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Organic Farming in North East India-Prospects and Challenges

By

Punam Chanda
Research Scholar, Department of Economics Tripura University
Email: punam.economics@tripurauniv.ac.in

Ashraful Islam
Research Scholar, Department of Political Science, Tripura University
Email: islamashru@gmail.com

Abstract

Prior to the invention of synthetic fertilisers, pesticides, mechanisation, etc., all Indian farmers used organic methods. Primarily in the middle of the 1960s and after, farmers started utilising the synthetically produced inputs that ignited our country's "Green Revolution". Although intensive agriculture contributed to food security, unscientific use of chemical fertilisers has gradually harmed the environment and soil health. There is an urgent need for farmers to promote the use of organic manures in order to maintain soil fertility and productivity. In the global market, organic produce is more expensive than conventional goods. As a result, organic farming enables farmers to profit and establishes a national organic hub. The rain-fed tribal, north-east and hilly regions of the country where negligible chemicals are used in agriculture have been practising subsistence agriculture for a long period; such areas are organic by default. The area is a biodiversity hotspot with many endemic species, including more than 50 species of bamboo, 14 species of banana, 17 species of citrus, 600 orchid species, etc. The area is a biodiversity hotspot with many endemic species, including more than 50 species of bamboo, 14 species of banana, 17 species of citrus, 600 orchid species, etc. The paper aims to provide an overall status of organic farming in India and north-eastern states and to highlight the strengths and weaknesses of organic farming in the North Eastern Region of India. The study is based on secondary data. It suggests that the need of the hour is adequate capacity building and providing technology for backstopping to the stakeholders. Marketing and value addition are important areas of concern for the farmers to get actual benefits out of organic farming. A close public-private partnership is warranted to achieve the desired momentum. Certification of organic products by resource-poor farmers is another major area of concern. This can pave the way for sustainable agriculture and protect people's health.

Keywords: Organic farming, food security, green revolution, north-eastern region, sustainable agriculture

Introduction

Indian farmers were all organic before the advent of synthetic fertilizers, pesticides, mechanisation etc. Farmers began using the synthetically produced inputs that sparked our nation's "Green Revolution" primarily in the middle of the 1960s and after. The Green Revolution not only significantly increased crop productivity, resulting in food self-sufficiency. Although intensive agriculture helped to ensure food security, it also gradually decreased soil health and ultimately crop productivity in a number of ways, including water salinity, land degradation, groundwater degradation, and land sedimentation. The environment and soil health declined as a result of the unchecked and unscientific use of chemical fertilisers. To sustain the fertility and productivity of soils, there is an urgent need to promote the

application of organic manures by farmers. Organic farming can benefit the environment, crops, and people's health while also paying farmers more. In the global market, organic produce is more expensive than conventional goods. As a result, organic farming enables farmers to profit and establishes a national organic hub. According to the United States Department of Agriculture study team, "organic farming is a system that avoids or largely excludes the use of synthetic inputs and depends, to the greatest extent possible, on crop rotations, crop residues, animal manures, off-farm organic wastes, mineral grade rock additive, and biological systems of the soil." In India, about the 528,171-hectare area is under organic farming (this includes certified and areas under organic conversion) with 44,926 certified organic farms which accounts for about 0.3% of total agricultural land **(Ramesh et al., 2010).** The organic farming sector in India is primarily focused on exports and is estimated to be worth US$78 million. As per the Agricultural and Processed Food Products Export Development Authority (APEDA), a nodal agency involved in promoting Indian organic agriculture, about 585,970 tonnes of organic products worth Rs 301 million are being exported from India. The states of Uttarakhand and Sikkim have declared their states as 'organic states'. In Maharashtra, since 2003, about 5 lakh hectares of the area have been under organic farming (of the 1.8 crore ha of cultivable land in the state). The Vidarbha Cotton Growers' Association, set up in 1994 with 135 members, has tied up with international agencies for exports **(GoI, 2001).** In Gujarat, organic production of chickoo, banana and coconut was found to be more profitable.

