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# **ORGANIC AGRICULTURE: A PATHWAY FOR ACHIEVING ECONOMIC AND ENVIRONMENTAL SUSTAINABILITY IN NORTH-EAST INDIA**

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## **ABSTRACT**

*The North eastern region of India comprising of eight states is in an advantageous position to develop its agriculture sector through utilizing its potential in producing various agri-horticulture crops. The organic farming in this regard can act a driver of agricultural growth in North eastern states. Organic farming could provide sustainable livelihood to rural mass with ensuring food security and protecting the environment in the long run. But despite the recognized advantages of organic farming in this region, it has certain issues to overcome in this aspect. This paper shows how organic farming can help to protect environment and ensure economic sustainability in North eastern states of India. It also found that absence of market infrastructures, lack of awareness, improper identification of marketing channels etc. act as constraint in this path.*

**KEYWORDS:** *organic farming, North eastern states, environment, economic sustainability.*

## **1. INTRODUCTION**

In Indian scenario, agriculture sector plays a vital role in terms of providing food and livelihood to the rural mass. Though it has lot of potential to develop, there are various issues for which the growth of agriculture is not fully realized. The primitive agricultural practices are becoming threat to India's socio-economic development in the sense that overexploitation of land and water resources, use of chemicals are harmful both for nature and the economic sustainability. In this regard, the method of organic farming or organic agriculture could be an alternative to traditional agricultural practices. India produces 30% of total organic products has for highest number of organic producers in the world according to World of Organic Agriculture report 2018. Organic farming is a unique agricultural method in which harmful chemical inputs are avoided and depends on

crop rotation, bio-fertilizer, animal manure, organic waste etc. In North-eastern region of India, the organic agriculture can minimize environmental risk and enhances quality of natural resources. In the rain fed hilly and plain areas of this region through diversifying cropping pattern and agricultural strategies, organic farming will be beneficial to a large extent. Therefore organic agriculture strategies have immense significance for North eastern states.

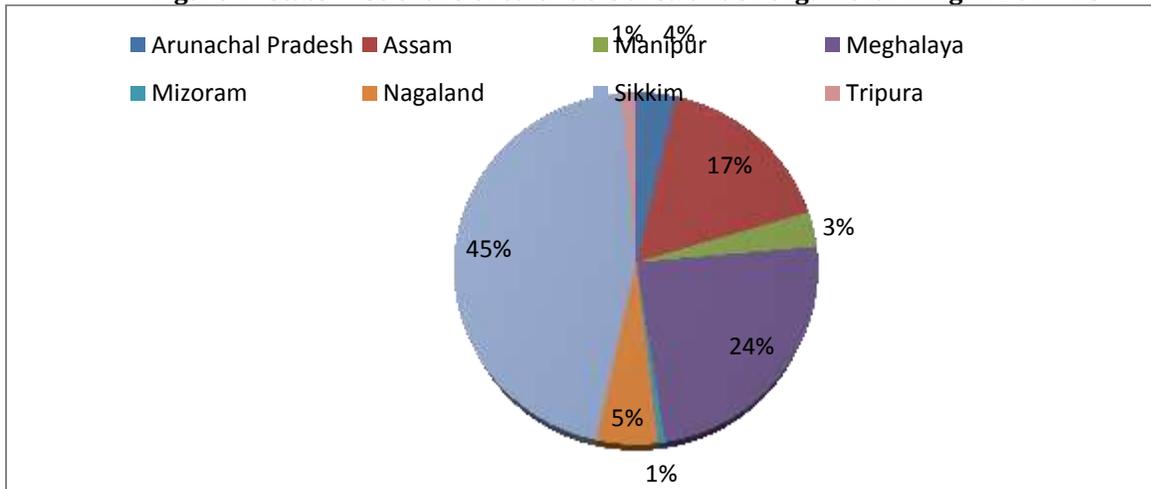
## **2. THE PRESENT STATUS OF ORGANIC AGRICULTURE IN NORTH-EAST INDIA**

With the passage of time, the farmers are becoming unhappy with traditional agricultural methods and choosing the organic farming. In North east India, under National Programme for Organic Production (NPOP) total 44,200 hectare area has been covered which accounts for 4.85% of total area under

