

Present Status and Prospects of Organic Farming in India

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Abstract:

This paper focuses on the present status and prospects of organic farming in India. India is endowed with various types of naturally available organic form of nutrients in different parts of the country and it will help for organic cultivation of crops substantially. India's total area under organic certification is 4.72 million hectare in 2013-14 and its global rank is 10th. The CGR of cultivation of organic area of India is 11.52% of which wild collection is 12.57% and remaining area is 7.45% during 2005-2013. The co-efficient of variation is approx 0.5% during same period. Compound growth rate of export quantity of organic products of India is 51.50% and export value is 11.75% during 2002-03 to 2013-14. Among all the states in India, Uttar Pradesh has highest area under organic farming followed by Himachal Pradesh, Madhya Pradesh and Maharashtra in 2011-12. The prices of organic products are higher than the non-organic products in domestic markets. India exports around 135 organic products of which the share of oil crops in total organic export quantity was (26.74%) followed by cotton (24.48%) basmati rice (11.81%) in 2013-14. India is exporting organic products to all the continents of the world of which the largest share goes to EU (44.12%), followed by USA (19.2%). An attempt is made to analyze the importance of organic

farming, principle of organic farming, Marketing and export of organically produced products in India.

Key words: Organic Farming, Production, Marketing, Exports

I. Introduction

Indian economy is one of the fastest growing economies among the developing countries in the world. Agricultural is the major source of livelihoods, particularly in the rural areas, where 55% of people have been living. Agriculture still contributes significantly to export earnings and is an important source of raw materials as well as demand for many industries. The agriculture sector in India has made enormous stride in the past 50 years. The Green Revolution has been the cornerstone of India's agricultural achievement, transforming country from the stage of food deficiency to self-sufficiency by use of high yielding varieties and higher level of inputs of fertilizers and pesticides. During the post Green Revolution period, the production of food grains has increased four-folds, from 50.82 million tons in 1950-51 to 265.57 million tons on 2013-14. But indiscriminate and excessive use of chemicals during this period has put forth a question mark on sustainability of agriculture in the long run calling attention for sustainable agricultural production. To fulfill & address social, ecological and economical issues together organic farming plays a vital role.

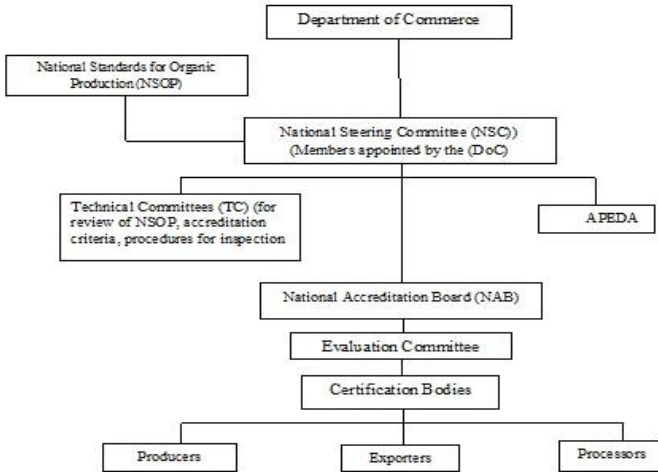
Organic agriculture in India has its roots in traditional agricultural practices that evolved in countless villages and farming communities over the millennium. Organic agricultural is a holistic production and enhances ago-ecosystem health, including biodiversity, biological cycles, and soil biological activity. It emphasizes the use of management practices in preference to the use of off-farm inputs, taking into account that regional conditions require locally adapted system. India is endowed with various types of naturally available organic form

of nutrients in different parts of the country and it will help for organic cultivation of crops substantially. 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). 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 recognizes, Indian organic products duly certified by the accredited certification bodies of Indian are accepted by the importing countries. Europe and North America are the major global markets for organic food products. The demand for organic food products is growing in these regions due to high purchasing power and huge presence of health conscious consumers. The organic food consumption in India is very low as compared to western markets. Organic food market in India is highly unorganized and fragmented, which offers immense growth opportunities for domestic as well as international players. India mainly exports organic processed food products, organic rice, beverages and other cereals and millets to US, Canada, Europe, and South East Asian countries. India is 10th leading country in the world in terms of organic certification. There are 6.5 lakh producers and 362 exporters who are associated with organic production and exports in India.

