



## **Present Status and Prospects of Organic Production & Trend in India**

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### **ABSTRACT**

India is one of the country traditionally practicing organic crop productions since ancient times. Consequently, industrialization and commercialization of agriculture chemical based inputs were introduced for nutrient and pest management and enhancing productivity per unit area. In recent years, however limitations of agriculture based on chemical use and intensive irrigation have become apparent and there has been a resurgence of interest in organic agriculture. Currently, India ranks 9<sup>th</sup> in terms of World's Organic Agricultural land and 1<sup>st</sup> in terms of total number of producers. This research focuses on the present status and prospects of organic farming in India. To examine the trends in production and exports of organic products in India. The data was collected from the secondary sources i. international federation of organic farming movements (IFOAM), International Trade Centre (ITC), National programme of organic production (NPOP), APEDA (Agricultural processed food products & export development, Reports, Journals, Periodicals and newspapers etc. for the period 2002-03 to 2018-19. The present study analyses variability of Area, production and Export of organic products through coefficient of variations. Compound growth rate (CGR) was estimated using the exponential regression model to examine the trends in production and exports of organic products in India. The result was concluded that, the total area of both organic & wild collection in India has increased from 2.57 million hectares in 2005 to 3.43 million hectares in 2018-19. Among all the states, In percentage Madhya Pradesh (34.67 per cent) has covered largest area under organic certification followed by Maharashtra (14.43 per cent) and Rajasthan (10.06 per cent) respectively. The per cent change of India of organic product volume and value of export was 51.12 per cent to 47.96 per cent and 17.25 per cent to 39.38 per cent respectively during 2002-03 to 2018-19. India is exporting organic products to all the continents of the world of which the largest share goes to European Union (38.85 %) followed by USA (37.87 %). An attempt made to analyze the importance of Organic farming and exports of organically produced product in India. Organic product are exported to European Union, Canada, USA, Switzerland, Australia, New Zealand etc.

*Key words: Organic Farming, Production & Exports*

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### **INTRODUCTION**

Organic agriculture is a unique production management system which promotes and enhance agro-ecosystem health, including biodiversity, biological cycles and soil biological activity, and this is accomplished by using on farm agronomic, biological and mechanical methods in exclusion of all synthetic off-farm inputs [1]. According to the USDA "Organic farming is a system which avoids or largely excludes the use of synthetic inputs (Such as fertilizers, pesticides, hormones, feed additives etc) and to the maximum extent feasible rely upon crop rotations, crop residues, animal manures, off farm organic waste, mineral grade rock additives and biological system of nutrient mobilization and plant protection". As per the International Federation of Organic Agriculture Movement (IFOAM) "Organic agriculture is a production system that sustains the health of soils, ecosystem and people." According to the Agricultural and Processed Food Product Export Development Authority (APEDA) [9], the cultivated land under certification is around 3.56 M ha (2017-18), India produced 1.70MT certified organic produce during 2017-18. Madhya Pradesh has highest area under organic farming followed by Rajasthan, Maharashtra

and Uttar Pradesh. The State of Uttarakhand and Sikkim have declared their states as 'organic states'. India is home to 30 per cent of the total organic producers in the world, but accounts for just 2.59 per cent (1.5 million hectares) of the total organic cultivation area of 57.8 million hectares, according to the World of Organic Agriculture 2018 report [10].

The national program for organic production (NPOP) was implemented by agricultural and processed food products export development authority (APEDA) in 2001. The standards made by NPOP have been developed under guidelines of international organic production standards such as CODEX and International Federation of Organic Agricultural Movements (IFOAM) [1-3]. The NPOP standards for production and accreditation system have been recognized by European commission and Switzerland as equivalent to their country standards. Similarly, USDA has recognized NPOP conformity assessment procedures of accreditation equivalent to that of US. With these recognitions, Indian organic products duly certified by the accredited certification bodies of India are accepted by the importing countries. Europe and North America are the major global markets for organic food products [7, 8]. The demand for organic food products is growing in these regions due to high purchasing power and huge presence of health conscious consumers. Keeping in view of this study has been undertaken with following objectives.

1. To study the area, production of organic farming in India.
2. To examine the trends in production and exports of organic products in India.

## MATERIAL AND METHODS

This research is based on secondary data. Information about organic farming and its practices made both in India and abroad were collected from the published sources such as publications of European union, international federation of organic farming movements (IFOAM), International Trade Centre (ITC), National programme of organic production (NPOP), APEDA (Agricultural processed food products & export development, Reports, Journals, periodicals and newspapers etc.

