

# ORGANIC FARMING AND PROMOTION OF LIVELIHOOD IN NORTH EASTERN REGION



111

### **Executive Summary** TITLE OF THE STUDY

## ORGANIC FARMING AND PROMOTION OF LIVELIHOOD IN THE NORTH EASTERN REGION

Organic farming has garnered global attention for its multitude of benefits, particularly its role in environmental conservation and biodiversity preservation. In India, the National Programme for Organic Production (NPOP) has been instrumental in fostering the growth of organic agriculture since its establishment in 2001. Traditional farming practices in India have historically leaned towards chemical-free methods, relying on organic manures for cultivation. As of March 2021(APEDA), about 2.65 million hectares of land in India were dedicated to organic farming, making India a major player in the global organic market accounting for around 50 % of total organic growers in the world because of the small holdings of each producer. In India, the changing consumer preferences, especially in cities, have led to increased demand for organic and healthier food options. This trend presents a unique opportunity for the North Eastern region, which is naturally suited for organic farming but lacks certification recognition. However, with proper infrastructure and support, this region can become a hub for organic agriculture.

In the North Eastern Region (NER), the geographical area spans 2.62 lakh km2, constituting about 8% of the total area and 3.4% of the total cultivable area of India. However, approximately 1.3 million hectares of this area suffer from serious soil erosion. Despite these challenges, the NER boasts abundant rainfall, with 2,400 mm/year primarily concentrated in the monsoon season, accounting for approximately 10% of the country's total precipitation. The NER region is a biodiversity hotspot, hosting many endemic species, including more than 50 bamboo species, 6,000 lines of rice, 14 species of banana, 17 species of citrus, and around 600 kinds of orchids, besides many medicinal and aromatic plants. Wild relatives of 132 economically important species like rice, banana, citrus, mango and pulses are either primary or secondary centres of origin in the region. Further, out of the total geographic area in NER, about 54.1% area is under forests, 16.6% is under crops, and the remaining land is either under non-agricultural uses or uncultivated land (Sahaetal., 2012). The socio-economic status of the people living in NER is mainly rural and agrarian, as more than 70% of the population is engaged either directly or indirectly in agriculture and allied sectors.

The current scenario of organic farming in the Northeast has shown progress in growth; the area has doubled from 1 lakh ha in 2014-15 to more than 2 lakh ha in 2019-20. The share of NER in total area under organic certification including organic harvest has also increased from 2.25% in 2014-15 to 5.48% in 2019-20. Despite accounting for only 3.13% of India's net sown area, NER contributes significantly to the country's organic agriculture, with 7.25% of the total organic area. Sikkim stands out as a leader in organic farming, dedicating a staggering 98.35% of its net sown area to organic cultivation, setting a benchmark for other states. The state is recognised as the world's first fully organic state and stands as a powerful example of the potential of organic farming in the region. This success has spurred other states like Mizoram, Arunachal Pradesh, and Tripura to set similar sustainability goals.

Though the North Eastern Region (NER) has a considerable number of farmers engaged in organic farming, there is significant potential for growth. Specifically, NER has 130,510 farmers involved in organic farming, which is a small fraction compared to the 4.43 million organic farmers across India. This disparity indicates that organic farming, although present, has not yet reached its full potential in the NER. This is mainly because of existing exhaustive agriculture production system mainly through cereal-based clean cultivation and minimal use of organic inputs that pose major threats to the sustainability of the organic food production systems. Therefore, cultivation of short-duration, high-value and high-volume crops like vegetables/spices/fruits is advocated in these systems to compensate for the yield loss by fetching premium prices are promoted.

In NER, To support organic farming across the North Eastern region, the Ministry of Agriculture and Farmer WelfarehasinitiatedtheMissionOrganicValueChainDevelopmentfortheNorthEasternRegion(MOVCD-NER) during the 12th plan period. With its fertile land, diverse climates, and rich biodiversity, the Northeast is primed to become a hub for organic agriculture. Programs such as the Paramparagat Krishi Vikas Yojana (PKVY) and MOVCD-NER offer financial incentives and promote organic practices.

However, challenges like access to organic inputs, marketing, financing, and infrastructure development must be addressed for a successful transition. By embracing organic farming practices and capitalizing on its agricultural resources, the North East has the potential to enhance livelihoods, foster sustainable food production, and contribute significantly to the growth of the organic sector in India.