Organizational Structure:

Chart: 1

Operational Structure of National Programme for Organic Production (Revised 2014):



The organizational structures supporting smallholder organic agriculture in India fall into four forms: (1) farmers organized by a company, (2) farmers operating under NGO initiatives, (3) farmers organized or facilitated by government, and (4) farmers forming their own organizations (cooperatives, associations, self-help groups, etc). However, in many instances, these basic organizational forms coexist with one another, giving rise to more complex structures.

II. Materials And Methods

This paper is based on secondary data and field observation of the researcher. 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

Authority), International competence centre for organic agricultural (ICCOA), National centre of organic farming (NCOF), 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:

$$CV = \frac{\sigma}{\bar{X}} \times 100$$

Where, CV = Co-efficient of Variation
 σ = 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.

$$Y = a b^t e$$

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

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

III. Results and Discussions

Organic Farming Way of Sustainability:

Organic farming was practiced in India since thousands of years. The great Indian civilization thrived on organic farming and was one of the most prosperous countries in the world. In traditional India, the entire agriculture was practiced using organic techniques, where the fertilizers, pesticides, etc., were obtained from plant and animal products. Organic agriculture in India was initiated in 1900 by Albert Howard, a British agronomist in North India. The traditional farming system was characterized mainly by small and marginal farmers producing food and basic animal products for their families and local village communities. After this qualification was drastically changed during the green revolution period but organic farming is seen today as the best option to attain sustainability in the crop production. Therefore organic farming appears to be one of the options for sustainability.

Principles of Organic Farming:

Organic agriculture is a unique production management system which largely excludes the use of synthetic inputs (such as fertilizers, pesticides, hormones, food additives etc.) & 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. However, organic is not only about replacing inputs, which is the starting point of the process rather it is based on the four principles of organic farming as advocated by International Federation of Agriculture Movement (IFOAM).

- It should be based on living ecological system and cycles, work with them, emulate them and help sustain them.

- It should build on relationships that ensure fairness with regard to the common environment and life opportunities.
- It should be managed in a precautionary and responsible manner to protect the health and well being of current and future generations and environment.
- Organic agriculture should sustain and enhance the health of soil, plant, animal, human and planet as one and indivisible.

Growth of Organic Area in India:

India has tremendous potential, largely untapped; for a major breakthrough in organic agriculture. Table-1 indicates that India’s organic area in 2005 was 0.186 million hectares and wild collection area was 2.386 million hectares that has increased to 0.51 million hectares and 5.18 million hectares respectively in 2013. Total area of both organic & wild collection in India has increased from 2.57 million hectares in 2005 to 5.69 million hectares in 2013. The compound growth rate of India’s organic area and wild collection area was 7.45% and 12.87 % respectively during 2005 to 2013. The compound growth rate of India’s total organic area including wild collection was 11.52% and coefficient of variation was 0.53% during the same period. It is clear that the growth rate of wild collection area has increased more than the actual organic area in India.

Table: 1 Growth of Organic Area in India:

Area in Hectares

Year	Organic Area (A)	Annual growth rate	Wild collection (B)	Annual growth rate	Total Organic Area (A+B)	Annual growth rate
2005	185937	----	2385963	-----	2571900	----
2006	432259	132.48	2385963	0.00	2818222	9.58
2007	1030311	138.36	1769689	-25.83	2800000	-0.65
2008	1018000	-1.19	2781530	57.18	3799530	35.70
2009	1180000	15.91	3360000	20.80	4540000	19.49
2010	780000	-33.90	3650000	8.63	4430000	-2.42

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2011	1084266	39.01	4477526	22.67	5561792	25.55
2012	500000	-53.89	4700000	4.97	5200000	-6.50
2013	510000	2.00	5180000	10.21	5690000	9.42
CGR	7.45	----	12.87	----	11.52	-----
CV	0.59	-----	0.55	-----	0.53	