The present study analyses variability of production and export of organic products through coefficient of variations. Compound growth rate (CGR) was estimated using the exponential regression model to examine the trends in production and exports of organic products in India.

Co-efficient of Variation:

$$C.V. (%) = \frac{\sigma}{\bar{x}} \times 100$$

Where, CV = Co-efficient of Variation

$\sigma$  = Standard Deviation

$\bar{x}$  = Arithmetic Mean

In the present study, compound growth rate of area, production, yield and export of organic products for each period were estimated to study the growth in area, production yield and export of organic products. Compound growth rate were estimated with the help of following exponential model.

$$Y = ab^{t+e}$$

Where,

Y = Dependent variable for which growth data is estimated.

a = Intercept.

b = Regression coefficient.

t = Time variable.

e = Error term.

The logarithmic form of the above equation estimated the compound growth rate

$$\log Y = \log a + t \log b$$

The compound growth rate (g) was estimated by using

$$g = [\text{Anti log of } \log(b) - 1] \times 100$$

## RESULT

In India major organic food were produced namely cereals like Rice, Wheat, spices like Cardamom, Black pepper, white pepper, ginger, turmeric, vanilla, mustard, tamarind, clove, cinnamon, nutmeg, mace chilly, pulses like Red Gram, Black Gram, fruits like Mango, Banana, Pineapple, Grape, Passion fruit, Orange, Cashew nut, Walnut and vegetables like Okra, Brinjal, Garlic, Onion, Tomato, Potato, Oilseeds like Sesame, castor, sunflower and other crop like Cotton, Tea, Coffee.

**Table: 1 Major Products Produced in India by Organic Farming**

S.N.	Type	Products
1	Cereals	Rice, Wheat
2	Spices	Cardamom, Black pepper, white pepper, ginger, turmeric, vanilla, mustard, tamarind, clove, cinnamon, nutmeg, mace chilly
3	Pulses	Red Gram, Black Gram
4	Fruits	Mango, Banana, Pineapple, Grape, Passion fruit, Orange, Cashew nut, Walnut
5	Vegetables	Okra, Brinjal, Garlic, Onion, Tomato, Potato
6	Oilseeds	Sesame, castor, sunflower
7	Others	Cotton, Tea, Coffee

**Growth of Organic Area in India:**

India has tremendous potential, largely untapped; for a major breakthrough in organic agriculture. Table-2 indicates that India's organic area in 2005 was 0.186 million hectares and wild collection area was 2.38 million hectares that has increased to 1.09 million hectares and 2.03 million hectares respectively in 2018-19. The total area of both organic & wild collection in India has increased from 2.57 million hectares in 2005 to 3.43 million hectares in 2018-19. The compound growth rate of India's organic area and wild collection area was 10.45% and 12.87 % respectively during 2005 to 2018. The compound growth rate of India's total organic area including wild collection was 12.52% and coefficient of variation was 25.89% during the same period. It is clear that the change in variation of wild collection area has increased more than the actual organic area in India.

**Table: 2. Growth of Organic Area in India.**

Year	Organic Area (A)	Annual growth rate	Wild Collection (B)	Annual Growth rate	Total Organic Area(A+B)	Annual Growth rate
2005	185937.00	--	2385963.00	--	2571900.00	--
2006	432259.00	132.48	2385963.00	0.00	2818222.00	9.58
2007	1030311.00	138.36	1769689.00	-25.83	2800000.00	-0.65
2008	1018000.00	-1.19	2781530.00	57.18	3799530.00	35.70
2009	1180000.00	15.91	3360000.00	20.80	4540000.00	19.49
2010	780000.00	-33.90	3650000.00	8.63	4430000.00	-2.42
2011	1084266.00	39.01	4477526.00	22.67	5561792.00	25.55
2012	500000.00	-53.89	4700000.00	4.97	5200000.00	-6.50
2013	510000.00	2.00	5180000.00	10.21	5690000.00	9.42
2014	720000.00	41.18	4173851.00	-19.42	4893851.00	-13.99
2015	1180000.00	63.89	4530384.00	8.54	5710384.00	16.68
2016	1490000.00	26.27	2962987.00	-34.60	4452987.00	-22.02
2017	1780000.00	19.46	1786538.00	-39.70	3566538.00	-19.91
2018	1097074.39	-38.37	2331564.38	30.51	3428638.77	-3.87
CV	<b>46.89</b>		<b>34.35</b>		<b>25.89</b>	
CGR	<b>10.45</b>		<b>12.87</b>		<b>12.52</b>	