NPOP in the country. Sikkim alone accounts for 88% of total area under organic farming in this region till

2018. In Manipur, now a days; organic farming is widely plasticized in hilly areas.

**Figure-1: State wise share of cultivable area under organic farming in 2017-18**

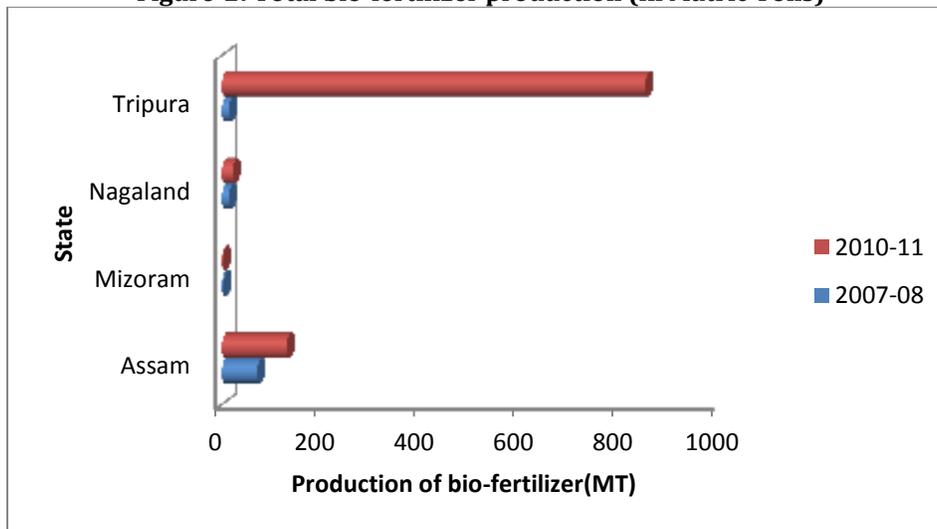


Source- <http://apeda.gov.in>

In 2017-18, the share of North East Region in total cultivable area under organic farming was 9.4% of total cultivable area under organic farming in India. Sikkim accounts for a larger part that is about 45% of total area under organic cultivation in north eastern region in 2017-18. Likewise, the share of Meghalaya and Assam in total organic cultivable area is 24% and 17% respectively. The shares of other states are negligible in this aspect. From another point of view,

the North east region of India contributes 3.34% of total organic agricultural output of the nation. Assam alone contributes 3.34% of total organic production of India. But, the organic agriculture covers only 3% of total arable area in this region. Therefore, organic farming should be natural choice for enhance resilience of agricultural system and protecting environment. It will enable the region to achieve high rate of socio-economic development.

**Figure-2: Total bio-fertilizer production (in Matric Tons)**



Source- <https://ncof.dacnet.nic.in>

The total production of bio-fertilizer in 2010-11 in North east was 393.39 matric tons which showed a growth of more than 200%. But as per the statistic provided by the National Centre of Organic Farming, bio-fertilizer production is only limited to Tripura, Nagaland, Mizoram and Assam. It is visible in figure-3 that In Tripura the production of bio fertilizer is highest

in 2010-11 which showed highest growth is this aspect over the year 2007-08. Assam also shows a better picture compared to Mizoram and Nagaland which accounts negligible amount of fertilizer production in the region. The production of bio fertilizer in North eastern states contributed to 0.51% and 1% in 2007-08 and 2010-11 respectively to total production of bio-