India's North East, comprising the eight states is largely unspoilt by modern agricultural practices; the region is a natural choice for promoting organic farming in the country. The rain-fed tribal, north-east and hilly regions of the country where negligible chemicals are used in agriculture have been practising subsistence agriculture for a long period; such areas are organic by default **(Reddy, 2009).** According to the estimates available with the Agricultural and Processed Food Products Exports Development Authority as of 2017-18, nearly 90,500 hectares of land in the north-eastern region is under organic cultivation. Sikkim accounts for more than three-fourths of this and other states such as Meghalaya and Assam have shown progress. The region is distinguished by a variety of geographical and agro-climatic conditions. The area is a biodiversity hotspot with many endemic species, including more than 50 species of bamboo, 14 species of banana, 17 species of citrus, 600 orchid species, etc. There are numerous opportunities for India's NER to become a significant supplier of organic goods. Economic and environmental concerns have been the drivers for increasing demand for organically produced food. Due to growing purchasing power and health consciousness, organic food products are being preferred by consumers and demand for organic vegetables is steadily increasing not only in international markets but also in domestic markets. The major reasons for the shift towards organic farming include sustained soil fertility, reduced cost of cultivation, higher quality of produce, sustained yields, easy availability of farm inputs and reduced attacks of pests and diseases **(ibid.).**

In this paper, an attempt has been made firstly, to provide an overall status of organic farming in India and north-eastern states and secondly, to highlight the strengths and weaknesses of organic farming in the North Eastern Region of India. The study is descriptive and analytical. The data and information have been collected from secondary sources such as the Agricultural and Processed Food Products Export Development Authority (APEDA), news articles, journals and research papers. The rest of the paper is divided into six sections. Section 1 and 2 provides an introduction and organic farming as a way to meet sustainable agriculture. Section 3 discusses the status of organic farming in India. Section 4 and section 5 highlight the prospects and problems of organic farming in the north-eastern region. Section 6 provides the implications of organic farming and lastly, the conclusion in section 7.

Organic Farming: An Approach to Meet Sustainable Agriculture

The idea of sustainable agriculture incorporates three main targets –environmental healthiness, economic prosperity and social and economic equity. The notion of sustainability rests on the standard that we must meet the requirements of the present without compromising the ability to access future generations to meet their own needs. The conservation of natural resources is crucial for the agricultural sector which depends primarily on nature. The dependence on inorganic fertilizers, pesticides and other chemicals in farming has severe long-term effects on the environment. It disrupts the environment and food chain. These chemicals contaminate land and water resources and enter into the food chain. In addition to this, when cattle munch foliage that contains these chemicals becomes concentrated in the flesh and milk of cows. Ultimately, it creates serious health issues for the people. Organic agriculture avoids all kinds of practices of inorganic farming which damages the ecosystem. Organic agriculture offers healthy food while maintaining ecological balance. Therefore, in order to cope with the nuisances arising from chemical-based farming there is an urgent need for the adoption of organic farming. Moreover, unsustainable farm practices have harmful impacts on the long-term income of the farmers. The increase in the use of fertilisers and fertilizers directs to an increase in the costs of cultivation. The only group which gets benefitted are the manufacturers of those chemical inputs. The continuous application of chemical fertilizers ruins the fertility of the soil which ultimately reduces the farm produce. It leads to increasing cost of production and declining productivity which makes farming economically unsustainable. Organic farming ensures long-term sustainability than chemical-based farming.

Organic products carry a premium price in the market which makes organic farming more profitable. An effective agricultural sector strategy can contribute to a broader development of agricultural productivity, food security, rural employment and poverty reduction while promoting the conservation of the natural resource base. This strategy should be adopted with sound infrastructure, governance and public-private participation for effective performance. Organic farming can pave the way for sustainable agriculture and protect public health. As far as India is concerned, the Government of India has been undertaking measures to promote organic farming with the aim to improve soil fertility and doubling farmers' revenue by the year 2022. The Prime Minister visited Sikkim state which is India's first organic state and encouraged other states to imitate the "Sikkim model". Similarly, Uttaranchal is also a leading player in organic farming. Some of the policy initiatives to promote organic farming and exports include the development of organic regulation for exports by the Agricultural and Processed Food Products Export Development Authority (APEDA), the removal of quantitative restrictions on organic food exports, providing subsidies under Paramparagat Krishi Vikas Yojana (PKVY) and other schemes such as Mission Organic Value Chain Development for North Eastern Region.