**State-wise area and production under Organic farming during 2018-19:**

Table-3 indicates the state wise area production and productivity of organic products and its ranking in India in 2018-19. Madhya Pradesh has highest certified area under organic cultivation i.e. 3.80 million hectares followed by Maharashtra 1.59 million hectares and Rajasthan 1.10 million hectares in 2018-19. In terms of organic production, Maharashtra rank first 858734.61MT, followed by Madhya Pradesh 738877.75 MT, and Rajasthan 134611.23 MT. However in terms of yield Karnataka (6.42 MT/ha) rank first followed by Maharashtra (5.43 MT/ha, Bihar(4.71 MT/ha) etc. Among all the states, Maharashtra has highest production and yield of organic crops 2<sup>nd</sup> rank of Maharashtra in India during 2018-19. The certified organic product includes all varieties of food products namely Sugarcane, Cotton, Oil Seeds, Basmati rice, Pulses, Spices, Tea, Fruits, Dry fruits, Vegetables, Coffee and their value added products. The production is not limited to the edible sector but also produces organic cotton fiber, functional food products etc. Among all the states, In percentage Madhya Pradesh (34.67 per cent) has covered largest area under organic certification followed by Maharashtra (14.43 per cent) and Rajasthan(10.06 per cent) respectively.

Table 3. Selected State-wise Area and Production under Organic Farming during 2018-19.  
Area in hectares [Production in metric tons, Yield (MT/HA)]

S.N.	State	Area	Percent of share	Production	Percent of share	Yield	Rank base on Area
1	Madhya Pradesh	379996.68	34.67	738877.75	28.43	1.94	1
2	Maharashtra	158097.14	14.43	858734.61	33.04	5.43	2
3	Rajasthan	110240.21	10.06	134611.23	5.18	1.22	3
4	Odisha	73124.10	6.67	88948.06	3.42	1.22	5
5	Gujarat	60185.40	5.49	66106.20	2.54	1.10	6
6	Karnataka	57018.08	5.20	365848.35	14.08	6.42	7
7	Sikkim	73654.88	6.72	423.81	0.02	0.01	4
8	Uttar Pradesh	44802.36	4.09	142511.56	5.48	3.18	8
9	Meghalaya	1612.69	0.15	699.34	0.03	0.43	23
10	Kerala	19232.89	1.75	25434.58	0.979	1.32	10
11	Uttarakhand	20052.26	1.83	29601.81	1.139	1.48	9
12	Andhra Pradesh	13763.38	1.26	11400.33	0.439	0.83	13
13	Assam	15223.47	1.39	38456.72	1.480	2.53	12
14	Jammu & Kashmir	17558.76	1.60	33878.95	1.303	1.93	11
15	Jharkhand	2977.17	0.27	0.99	0.000	0.00	20
16	Tamil Nadu	4314.61	0.39	14803.02	0.570	3.43	19
17	Chhattisgarh	7356.54	0.67	14364.67	0.553	1.95	16
18	Goa	10696.37	0.98	2454.55	0.094	0.23	14
19	Himachal Pradesh	8527.13	0.7781	6958.21	0.268	0.82	15
20	Arunachal Pradesh	627.15	0.0572	590.55	0.023	0.94	24
21	Punjab	317.75	0.0290	744.27	0.029	2.34	25
22	Telangana	6322.92	0.5769	2108.69	0.081	0.33	17
23	Nagaland	2751.17	0.2510	189.53	0.007	0.07	21
26	West Bengal	4984.20	0.4548	19791.66	0.761	3.97	18
27	Haryana	2291.85	0.2091	1215.13	0.047	0.53	22
29	Bihar	1.20	0.0001	5.66	0.000	4.71	28
30	Tripura	203.56	0.0186	326.02	0.013	1.60	26
32	Pondicherry	2.84	0.0003	2.50	0.000	0.88	27
	Total	<b>1095936.76</b>	<b>100.00</b>	<b>2599088.74</b>	<b>100.000</b>	<b>2.37</b>	-

**Organic Food Export from India:**

The increasing demand for organic produce has created new export opportunities and many developing countries have started to tap lucrative export markets for organic produce. Indian organic farming industry is almost entirely export oriented, running as contract farming under financial agreement with contracting firms. Moreover majority of farmers in India are opting this practice motivated by attractive markets and price margins [4-7]. The increasing demand for organic food products in the developed countries and the extensive support by the Indian government coupled with its focus on agri-exports are the drivers for the Indian organic food industry. Organic food exports from India are increasing with more farmers shifting to organic farming. With the domestic consumption being low, the prime market for Indian organic food industry lies in the US and Europe. India has now become a leading supplier of organic herbs, organic spices, organic basmati rice, etc.