Therefore, this study titled "Study On Organic Farming And Promotion Of Livelihood In The North Eastern Region" is a comprehensive effort to understand the current potential and viability of organic farming in the region, its potential business opportunities, and the policy landscape needed to create an enabling ecosystem of support for organic farmers. The study follows a comprehensive research methodology that includes both primary and secondary data collection. Primary data was collected through surveys and consultations with farmers, Farmer Producer Companies (FPCs), government officials, industry experts, and other stakeholders. Secondary data was gathered from various sources such as APEDA, FAOSTAT, ITC, MOMA, published reports, and academic journals. The study identified valuable organic products in the NER with export potential, assessed production gaps and marketable surplus, and analyzed the convergence possibilities of different government schemes for promoting organic farming in the region. Additionally, the study conducted a demand analysis of food-based items in neighbouring ASEAN countries and other countries to identify marketing strategies for exporting organic food products from the region.

#### GLOBAL ORGANIC LANDSCAPE :

Looking at the global trend in organic agriculture, the latest data on global organic agriculture from 2021 indicates significant growth, reaching new highs in both organic farmland and retail sales, according to FiBL's survey covering 191 countries. Over 76.4 million hectares of organic farmland were recorded, with Oceania and Europe holding the largest shares. Australia, Argentina, and France lead in organic agricultural land area. Organic farmland now constitutes 1.6% of the world's agricultural land, with notable high shares in Liechtenstein, Samoa, and Austria. Organic farmland grew by 1.3 million hectares in 2021, with significant increases in China, France, and Spain, although Argentina saw a decrease. Organic crop groups and permanent crops, such as coffee and olives, also saw growth. The current market for organic food and drinks reached nearly 125 billion euros, with the US, Germany, and France as top markets. Organic regulations are advancing globally, with 74 countries implementing regulations and many setting up supportive policies for organic agriculture.

According to the "Organic Food Global Market Report 2021" by the Business Research Company, the global organic food market is projected to reach \$221.37 billion in 2021, with a compound annual growth rate (CAGR) of 9.7%. This growth can be attributed to companies adapting to the new normal after dealing with the effects of the COVID-19 pandemic. The report highlights that the organic food market is expected to continue its upward trajectory, reaching \$380.84 billion by 2025, with a CAGR of 14.5%. This indicates a strong demand for organic products as the food sector evolves post-pandemic. The growth of the organic food market is driven by factors such as increasing consumer consciousness about the environmental impact of conventional agriculture, concerns about food safety and quality, and the desire for healthier and more sustainable food options. However, there is also a growing trend of organic consumption in emerging markets, such as China and India.

#### ORGANIC FARMING IN INDIA

India has a rich tradition of organic farming, but the modern standards-based organic agriculture sector has significantly expanded recently, driven by increasing global demand, especially from Western markets. The

National Programme for Organic Production (NPOP), established in 2001, has been pivotal in formalizing and expanding organic agriculture in the country. NPOP serves as the framework for accrediting and certifying organic agricultural processes and has achieved international recognition, including agreements with the European Union, Switzerland, and USDA-NOP.

Managed by the Agricultural and Processed Food Products Export Development Authority (APEDA) under the Ministry of Commerce and Industry, the programme has seen the organic agriculture sector grow from covering 42,000 hectares in 2003-04 to 2.78 million hectares by 2019-20. The certification now includes almost all types of agricultural, horticultural, and non-food crops, as well as livestock, aquaculture, animal feed processing, mushroom production, seaweeds, aquatic plants, and greenhouse crops. Increasing awareness of organic food's benefits has spurred demand, with consumers willing to pay premium prices, supported by the National Standards for Organic Production (NSOP) to prevent fraud. India now has about 3.669 million hectares of organic land, including areas for conversion and wild harvest collecting. In 2019-20, India produced 2,745,625 tons of organic products, exporting 638,998 tons worth Rs 4,685.91 crore (US\$689.10 million), with major export destinations including the USA, European Union, Canada, Switzerland, Vietnam, Australia, New Zealand, and Japan. Organic processed food leads exports at Rs 2,149.32 crore (US\$316.08 million). India's total organic certified land is 1,492,611.02 hectares, about 1.07% of its total agricultural land, with Sikkim having the highest proportion of organic land at 96.94%, followed by Meghalaya at 14.21%. Notable states include Madhya Pradesh, Maharashtra, and Rajasthan, with the largest areas under organic cultivation. This substantial growth underscores India's strategic position in the global organic market, driven by regulatory support and consumer demand.