Status of Organic Farming in India

In India, organic farming is still in its early stages. As of March 2019, there were 2.30 million hectares of farmland under organic cultivation or 2% of the nation's 140.1 million ha net sown area. India is uniquely positioned among the 187 countries that practice organic agriculture, according to the Research Institute of Organic Agriculture (FiBL) survey from 2021. With 2.30 million ha, India is home to 30% of all organic producers worldwide. Total organic cultivation area, 11, 60,650 PGS farmers, 15, 99,010 India Organic farmers, 1703 processors overall, and 745 traders. Recent years have seen a significant relative increase in the amount of land used for organic farming across the nation. Given that a significant portion

of this industry is concentrated in a small number of states, a few of them have taken the initiative to increase the coverage of organic farming.

Area of Production

As of 31st March 2023, the total area under the organic certification process registered under National Programme for Organic Production is 10.17 million hectares (2022-23) which was 3.56 million hectares (2017-18). This comprises 5391792.97 ha of cultivable land and another 4780130.56 ha for gathering wild produce. Among all the states, Madhya Pradesh has covered the largest area under organic certification followed by, Maharashtra, Gujarat, Rajasthan, Odisha, Karnataka, Uttarakhand, Sikkim, Chhattisgarh, Uttar Pradesh and Jharkhand.

Production

India produced around 2.9 million MT (2022-23) of certified organic products which include 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 total organic production was 1.70 million MT during 2017-18. The production is not limited to the edible sector but also produces organic cotton fibre, functional food products etc. Among different states, Madhya Pradesh is the largest producer followed by Maharashtra, Rajasthan, Karnataka, and Odisha as shown in Table 1. In terms of commodities, fibre crops are the single largest category followed by Oil Seeds, Sugar crops, Cereals and Millets, Medicinal/ Herbal and Aromatic plants, Spices & Condiments, Fresh Fruit Vegetable, Pulses, Tea & Coffee.

Table 1: *Top ten states with the highest organic production during 2021-22*

Sl. No.	State Name	Total Production (In MT)
1	Madhya Pradesh	14,10,894.49
2	Maharashtra	6,91,419.72
3	Rajasthan	3,46,961.32
4	Karnataka	1,50,653.05
5	Odisha	1,83,604.02
6	Uttar Pradesh	1,31,812.92
7	Gujarat	25,867.40
8	Jammu & Kashmir	38,640.64
9	Kerala	31,965.48
10	Uttarakhand	31,719.74

Source: *APEDA*

Exports

The total volume of export during 2022-23 was 312800.51 MT. The organic food export realization was around INR 5525.18 Crore (708.33 million USD) which was INR 3453.48 crore

during 2017-18. Organic products are exported to the USA, European Union, Canada, Great Britain, Switzerland, Turkey, Australia, Ecuador, Korean Republic, Vietnam, Japan, etc as shown in Table 2.

Table 2: *India's exports of organic products during 2019-2020 to 2021-2022*

	2019-2020		2020-21		2021-22	
Country Name	**Exported Quantity (In Mt)**	**Value (In USD) Million**	**Exported Quantity (In Mt)**	**Value (In USD) Million**	**Exported Quantity (In Mt)**	**Value (In USD) Million**
U.S.A.	376070.03	353.31	500935.95	557.79	186,339.21	326.15
European Union	175674.41	250.99	267076.35	355.82	170,762.22	302.39
Canada	64225.71	46.62	69142.41	56.97	40,677.47	49.01
Great Britain	-	-	20844.14	19.54	30,221.77	41.57
Turkey	65.20	0.25	45.46	0.15	7,074.60	7.42
Switzerland	5192.01	9.63	3924.64	7.67	5,142.11	10.84
Vietnam	3270.25	1.66	3276.59	2.17	4,796.89	3.31
Ecuador	580.46	0.40	3708.05	2.92	4,172.44	5.09
Korea Republic	1292.16	1.39	4536.34	4.31	3,402.44	4.11
Israel	2531.74	2.54	4480.12	4.65	1,751.20	2.63