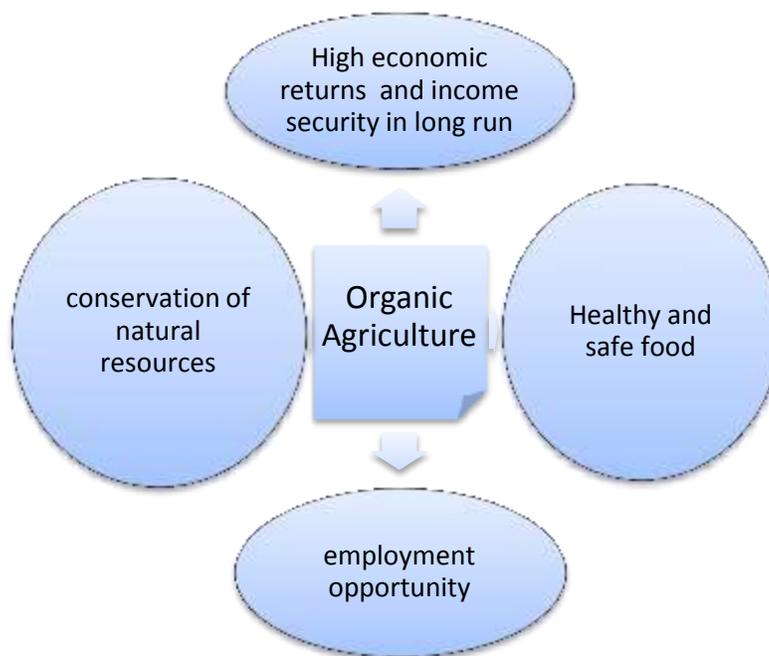
fertilizer in the country. In this region, organic agriculture will provide longer term socio-economic and environmental benefits and therefore promotion of this method is the need of the hour.

### 3. THE PROSPECT OF ORGANIC FARMING TO ACHIEVE ECONOMIC AND ENVIRONMENTAL SUSTAINABILITY IN NORTH-EAST INDIA

It is noteworthy that even if the organic agriculture leads to sustainability to both economy and environment over time, but the impacts of organic farming on both are closely related. So, it is possible to discuss about these two aspects in an integrated manner. From the viewpoint of economic benefit, organic farming can reduce risk and optimize economic profitability in longer term as it is a low risk

farming strategy. According to Avasthe et. al. (2017) organic agriculture leads to higher economic and environmental stability with reduced input costs and prevention of partial or total crop failure. Organic production systems are based on specific standards and are economically feasible when access to organic input and product markets are easy. Organic waste and plant residues used in agricultural fields can also protect environment. If farmers are protected from middleman, organic farming practices could benefit poor small and marginal farmers. It ensures economic sustainability in the sense that it enables people to cope with and recover from various economic and non-economic shocks to enhance their wellbeing. Some of the advantages of organic agriculture are shown in the following figure.

**Figure-3: The advantages of organic agriculture**



Source- Author's own

It can be seen from the above figure that organic agriculture is showing the pathway to sustainable development through minimizing environmental and economic risks. It is also important to mention that the list of advantages of this farming method is not such short to summarize in a few words. It has also been seen that, to meet the demand of increasing population, more areas have been brought under the “Jhum cultivation” in North eastern states.<sup>1</sup>

<sup>1</sup> Jhum or shifting cultivation refers to a traditional farming practice of hilly areas where trees and vegetation are cleared and burned and then the land is cultivated. After certain period of

This traditional agriculture practice is destructive to environment as it leads to soil erosion, loss of soil fertility, loss of vegetation cover, landslide etc. Organic agriculture, in this aspect; has tremendous potential for providing better livelihood security to people without harming the environment.

The demand for safe and healthy food is growing with increasing income levels in India. The widely accepted method of agriculture inspired by “Green Revolution” tries to produce more food by using more chemical fertilizers and pesticide. Now, it is leading to

time, the plot is abandoned and the process is repeated in a new plot .

destruction of soil quality and fertility, degradation of water etc. and fails miserably to produce food to a great extent. The food produced by organic farming does not have toxic materials which are harmful to health and hygiene and therefore it can provide safe and healthy food to people without harming the environment. In case of conventional agricultural strategies, nutrients are extracted from soil without restoring the soil quality. But North east India is rich in organic carbon and therefore it has huge prospect for organic farming.

In North-east India, if the untapped potential for organic agriculture could be realized, it will benefit farmers by raising value of organic products both in national and international markets. Through organic method, cash crops like ginger, turmeric, areca nut, orange etc. can be grown which have untapped production and export potential. In this way, tea growers, by switching inorganic to organic tea production; can make profit. Organic tea reduces input cost and is more acceptable in the foreign markets. De L.C. (2018) emphasized that production of some horticulture crops through organic farming is favorable to employment generation and sustainable livelihood in North-east India. These facts reveal that this agriculture method can provide employment and secure income of the people of North east who are trying their luck and hard work for searching job in the job market.