#### POTENTIAL OF ORGANIC FARMING IN NER

In terms of NER, Northeast India presents a unique agricultural scenario with both challenges and potential for growth. The region has traditionally practiced natural cultivation methods, relying on minimal use of chemical inputs. However, it lags behind in several key aspects, including organic certification and productivity challenges, post-harvest losses, inadequate infrastructure, and competition from larger states highlight the necessity for targeted interventions and strategic collaborations. In terms of organic certification, the North-East region contributes only a mere 0.15 percent to India's organic export value. This is primarily due to the limited proportion of land certified as organic in most states of the region. For instance, Arunachal Pradesh has just 0.12 percent of its land under organic certification, while Assam has 0.24 percent. Only Sikkim, Meghalaya, and to some extent, Assam actively participate in organic exports. Productivity challenges also persist in the region. Despite its rich biodiversity, favorable agro-climatic conditions, naturally fertile lands, and abundant rainfall, the North-East region's agricultural productivity remains lower than its inherent potential. The region contributes only 1.5 percent to India's total foodgrain production and is a net importer of food grains. This discrepancy arises from challenges such as the extensive 'Jhum' or 'Shifting' cultivation method, cereal-based land clearing practices, and limited utilization of organic inputs. However, the region also holds immense potential for the agriculture sector. It is known for its unique crops, including Assam lemon, Joha rice, medicinal rice, passion fruits, pineapple, ginger, black pepper, and large cardamom. Northeast India ranks as the fourth-largest orange producer and the world's top producer of large cardamom. The region's diverse agro-climatic zone and natural advantages make it an ideal candidate for the advancement of organic cultivation in the country. To tap into this potential and address the challenges, it is recommended to focus on cultivating high- value, lowvolume crops like spices, high-value, high-volume crops like fruits, and short-duration crops like vegetables. This strategic shift can help offset the region's yield loss and enhance productivity. Additionally, efforts should be made to improve organic certification rates, promote the use of organic inputs, and develop infrastructure for sorting, grading, and value addition in the organic value chain. By leveraging its unique crops, favorable agro-climatic conditions, and embracing organic farming practices, Northeast India has the potential to contribute significantly to India's agriculture sector. With targeted interventions and support from both the government and private sector, the region can overcome its challenges and create sustainable growth and livelihood opportunities in the agricultural sector. Nevertheless, with increasing government support, certification initiatives, and a rising global demand for organic products, NER stands poised to emerge as a key player in the organic market. NER's commitment to environmentally sustainable

practices, coupled with emerging trends like the adoption of blockchain technology in certification processes, presents avenues for growth and long-term sustainability. Furthermore, the presence of Geographical Indication (GI) tags and established brand recognition for certain products enhance their marketability and desirability.

Potential Organic Crops in the Region: The North Eastern Region (NER) of India is rich in various spices that are grown organically, focusing on large cardamom, ginger, and medicinal plants. The study conducted a comprehensive analysis of these crops, including their market potential, cultivation challenges, and opportunities for organic farming. Large cardamom, known as the "gueen of spices," is a valuable cash crop in the NER. The region is the largest producer of large cardamom in India, with Sikkim, Arunachal Pradesh, and Nagaland being the major producers. The study highlights the significant growth in the production and area of large cardamom in recent years, driven by strategic interventions in Arunachal Pradesh. The export scenario of large cardamom from India is also discussed, emphasizing the potential for market expansion and the advantage of establishing new marketing channels. Ginger is another prominent organic crop in the NER, particularly in Arunachal Pradesh and Assam. The study identifies the involvement of farmers in processing ginger and highlights the need for organized sectors to play a more significant role in advancing organic farming. The advantages of curing techniques and the potential for price realization by farmers are also discussed. The NER is rich in medicinal plants and herbs, offering opportunities for organic cultivation. The study also mentions specific plants such as Climbing Wattle, Calendula, Hatkora (Citrus Macroptera), Nadiya Ginger, Black Ginger, Sawthing Ginger, Lakadong Turmeric, and Reiek Turmeric. These plants have high demand and can contribute to the sustainable growth of agricultural production in the region. Overall, the study emphasizes the immense potential of large cardamom, ginger, and medicinal plants in the NER for organic farming.