Source FIBL-AMI Organic data network survey 2000-2015

Table-2 indicates the state wise area production and productivity of organic products and its ranking in India in 2011-12. Uttar Pradesh has highest certified area under organic cultivation i.e. 2.59 million hectares followed by Himachal Pradesh 0.93 million hectares, Madhya Pradesh 0.43 million hectares and Maharashtra 0.25 million hectares in 2011-12. In terms of organic production, Orissa rank first 29016450 MT, followed by Maharashtra 211740.8MT, Rajasthan (7.6%) and Rajasthan 138635.8 MT. However in terms of yield Orissa rank first followed by Meghalaya Maharashtra etc. Among all the states, Orissa has highest production and yield of organic crops followed by Maharashtra in India during 2011-12. 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, Madhya Pradesh has covered largest area under organic certification followed by Himachal Pradesh and Rajasthan respectively.

Table: 2 Selected State-wise Area and Production under Organic Farming during 2011-12:

Area in hectares
Production in metric tons
Yield (MT/HA)

Sr no	State	Area	Percent of share	production	Percent of share	Yield	Rank base on area
1	Andhra Pradesh	47456.77	0.86	3658.43	0.012	0.08	10
2	Chhattisgarh	299970.6	5.40	3153.66	0.011	0.01	5
3	Goa	153684.6	2.77	156.65	0.001	0.00	8

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4	Gujarat	41978.94	0.76	9859.58	0.033	0.23	12
5	Himachal Pradesh	933798.2	16.82	472.43	0.002	0.00	2
6	Kerala	15790.49	0.28	12277.72	0.042	0.78	15
7	Madhya Pradesh	432129.5	7.79	83404.75	0.282	0.19	3
8	Maharashtra	245339.3	4.42	211740.8	0.716	0.86	6
9	Meghalaya	288.23	0.01	9654.38	0.033	33.50	16
10	Orissa	43868.18	0.79	29016450	98.082	661.45	11
11	Rajasthan	222319.1	4.01	138635.8	0.469	0.62	7
12	Sikkim	25716.55	0.46	4121.78	0.014	0.16	14
13	Tamil Nadu	38554.33	0.69	19797.66	0.067	0.51	13
14	Uttar Pradesh	2593821	46.73	27526.75	0.093	0.01	1
15	Uttarakhand	122880.6	2.21	22439.79	0.076	0.18	9
16	Others	332809.03	6.00	20492.55	0.069	0.06	8
17	Total	5550405	100.00	29583843	100.00	5.33	-

Source-National Project on Organic Farming Annual Report 2012-2013

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.

Domestic Market:

Basically organic farming in India is export intensive hence very less products are circulated in the domestic market. The conventional products are available relatively at a cheaper rate than the organic products so domestic market becomes unstable. Indian consumers are divided into three major classes depending upon their interest in the organic product 1st upper class consumer 2nd upper- middle class and 3rd lower –middle class. In urban centers, diverse range of consumers is now showing more interest in reconnecting with the sources of their food. This phenomenon finds its expression in the increasing popularity of farmers markets and organic bazaars, community-supported agriculture schemes, consumer cooperatives and terrace gardening groups etc.

Table -3 Prices of Selected Commodities in Western Maharashtra:

Sr no	Crops	Organic Products (price Rs, per Kg)	Non-Organic Products (price Rs, per Kg)	Difference (price Rs, per Kg)
1	Wheat	80-120	25-80	55- 40
2	Rice	75-100	30-80	45-20
3	Grapes	80-130	30-70	50-60
4	Pomegranate	90-180	50-110	40-70
5	Banana	50-80	20 -40	30-40

Source:-Authors Market Observations - 2015

Table-3 reveals that the prices of organic products are much higher than the conventional products. Hence it is beneficial to the farmers to switch towards organic cultivation. The author has observed the above prices of Wheat, Rice, Grapes, Pomegranates and Banana at local markets in western Maharashtra.

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 (Sharma, 2001). 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 194088 MT in 2013-14. Similarly the export value of organic products was Rs.619.6 crores in 2002-03 which has increased to Rs. 2566 crores in 2013-14. The compound growth rate of India's organic products volume and value of export was 51% and 11% respectively during 2002-03 to 2013-14. India exported 135 products last year (2013-14) with the total volume of 194088 MT including 16322 MT organic textiles.