The organic agriculture conserves the resource base for future generations through “resource protective” farming practices which is essential for sustainable development in any country. Again, the complicated goals of food security could be achieved in the rapidly growing market economy through this method. It can also help to deal with the problems of unemployment, poverty, hunger and environmental degradation in not only North east but all over India. Therefore, through investment in capacity building and skill development, broad based growth can be realized through these types of farming practices in North east.

#### **4. THE CHALLENGES IN THE PATHWAY**

Though there is wide range of opportunities for increasing agricultural production and productivity in North-east through organic farming, there are various challenges to overcome. For making the North eastern region the “organic hub” of India, these problems challenges have to be addressed. At first, lack of infrastructure facilities is major hurdle in the success of organic agriculture in North eastern states. Without developing markets for organic commodities and organic inputs, adequate and low cost transport and communication facilities, and adequate agricultural infrastructures like irrigation, watershed development etc. the organic farming cannot flourish in North east

India. This region thought to be a remote area from past with low level of infrastructure facilities. Therefore, building of infrastructure facilities can help in agricultural development in this region to a large extent. According to Indian Council of Agricultural Research (ICAR), lack of processing; post harvest and value addition facilities is a weakness for organic farming in North east region.

Secondly, when available sources of organic fertilizer and other environment friendly inputs are easy to find, farmers tend to divert from traditional to eco-friendly agricultural practices. But in North east India, the link between producer and consumers of organic inputs are weak. It is also argued that high cost of organic inputs also restrict farmers to organic agriculture practices.

Though the North eastern region of India is endowed with 33% of total water resources of the country and can efficiently utilize rainwater harvesting technique, only 11% of net cultivable land is irrigated in this area. To deal with the traditional practices of irrigation adopted by majority of farmers which leads to groundwater depletion and use of non-renewable energy is another challenge for North east in this matter. If not successfully tackled, this problem will have unforeseen consequences in future.

Again, in North eastern states, lack of identification of potential areas for organic certification is said to be another challenge in this regard. As emphasized by Indian Council of Agricultural Research (ICAR), in this region; there is lack of identification of accreditation and certifying agency on regional basis. On the other hand, certification by a recognize agency requires money and waiting which is a tedious process for majority of the farmers. Fifthly, as pointed out by Wani et. al.(2017) during initial period, the yield of crops tend to be low in case of organic farming. In North east, farmers tend to rely on traditional methods for short term profitability which is another constraint in the path of success of organic farming in this area.

Sixthly, the farmers diverting to organic agriculture also faces a number of problems. Negotiation of price with factories is a major problem for small tea growers who often do not get adequate price of their produce due to lack of bargaining power. For large tea gardens, challenges of labor management and labor mobility are prevalent. Small tea growers and producers of other horticulture crops are also deprived of consultancy and expertise that can guide them in the process of organic conversion.

The point to be noted is that challenges in the pathway to realize prospects of organic agriculture in north eastern states are not limited to only those explained above. Therefore, more research and development for identifying marketing channels and sources of low cost organic inputs are needed at present. Low cost credit for purchasing organic inputs,

strengthening the connection between consumer and producers in input and output markets, training facilities, increasing awareness about organic farming etc. should be done by both government, non-governmental organizations and social workers in north eastern states to protect the environment and revive the economy of North east. Other government initiatives could also bring hope to North east for becoming “organic hub” of the country by overcoming these challenges.

## 5. CONCLUSION

The North eastern region is rich in both human and natural resources. If the unexplored potential of production under organic farming in this region could be realized, then agricultural development of this region will be much faster. The North east states has been showing possibilities for making rural development process more inclusive and sustainable through adoption of organic agriculture. India’s first organic state Sikkim has already shown pathway for sustainable socio-economic development to the whole country. A joint study by ICAR-National Bureau of Soil Survey and Land Use Planning, ICAR-Indian Institute of Soil Science Bhopal and Food and Agricultural Organization(FAO) revealed that not only Sikkim, but almost entire North east India is perfectly fit for organic farming. In future, through providing training and financial help to rural youth, promotion of organic farming practices are must needed in this area.

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