Table- 4 reveals that an export of organic products from India in 2002-03 was 4161MT that went up to 614089.61 MT in 2018-19. Similarly the export value of organic products was Rs.619.6 crores in 2002-03 which has increased to Rs. 5150.90crores in 2018-19. The per cent change of Indiaof organic product volume and value of export was 51.12 per cent to 47.96 per cent and 17.25 per cent to 39.38 per cent respectively during 2002-03 to 2018-19. India exported 135 products last year (2018-19). Large export earnings from organic produce are increasing over the years. European Union is the major importer of organic produce in quantity as well as in value terms. The total volume of export during 2018-19 was 614089.61 MT.

Table No. 4: Export of Organic products from India.

S.N.	Year	Export Volume (Metric Tons)	Per cent Change	Export value (Rs. Crores)	Per cent Change
1	2002-03	4161.00	-	619.63	-
2	2003-04	6288.00	51.12	726.60	17.25
3	2004-05	8344.00	32.70	953.30	31.22
4	2005-06	7953.00	-4.69	1281.60	34.44
5	2006-07	NA	-	NA	-
6	2007-08	37533.00	-	498.00	-61.14
7	2008-09	44476.00	18.50	537.00	7.83
8	2009-10	58408.00	31.32	526.00	-2.05
9	2010-11	69837.00	19.57	699.00	32.89
10	2011-12	147800.00	111.64	1866.33	167.00
11	2012-13	165262.06	11.81	2106.81	12.89
12	2013-14	194088.00	17.44	2563.08	21.66
13	2014-15	285663.00	47.18	2099.00	-18.11
14	2015-16	263687.01	-7.69	1975.87	-5.87
15	2016-17	309766.94	17.48	2477.96	25.41
16	2017-18	458339.00	47.96	3454.00	39.38
17	2018-19	614089.61	33.98	5150.90	49.13
	<b>CV</b>	<b>115.32</b>		<b>89.88</b>	

**Country-wise Export of Organic Product:**

Table 5 indicates the country wise export of organic product from India. The organic food export realization was around 5038.18 crores. Organic products are exported to European Union, USA, Canada, Switzerland, Australia, New Zealand, Pakistan etc. Table 5 reveals that total export of organic products from India in 2018-19 was 601618.89 MT and total export value Rs. 5038.18 crores. India is exporting organic products to all the continents of the world of which the largest share goes to European Union (38.85 %) followed by USA (37.87 %). An attempt made to analyze the importance of Organic farming and exports of organically produced product in India.

Table : 5 Country wise Export of Organic products under NPOP.

Country	2015-16		2016-17		2017-18		2018-19	
	Qty (MT)	Value (Crores)	Qty (MT)	Value (Crores)	Qty (MT)	Value (Crores)	Qty (MT)	Value (Crores)
Canada	42938 16.34	197.41 10.06	42739 14.07	193.1 7.88	92133 20.10	347.1 10.08	101942.91 16.94	466.5 9.26
European Union	102071 38.85	880.25 44.87	124398 40.95	1143.15 46.63	129546 28.26	1398.53 40.61	155255.11 25.81	1517.2 30.11
New Zealand	1520 0.58	8.34 0.43	1783 0.59	9.85 0.40	1282 0.28	9.96 0.29	1977.9 0.33	14.46 0.29
Switzerland	9072 3.45	53.52 2.73	9427 3.10	66.46 2.71	8925 1.95	74.86 2.17	6199.1 1.03	67.24 1.33
USA	99492 37.87	784.63 39.99	116595 38.38	994.9 40.59	223854 48.83	1571.74 45.64	334113.11 55.54	2922 58.00
Pakistan	5898 2.24	1.29 0.07	7111 2.34	1.49 0.06	0 0.00	0 0.00	0 0.00	0 0.00
Australia	1735 0.66	36.53 1.86	1732 0.57	42.42 1.73	2690 0.59	41.56 1.21	2130.76 0.35	50.78 1.01
<b>Total</b>	<b>262726</b> 100.00	<b>1961.97</b> 100.00	<b>303785</b> 100.00	<b>2451.37</b> 100.00	<b>458430</b> 100.00	<b>3443.75</b> 100.00	<b>601618.89</b> 100.00	<b>5038.18</b> 100.00

Source: Data provided by National Programme for Organic Production (NPOP)

Table 6: Commodity wise Export of Organic produced from India in year 2018-19.