Table: 4 Export of Organic Products from India:

Export volume in metric tons
Export value in Rs. Crores

Year	Export volume	Percent Change	Export value	Percent Change
2002-03	4161	-----	619.6	-----
2003-04	6288	51.12	726.6	17.25
2004-05	8344	32.70	953.3	31.22
2005-06	7953	-4.69	1281.6	34.44
2006-07	NA	-----	NA	-----
2007-08	37533	371.94	498	-61.14
2008-09	44476	18.50	537	7.83
2009-10	58408	31.32	526	-2.05
2010-11	69837	19.57	699	32.89
2011-12	147800	111.64	1866.33	167.00
2012-13	165262.06	11.81	2106.81	12.89
2013-14	194088	17.44	2563.08	21.66
CGR	51.50	-----	11.75	-----
CV	0.85	-----	0.66	-----

Source : *Lok Sabha Unstarred Question No. 5368, dated on 06.09.2011 & Lok Sabh Unstarred Question No. 6140, dated on 14.05.2012.** National centre for organic agriculture annual report 2002-03-2012-13

Table 5: Continent- wise Export of Organic Product during the period 2010-2011:

Continent	Export volume in metric tons		Export value in Rs. Lakh	
	Export volume	Percent of share	Export value	Percent of share
Africa	184.64	0.26	86.85	0.12
Asia	8867.16	12.70	10766.33	15.41
Australia	910.06	1.30	827.44	1.18
Canada	15060.84	21.57	10023.13	14.35
EU	30814.03	44.12	36452.21	52.18
New Zealand	608.55	0.87	192.91	0.28
USA	13391.58	19.18	11512.44	16.48
Total	69836.86	100.00	69861.31	100.00

Source: Lok Sabha Unstarred question No.5368 Dated on 08.09.2011; www.indiastat.com

Table-5 indicates the continent wise export of organic products from India. The proportion of export of organic product in terms of volume to European Union (44.12%) was highest followed by Canada (21.57%), USA (19.18) & Asian country (12.70). Moreover in terms of value of export European Union (52.18%) rank was first followed by Asia (15.41%), USA (16.48%) during the same period.

Table- 6 reveals the country wise export of organic products from India in 2013-14. The share of export of organic products in terms of volume to USA (42.16%) was highest followed by European Union (32.3%), Canada (21.68%). The share of import of organic products by these three nations was around 96%. The total volume of export of organic products from India was 177765.26 metric tons and export value was Rs. 1328.6 crores during the period of 2013-14.

Table: 6 Selected Country wise Export of Organic Food Products from India in 2013-14:

Sr no	Country name	Export volume in metric tons		Export value (Rs. in crore)		
		Export volume	Percentage Share	Export Value	Percentage Share	FOB (Rs/MT)
1	Australia	749.95	0.42	14.58	1.10	0.02
2	Canada	38545.57	21.68	182.41	13.73	0.00
3	China	76.35	0.04	1.57	0.12	0.02
4	European Union	56946.72	32.03	553.85	41.69	0.01
5	Iran	38	0.02	1.21	0.09	0.03
6	Israel	312.93	0.18	3.72	0.28	0.01
7	Japan	309.07	0.17	16.12	1.21	0.05
8	Korea Republic	143.48	0.08	2.33	0.18	0.02
9	Malaysia	43.44	0.02	0.91	0.07	0.02
10	New Zealand	599.79	0.34	4.23	0.32	0.01
11	Philippines	110.11	0.06	1.88	0.14	0.02
12	Singapore	73.02	0.04	0.97	0.07	0.01
13	Sri Lanka	78.51	0.04	2.45	0.18	0.03
14	Switzerland	4306.56	2.45	33.89	2.55	0.01
15	USA	74942.72	42.16	498.83	37.55	0.01
16	Others	489.04	0.28	9.65	0.73	0.02
17	Total	177765.26	100.00	1328.6	100.00	0.01

Source: Lok Sabha Unstarred Question No 2393 Dated on 25/07/2014.; www.indiastat.com

Table: 7 Commodity wise Export of Organic Produce from India in 2008-09:

Sr	Countries	Export volume in metric tons		Export value us dollar		
		Export volume	Share of percent	Export value	Share of percent	Price per kg in \$
1	Cotton	10886.68	24.48	25421861	21.90	2.3351
2	Basmati rice	5250.077	11.81	11261905	9.70	2.1451
3	Honey	2961.798	6.66	7487797	6.45	2.5281
4	Tea	2727.434	6.13	16710261	14.39	6.1267
5	Dry fruits	1922.91	4.32	15430991	13.29	8.028
6	Sesame	1272.626	2.86	1691589	1.46	1.3292
7	Spices	1013	2.28	4866678	4.19	4.8042
8	Processed food	2223.617	5.00	6145639	5.29	2.7638
9	Medicinal & herbal plants	1685.97	3.79	13292446	11.45	7.8842
10	Misc(guar gum,saffron,bee wax,morels,arrowroot)	1779.472	4.00	2185501	1.88	1.2282

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11	Oil crops (excluding sesame)	11891.28	26.74	8611897	7.42	0.7242
12	coffee	349.241	0.79	1243243	1.07	3.5598
13	Fruits	75.263	0.17	258110	0.22	3.4294
14	Pulses	9.97	0.02	21186.25	0.02	2.125
15	Oil and oleoresins	0.729	0.00	12301.11	0.01	16.874
16	Aromatic oils	19.9134	0.04	928825	0.80	46.6432
17	Vegetables	36	0.08	63000	0.05	1.75
18	Cereals	364.803	0.82	458949.4	0.40	1.2581
19	Total	44470.78		116092180.3	100.00	2.6105

Source-National Centre for organic farming -annual report 2008-2009

India is one of the most important producers of organic food. Table-7 reveals the 18 categories of organic products out of 135 organic products have been exported in various countries. The share of export volume of oil crops (excluding sesame) from India was highest (26.74%), followed by cotton 24.48%, basmati rice 11.81 %, honey 6.7% and tea 6.1% during the period of 2008-09. Similarly the share of export value of cotton was 21.90 %, followed by tea 14.39%, dry fruits 13.29%, during the same period.

Table: 8 Leading Countries Share of Organic Food Market in 2013:

Sr. No	Country	Retail sales in million Euros	% of share
1	United states of America	24347	36.95
2	Germany	7750	11.76
3	France	4380	6.65
4	China	2430	3.69
5	Canada	2375	3.60
6	United kingdom	2065	3.13
7	Italy	2020	3.07
8	Switzerland	1668	2.53
9	Austria (2011)	1065	1.62
10	Sweden	1018	1.54
11	India	130	0.20
12	Total	65897.84	100.00

Source - FIBL- AMI Organic Data Network Survey- 2015

Table- 8 shows the top ten countries share of organic food market in 2013. The share of organic food was highest in USA (36.9%), followed by Germany (11.76%), France (6.65%), and

china (3.69%) during 2013. Moreover India's contribution was 0.2% in total global sales of organic food in 2013.

Constraints of Organic Farming:

The most important constraint felt in the progress of organic farming is the inability of the government policy making level to take a firm decision to promote organic agriculture. It is quite natural that a change in the system of agriculture in a country of more than a billion people should be a well thought out process, which requires utmost care and caution. Farmers' apprehension lies in non-availability of sufficient amount of organic supplements, bio-fertilizers and local market for organic produce. Additionally, lack of access to guidelines, lack of market information and vocational training, risk of low yield, certification and input cost coupled with capital-driven regulation by contracting firms strongly discourage small farm holders who constitute over 80% of farming community in India.

IV. Conclusion & Policy Recommendations

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 & Germany. It was clear that area, production and yield of organic produce in India is very low and it varies very widely among different states in India. India has the potential to become a major organic

producing country given the international demand for our farm products, different agro-climatic regions for the cultivation of a number of crops, the size of the domestic market and above all the long tradition of environment friendly farming and living. However, at the same time increasing health consciousness and increasing disposable income among Indians is ceaselessly increasing the demand for organic food. Therefore 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 and plans to understand how they affect the current organic sector. An action plan for the organic sector should be developed based on the analysis of the state of the sector, participatory consultations, a need evaluation and proper sequencing of the actions.

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