Source: *APEDA*

Due to its agro-climatic regions, India is endowed with a wealth of potential to produce all varieties of organic products. This offers hope for organic producers to access the steadily expanding domestic and international markets. With the help of two specific programmes, the Paramparagat Krishi Vikas Yojana (PKVY) and Mission Organic Value Chain Development for North Eastern Region (MOVCDNER), the government recently proposed adding 6.5 lakh ha to the country's organic farming area. According to the Participatory Guarantee System (PGS) and the National Programme for Organic Production (NPOP), 59.12 lakh ha of land has already been converted to organic farming. According to a report by the Research Institute of Organic Agriculture (FiBL) and the International Federation of Organic Agriculture Movements (IFOAM) Statistics 2022, India is fourth in the world in terms of certified areas **(PIB, 2022).** Organic farming schemes have always included marketing and branding. Marketing, branding, and trade assistance are provided at Rs 6800 per ha under PKVY and Rs 5000 per ha under MOVCDNER **(ibid.).** As per the available statistics, India ranks 6th in terms

of the World's Organic Agricultural land and first in terms of total number of producers as per 2021 data **(FiBL & IFOAM Year Book, 2023).**

Table 3: *State Wise Export during 2021-22*

States	Exported Quantity (In MT)	Total Value (In Crore)	Total Value (In USD Million)
Madhya Pradesh	1,76,385.91	1,292.55	190.08
Gujarat	60,023.78	727.09	106.92
Maharashtra	85,526.16	696.71	102.46
Karnataka	22,075.80	419.60	61.71
Uttar Pradesh	6,968.17	333.40	49.03
Kerala	7,337.49	308.59	45.38
West Bengal	4,874.22	306.57	45.08
Haryana	29,093.98	270.66	39.80
Telangana	7,310.18	209.16	30.76
New Delhi	24,771.90	199	29.26
Daman & Diu	16,532.39	134.13	19.73
Tamil Nadu	6,281.77	123.32	18.14
Rajasthan	9,142.59	109.17	16.05
Andhra Pradesh	2,720.27	76.76	11.29
Uttarakhand	285.43	11.58	1.70
Goa	175.33	10.91	1.60
Jammu & Kashmir	539.55	8.92	1.31
Chhattisgarh	59.90	4.25	0.62
Himachal Pradesh	11.56	4.13	0.61
Punjab	182.40	2.20	0.32
Odisha	15.75	0.36	0.05
Assam	5.87	0.29	0.04
Total	460320.40	5249.32	771.96

Source: *APEDA*

Table 3 shows state-wise exports of organic products during 2021-22 which shows that Madhya Pradesh exported the maximum amount followed by Gujarat, Maharashtra, Karnataka, Uttar Pradesh and so on. These states also earn a substantial amount of revenue from their organic products. However, the majority of the commodities exported witnessed negative growth in their export quantity in 2021-22 as shown in Table 4. Only a few commodities namely flowers, fruits and vegetables and oils & oleoresins had an increase in the amount exported.

Table 4: *Commodities exported during 2020-21 and 2021-22*

Sl. No.	Commodities	2020-2021			2021-2022		
		Exported Quantity (In MT)	Total Value (In INR Lac)	Total Value (In USD Million)	Exported Quantity (In MT)	Total Value (In INR Lac)	Total Value (In USD Million)
1	Cereals & Millets	59907.788	51679.492	75.999	58513.8	47877	70.407
2	Coffee	4381.514	11097.371	16.32	3916.19	9693.75	14.256
3	Dry Fruits	3658.167	23848.954	35.072	3433.51	21615.4	31.787
4	Essential oil	219.314	7129.638	10.485	188.346	17204.6	25.301
5	Flowers	190.133	1575.523	2.317	243.293	2012.83	2.96
6	Fodder	6876.943	4187.898	6.159	4972.9	4148.91	6.101
7	Fresh Fruits & Vegetables	1404.315	2633.966	3.873	1580.13	3344.26	4.918
8	Medicinal Plant Products	4230.57	31935.761	46.964	4072.86	37090.3	54.545
9	Miscellaneous	42.025	84.859	0.125	62.08	104.506	0.154
10	Oil Seeds	84072.655	63965.495	94.067	59168.4	52954.2	77.874
11	Oils & Oleoresins	1.441	114.393	0.168	2.999	336.156	0.494
12	Others	655.775	3328.758	4.895	668.767	3089.62	4.544
13	Processed Food	655986.206	400170.032	588.485	281190	236977	348.496
14	Pulses	8781.97	12991.59	19.105	5433.51	7317.63	10.761
15	Spices & Condiments	10022.276	38061.412	55.973	7957.92	31483.9	46.3
16	sugar	40541.511	19027.833	27.982	21932.6	11198	16.468
17	Tea	6164.236	34512.041	50.753	6060.47	37089.6	54.543
18	Tuber Products	1042.85	1504.504	2.213	922.138	1394.53	2.051
	Total	888179.689	707849.52	1040.955	460320	524932	771.96

