	State	Category and Production in Tons															
		Cereals & Millets	Dry fruits	Fiber Crops	Fodder seeds/crops	Fruits	Medicinal etc.	Vegetables	Oil seeds	Ornamental Plants)	Tuber crop	Plantation Crops	Pulses	Sugar Crops/	Spices and Condiments	Others	Total
1	Andhra Pradesh	2629.86	0	0	0	5497	39.48	0	0	0	72.4	126.07	0	70.39	0	8435.7	
2	Assam	37948.6	0	0	0	0	0.6	2.72	0	0	14865.3	20.5	0	8.85	0	52846.6	
3	Chhattisgarh	2013.25	0	0	0.59	0	2826.98	231.12	48.71	52.604	0	462.28	0	527.58	1.99	6165.1	
4	Goa	0	2875.7	0	0					0	0	0	0		0	2875.7	
5	Gujarat	825.3	0	55859	0	9464	1464.22	822.15	5315.73	53.2	38	0	415.19	0	750.77	0	75007.7
6	Haryana	1767.28	0	0	0	0	1379	0	0	0	0	15	0	1084.2	0	4245.5	
7	Himachal Pradesh	209.7	17.55	0	0	176.7	6.18	0	17.04	0	0	343.47	80.5	0	1769.47	0	2620.6
8	J&K	44989.1	1085.8	0	0	13.5	0	0	0	0	0	1125	0	1.57	0	47215.0	
9	Karnataka	2428.26	1297	578.86	0	7716	3154.98	229.7	579.75	6174.21	0	3044.83	311.91	120425	4373.07	2.298	150315.9
10	Kerala	0	480.86	0	0	76.6	54.67	1549.5	688.04	0	0	8585.12	0	214.988	4484.47	0	16134.3
11	Madhya Pradesh	53864.6	0	82738	1187.2	195.8	8684.63	7921.7	370955	646.66	0	35524	490	10359.63	0	572566.4	
12	Maharashtra	19681.7	1534.8	33448	0	1336	6380.06	2909	104492	34.89	11.57	57.42	13505	186525	5137.101	13.68	375067.0
13	Nagaland	0	0	0	0	330	0	579.85	0	0	0	0	0	459.8	0	1369.7	
14	Odisha	3096.15	783.34	58546	0	2282	0	178.3	5667.85	0	0	27.5	1287.7	0	2773.96	0	74642.1
15	Rajasthan	13712.5	0	15413	1641.6	51.62	4826.55	3625.8	44382.9	1.5	2.95	0	4936.1	81.5	5332.61	15.97	94024.5
16	Sikkim	45.63	0	0	0	0	0.24	23.067		0	0	45.7	0	0	320.485	0	435.1
17	Tamil Nadu	3.75	0	0	0	6291	1001.53	66.315	18.5	0	0	7326.68	0	0	309.652	0	15017.8
18	Telangana	129.1	0	856	0	0	3.5	51	0	0	0	0	316.53	0	2.75	0	1358.9
19	Uttar Pradesh	86017.4	0		0	0	15723.7	786.86	2210.42	1.69	0	0	5496.1	1640	5481.685	0.717	117358.6
20	Uttarakhand	13760.2	0	0	33.9	16.73	1006.5	1585	4720.42	12.3	186.8	13.725	3378.4	9029	1901.15	0.185	35644.3
21	West Bengal	1149.44	0	0	0	0	0	0	0	0	0	9055.55	0	0	0	0	10205.0
	Grand Total	284315	8127.5	247438	2867.8	33449	46558.4	20629	539110	6977.054	239.3	43707.2	67051	318405	45641.14	34.84	1664549

Organic farming products have been occupying the global market at a greater speed as observed earlier. In this regard Table 8 illustrates information on export of organic farming products from India during 2017-18. It can be seen that India has exported over 4.58 lakh metric tons of organic farming products, earning over 515 million US Dollars. Major share of export is to USA at 49 per cent followed by European Union (28 per cent) and Canada (18 per cent). Realizing the potential of organic farming in earning foreign exchange, central and state governments require to put additional efforts for increasing production and export of organic farming products.

Table 8: Organic farming products export by countries (2017-18)

Sl. No.	Country	Exported Quantity (in MT)	Per cent of exported quantity	Total Value (in Rs. Lakh)	Total Value (in USD) million
1	U.S.A.	223853.6	48.8	157173.5	234.6
2	European Union	129546.2	28.3	131852.8	196.8
3	Canada	82132.7	17.9	34710.3	51.8
4	Switzerland	8925.2	1.9	7485.6	11.2
5	Australia	2690.2	0.6	4154.5	6.2
6	Israel	1974.2	0.4	1418.3	2.1
7	Korea republic	1611.8	0.4	704.3	1.1
8	Vietnam	1446.9	0.3	730.6	1.1
9	New Zealand	1282.2	0.3	995.8	1.5
10	Japan	1073.3	0.2	1590.9	2.4
	Total	458339	100.0	345348	515.44

Source: APEDA

Section IV

Towards conclusion

Organic farming, a sustainable way of agricultural system has attracted the attention of governments, policy makers, farmers and consumers in recent years. Negative impacts of Green Revolution in terms of environmental damages and increased consciousness towards quality food products compelled promotion of organic farming. Organic farming is an agricultural system involving environmentally benign production management system using biological and mechanical methods instead of synthetic materials. In order to term a farm as organic it is essential to obtain certification based on legally fixed standards by an authorized organization. These standards induce farmers to adopt and follow sustainable agricultural practices while providing them economic margin on organic farming products over products from other systems of agriculture. As a result, organic farming is practiced in large number of countries. Promotional activities of Central and state governments in India brought large number of farmers to practice organic farming. During 2017-18 over 1.78 million ha. of land was brought under organic farming, where Madhya Pradesh had

allotted more area under organic farming compared to other states. In recent years, area under organic farming has declined in some states and also at all India level, which needs to be examined to understand causes. Further, measures required to be initiated to increase area under organic farming in several states as the share is very less. Production of organic farming was 17.03 lakh ton, in which certified and in-conversion organic products constituted 16.75lakh tons. Wide variation in organic production was observed across several states, which needs to be addressed by undertaking adequate measures to increase area and production. Along with organic farming products from cultivated farm area, organic farming products from wild harvest have attracted attention of market. However, share of wild harvest in total production of organic farming is less, which can be increased further in large number of states in terms of both area and production, particularly in forest and coastal zones of the country. Further, among the various crops covered in organic farming oil products constitute a major share, and there is a large scope to increase area under other crops which have high market share globally.

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