S.N.	Item/Commodity	Quantity exported (MT)	Percentage Share	Value of export in US\$ million	Percentage Share
1	Oil cake/ meal	273786.22	44.58	176.91	23.36
2	Oil seeds	170745.13	27.80	124.25	16.40
3	Processed food	2429.88	0.40	122.76	16.21
4	Cereals and Millets	67847.45	11.05	63.51	8.38
5	Plantation crops	8969.002	1.46	60.08	7.93
6	Spices and Condiments	6783.68	1.10	43.17	5.70
7	Dry Fruits	3804.77	0.62	40.41	5.34
8	Sugar/ sugar crop products	41125.94	6.70	29.82	3.94
9	Medicinal/ Herbal/Aromatic	2759.14	0.45	20.25	2.67
10	Fruits/ juices/pulps and concentrates	12195.92	1.99	19.542	2.58
11	Essential oils/ oils/ other oils	5619.07	0.92	17.14	2.26
12	Vegetables and Products	2251.03	0.37	12.03	1.59
13	Others	8249.00	1.34	11.23	1.48
14	Pulses	5158.22	0.84	8.65	1.14
15	Flowers	551.45	0.09	5.40	0.71
16	Fodder crops	1569.65	0.26	1.31	0.17
17	Tuber crops	204.6	0.03	0.53	0.07
18	Seeds	24.43	0.0040	0.24	0.03
19	Aromatic oils	2.015	0.0003	0.14	0.02
20	Ornamental plant/ products	7.19	0.0012	0.1	0.01
21	Miscellaneous	5.687	0.0009	0.012	0.0016
22	Honey	0.12	0.00	0.0008	0.0001
	<b>Total</b>	<b>614089.61</b>	<b>100</b>	<b>757.4967</b>	<b>100</b>

Source: Data provided by National Programme for Organic Production (NPOP)

India is one of the most important producers of organic food. Table 6 reveals the 22 categories of organic products out of 135 organic products have been exported in various countries. The share of export volume of oil crops from India was highest (73.30 %), followed by Cereals & millets (11.0 %) during the period of 2018-19.

## DISCUSSION

### Importance of Organic Agriculture in India:

Organic farming is gaining gradual momentum across the world. Growing awareness of health and environmental issues in agriculture has demanded production of organic food which is emerging as an attractive source of rural income generation. Organic agriculture has made a credible performance during the past ten years. Both, the 11th plan document on organic sector and the report of the National Commission on farmers have recommended it as a tool for second green revolution in the country in particular for agro-eco zones comprising rain fed areas, hilly areas and areas experiencing ecological backlash of green revolution. Organic agriculture can become low cost, sustainable option of farming in the country, particularly by the small farmers in rain fed areas and helps to improve their food and income security. It helps to produce and supply adequate safe and nutritious food to the producers and consumers of the nation. Environmental benefits, health aspects and farmers empowerment are other important factors influencing farmers to shift to organic agriculture. Some of the important benefits of organic farming are Organic fertilizers are completely safe and does not produces harmful chemical compounds.

## CONCLUSION

Agriculture is the base of economic policies and is the ultimate driver of national economic growth and poverty alleviation in many developing countries including India. It has vast opportunity for rural employment and livelihood security. Organic agriculture is gaining momentum as an alternative method to the modern system. Many countries have been able to convert significant per cent of their cultivated areas into organic farming. Indian agriculture evolved principally as an ecologically sustainable approach using natural inputs for enhancing crop yield. The demand for organic products is growing fast in countries like USA & European Union. India has the potential to become a major organic M. S. Deshmukh, Nitin Babar- Present Status and Prospects of Organic

Farming in India producing country given the international demand for our farm products, different agro-climatic regions for the cultivation of a number of crops.

The result was concluded that, the total area of both organic & wild collection in India has increased from 2.57 million hectares in 2005 to 3.43 million hectares in 2018-19.

Among all the states, In percentage Madhya Pradesh (34.67 per cent) has covered largest area under organic certification followed by Maharashtra (14.43 per cent) and Rajasthan(10.06 per cent) respectively. The per cent change of India of organic product volume and value of export was 51.12 per cent to 47.96 per cent and 17.25 per cent to 39.38 per cent respectively during 2002-03 to 2018-19. India is exporting organic products to all the continents of the world of which the largest share goes to European Union(38.85 %) followed by USA(37.87). An attempt made to analyze the importance of Organic farming and exports of organically produced product in India.

### **POLICY IMPLICATION**

Strong national organic policy is main need of the current position which will give an important place to organic farming addressing the current issues and obstacles. Government needs to do a meticulous and in- depth evaluation of the general picture of the organic sector policies, programme. An action plan for the organic sector should be developed based on the analysis of the state of the sector, a need evaluation and proper sequencing of the actions.

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