Prospects of Organic Farming in North East India

Agriculture in North East India is organic by default with meagre use of chemicals. The North Eastern Region accounting for 3.4% of the total cultivable area of the country contributes 2.8% of the food grain production. Untouched by the Green Revolution, much of the north-east continues to be organic with limited use of chemical inputs and farmers practising traditional methods of farming. Most of the cultivated areas (about 1.5 million hectares) in the NER of India excluding the plains of Assam, Tripura and Manipur are adopting organic farming for generations. A variety of organic crops including tea, joha rice, and lemon in Assam, large cardamom and ginger in Sikkim, king chillies in Manipur, and pineapples in Tripura are grown in this part of India. The central government has taken initiatives to develop the North East as an organic agricultural hub- one such is the "Mission Organic Farming North East". State governments of Manipur, Mizoram, Sikkim and Nagaland have formulated organic policies. As mentioned, the region follows organic farming traditionally can be shown with

less consumption of fertilizers. The Government of India has launched several programmes, including the well-known Paramparagat Krishi Vikas Yojana (PKVY), National Programme for Organic Production (NPOP), and National Project on Organic Farming (NPOF), in various north-eastern states to promote organic farming **(DAC F&W, 2017).**

The region has numerous advantages to go for organic farming **(Das et. al., 2017).** Organic farmers need to borrow less money than conventional farmers for two reasons; firstly, organic farmers need to buy fewer inputs such as fertilizer and pesticides; and secondly, costs and income are more evenly distributed throughout the year on diversified.

- Firstly, the use of inorganic fertilizers and chemicals is meagre in the region. The farmers of the region, in general and hill farmers in particular are having apathy towards agro-chemicals (Singh et al., 2021).
- Secondly, the fruits of the green revolution could not benefit the farmers of the hills as the system of production in the hills remained low-input-low risk-low yield technology and the average yield technology of most of the crops remained far below the national average. It is assumed that the difference in production gap due to the adoption of organic agriculture is expected to be negligible in the region; rather there is scope for enhancing productivity with good organic management and the organic premiums would boost earnings of the hill farmers.
- Thirdly, it is an added advantage that all the households maintaining livestock (pig, poultry, cattle, goats, etc) and the region is having about 26 million livestock population producing a sufficient quantity of on-farm manures, which could be effectively used in farming.
- Moreover, the north-eastern states receiving heavy rainfall (2000mm to 11000mm per annum) leads to profuse production of biomass including weeds, shrubs and herbs which may be utilised as valuable organic nutrient sources for sustainable crop production.

Table 5: *Total area under organic certification process during last 6 years in North East Region (cultivated + Wild Harvest) (in ha)*

State	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
Sikkim	75218.28	76076.18	75798.92	75717.65	75729.66	75475.28
Arunachal Pradesh	72311.27	6179.69	9246.94	10657.66	13114.12	12636.64
Meghalaya	9629.60	40335.66	48409.74	45382.40	38376.39	27508.74
Mizoram	210	998.95	7039.89	10029.89	13038.89	19038.89
Manipur	241.4	5397.90	7460.82	14990.07	14724.92	14628.42
Assam	23930.4	28071.81	28234.67	26753.67	18470.84	18102.94
Tripura	203.56	2251.19	2534.52	3539.18	6521.31	12081.63
Nagaland	4699.93	8839.86	8268.56	14254.97	14790.38	14269.27
Total	4452987	3566539	3428639	3669801	4339185	9119866

Source: *APEDA*

Table 5 shows the total area under the organic certification process during the last 6 years in the 8 north-eastern states. It is observed that Sikkim has the maximum area under organic certification followed by Meghalaya, Mizoram and Assam. It is noticed that the area

under organic certification has increased for 6 north-eastern states from 2016 i.e., Sikkim, Meghalaya, Mizoram, Manipur, Tripura and Nagaland.

In fact, the North Eastern Region is considered home to some niche crops like Assam lemon, Joha rice, and fruits which has high market demands. North-eastern states have been declared organic farming states. Sikkim has become India's first fully organic state by implementing organic practices in approx. 75,000 ha of agricultural land. In Nagaland, a 3000-hectares (ha) area is under organic farming while Meghalaya has committed to certifying 200,000 hectares of land as organic by 2020. NER accounts for 45% of the total pineapple production in India. Agri-Export Zone has been set up in Tripura for the organic cultivation of pineapples. Another Agri- Export Zone has been established for ginger in Sikkim. Recently, Sikkim has achieved the feat of being the world's first organic state and has been awarded the UN Future Policy Gold Award 2018, beating 51 nominated policies from different countries.

Problems of Organic Farming in the North Eastern Region

The most important problem felt in the progress of organic farming in north-east India is the inability of the government policy-making level to take a firm decision to promote organic agriculture. Unless such a clear direction is available in terms of both financial and technical support, from the Centre to the village level, mere regulation-making will amount to nothing. The following are the major problem areas for the growth of organic farming in the region:

Lack of awareness

Many farmers in the region have vague ideas about organic farming and its advantages over conventional farming. The use of bio fertilizers and bio pesticides, organic manures and preparation of various composts requires awareness and willingness on the part of the farming community. Farmers are also lacking in their knowledge about nutrient supplementation between cropping systems. There is a lack of awareness and knowledge about modern methods or techniques of composting, vermicomposting etc., among the farmers from preparation as well as application point of view and thus both quality and efficacy are poor in the end.

Output Marketing Problems

Before the beginning of the cultivation of organic crops, their marketability and that too at a premium price over the conventional produce has to be assured. The inability to obtain a premium price, at least during the period required to achieve the productivity levels of the conventional crop will be a setback **(Lanting, 2007).** The supply chain linkage in India is undersized and small and mid-sized farmers located in hilly regions and tribal areas find it extremely difficult to access the market. While the government is supporting organic product marketing through fairs and exhibitions, it does not provide farmers with a stable market. In a number of cases, the middlemen take away most of the profits and farmers are not able to earn a premium price. Direct linkages to processors and retailers could have helped farmers to get a better price, but farmers lack the right linkages and hence have to depend on middlemen and mandis.

Inadequate Infrastructure

Infrastructure development is one of the biggest challenges faced by organic farming. Closed corner location, remoteness and isolation from markets are prime constraints. There are few agencies for accreditation and expertise is limited to fruits and vegetables, tea, coffee and spices. North-eastern region of India is very specific in respect of climate and has wide climatic variability even within the state, therefore location specific organic production technology is

required. Organic products have to be stored separately from conventional products to avoid cross-contamination and the existing supply chain does not often provide that facility. On one hand, target groups of organic food products such as big hotels, restaurants, airlines, cafes, etc which could afford to pay premium prices for high-quality organic foods are completely lacking. On the other hand, common people cannot afford to pay higher prices for organically produced food.

High Input Costs

North-east India is the home of small and marginal farmers they having apathy to purchase costly organic inputs, at present cost of organic inputs are higher than those of industrially produced chemical fertilizers and pesticides including other inputs used in conventional farming. Local or farm renewable organic resources like neem cakes, groundnut cakes, cow dung, earthworms, etc are becoming costlier day by day than conventional or industrially produced chemical fertilizers and pesticides. Chemical fertilizers are easier to purchase given has purchasing power. Organic farming is an intensive process, limited mostly to resource-rich farmers, and the export market and depends heavily on external support systems for price, market intelligence and certification of produce, among others **(Sanghi, 2007).**

Marketing Problems of Organic Inputs

There is a severe shortage of good quality organic inputs, which increases the risk of loss of crop production. The obtainable organic manures are much below the necessary quantity, and there are a number of counterfeit players in the market too. Correspondingly, there is a deficiency of good-quality organic seeds. Some input companies have taken the initiative to go for third-party certification. However, there is a need for a policy on input standardisation. Higher margins of profit for chemical fertilizers and pesticides are other problems affecting the market for organic inputs.

Lack of Financial and Policy Support

North-east India has to design regional standards in attune with those of the advanced countries. The cost of certification becomes burdensome for small and marginal farmers. Therefore, the government should at least provide financial support for the certification process. Organic farmers lack an organic policy for the domestic market and imports. In the absence of regulation on labelling standards for organic production and logo, it is not possible to distinguish an organic product and a conventional product. This has led to fraudulent practices and genuine players are not getting the premium, which the consumers of organic products are willing to pay. Farmers opine that government should help farmers to get a compulsory certification once their land is transformed into organic.

Low Yield of Crops

With the use of organic sources of nutrients, the yield of the crop is low, especially during the initial stages, although it may stabilize later. As a farmer converts their soil from conventional agriculture to organic farming, there is a risk of loss in yield due to the withdrawal of chemical inputs and HYV seeds. But in India, there is barely any subsidy provided to our farmers. Further, a majority of the government budget and subsidies are targeted towards chemical-based inputs production and a negligible amount is to develop the organic farm sector.

Implications of Organic Farming

Economic implications

Many farmers are in financial difficulty. Prices of many commodities have been low and the costs of inputs maintain a rise at a higher rate than the average price level. Organic

farming provides opportunities on both counts; greater productivity and input cost reduction. It is more profitable than conventional farming systems. First, operating costs for organic farms may be up to one-third lower, particularly for energy, chemicals and drugs. Second, where premium prices are available in organic markets, the likelihood of a better income situation is even greater. Third, many organic farmers achieve higher net income by making direct links with consumers, which allows them to capture a greater percentage of the consumer dollar. Fourth, organic farms may be more resilient in the face of poor weather. They are less likely than conventional farms to suffer yield and revenue losses that would trigger safety net payments.

Social implications

The substitution of chemical inputs in organic agriculture results in higher demand for labour in comparison with conventional agriculture and therefore contributes to rural employment and helps keep in business small farms which would otherwise not be capable to cope with intensification and global competition. Studies observe that labour input is expected to be higher in organic farming due to the manual and mechanical work needed to weed crops. Preparing products for home and market sale also need labour. Moreover, eco-tourism to organic farms is a tool to help small farmers to earn additional income. Farms that offer tourism have the opportunity to sell their products thoroughly to the consumer avoiding often expensive intermediaries.

Environmental implications

Organic farming can be profitable and organic food appeals to consumers as a healthy and safe choice. Besides this, organic farming practices result in numerous environmental benefits. Organic agriculture reduces non-renewable energy use by decreasing chemical needs. It contributes to mitigating the greenhouse effect and global warming through its ability to sequester carbon in the soil. Practices such as minimum tillage, returning crop residues to the soil, crop rotation, and nitrogen fixing legumes increase the return of carbon in the soil and raise productivity. These soil-building practices also encourage soil fauna and flora improving soil formation and structure. They also play an important role in soil erosion control and nutrient losses, helping to maintain and enhance soil productivity. In many agricultural areas, pollution of groundwater with synthetic fertilizers and pesticides is a major problem. Organic fertilizers (e.g., Manures, compost etc) enhance soil structure and water infiltration. Well-managed organic systems with better nutrient-retentive abilities greatly reduce the risk of groundwater pollution. Thus, the organic farming system ensures long-term sustainability.

Conclusion

The North Eastern Region of India has huge potential for organic crop production. However, the region's productivity is far behind the national average, which may increase by adopting suitable agro–techniques. Organic farming is gaining momentum in recent years as a sustainable crop and soil management practice, especially for small and marginal farmers. The need of the hour is adequate capacity building and providing technology for backstopping to the stakeholders. Marketing and value addition are important areas of concern for the farmers to get actual benefits out of organic farming. A close public-private partnership is warranted to achieve the desired momentum. Certification of organic products by resource-poor farmers is another major area of concern. With the policy support, farmers can be grouped and community certification can be achieved cost-effectively for sustainable development. With the ever-increasing population having huge food requirements and meagre availability of organic resources and other constraints “pure organic farming” is not possible; rather some specific

areas can be diverted to horticultural and plantation crops. Therefore, organic farming can pave the way for sustainable agriculture and protect people's health. This will lead to a better quality of life for all people enabling the country to achieve the ideal of welfare in a liberal and mixed economy.

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