**State-Wise Analysis:** The report provides a comprehensive state-wise analysis of organic farming in the North Eastern Region (NER) of India. It examines the contribution, challenges, and initiatives of each state in promoting organic farming. The analysis includes a comparative assessment of their efforts, land under certification, and export values.

**Arunachal Pradesh** has made significant progress in organic farming, with a total area of 13,114.12 hectares covered under the National Program of Organic Produce (NPOP). The state has focused on crops like ginger, mustard, and turmeric, with a notable percentage of farmers involved in processing these crops. However, the challenge lies in increasing the land under organic certification, as currently, only 0.12 percent of the state's land is certified as organic.

**Assam** has also shown promising growth in organic farming, with an area of 18,470.84 hectares covered under NPOP. The state has been actively involved in the cultivation of crops like ginger, turmeric, and mustard. However, the percentage of farmers involved in processing these crops is relatively lower compared to other states. Assam faces the challenge of increasing the land under organic certification, which currently stands at 0.24 percent.

**Manipur** has made significant strides in organic farming, with an area of 32156.00 hectares covered under NPOP. The state has focused on aromatic black rice, pineapple, and ginger cultivation. A high percentage of farmers are involved in processing aromatic rice, indicating value addition.

**Meghalaya** has shown considerable potential in organic farming, with a total area of 38,376.39 hectares covered under NPOP. The state has focused on crops like pineapple, areca nut, and banana. Pineapple cultivation has a significant percentage of farmers involved in processing. Meghalaya faces the challenge of increasing the land under organic certification, which currently stands at 0.03 percent.

**Mizoram** has made progress in organic farming, with an area of 13,038.89 hectares covered under NPOP. The state has focused on crops like chili, banana, and turmeric. Chili cultivation has a high percentage of farmers involved in processing. Mizoram faces the challenge of increasing the land under organic certification, which currently stands at 0.03 percent.

**Nagaland** has shown promising growth in organic farming, with a total area of 14,790.38 hectares covered under NPOP. The state has focused on crops like large cardamom, king chili, and rajma. Large cardamom cultivation has a significant percentage of farmers involved in processing. Nagaland faces the challenge of increasing the land under organic certification, which currently stands at 1.92 percent.

**Tripura** has made progress in organic farming, with an area of 6,521.31 hectares covered under NPOP. The state has focused on crops like aromatic rice, black pepper, and paddy. Aromatic rice, black pepper, and paddy cultivation have an equal percentage of farmers involved in processing. Tripura faces the challenge of increasing the land under organic certification, which currently stands at 0.08 percent.

**Sikkim** has made remarkable progress in organic farming and has become the world's first 100% organic state. Sikkim has converted 75,000 hectares of land into certified organic farms, which accounts for approximately 10% of the state's total geographical area. The state produces 800,000 tonnes of organic output, which represents around 65% of India's total organic production.

Key crops cultivated in Sikkim include large cardamom, ginger, oranges, kiwi, tea, and various mountain vegetables. Despite the significant progress in organic farming, the majority of farmers in Sikkim still practice subsistence farming, limiting the state's ability to achieve complete food security and tap into the potential of cross-border trade. Irrigation remains a major challenge for commercial farming in Sikkim, with only 14% of the net sown area benefiting from irrigation. The Sikkim Organic Mission, initiated in 2010, has played a crucial role in promoting organic farming. The government has provided support to farmers through the provision of seeds, fertilizers, training, and the establishment of dedicated market complexes known as the Sikkim Organic Market. Sikkim now produces 800,000 tonnes of organic output, which accounts for approximately 65% of India's total organic production.

In terms of export values, the report highlights that the entire North-East region collectively contributed only 0.15 percent to India's organic export value. Assam, Meghalaya, and Sikkim were the active states in organic exports, with a combined export value of 7.20 crores. The report emphasizes the need to increase the land under organic certification and enhance efforts in promoting organic farming in the region to boost export values.

Sustainable Farming Practices: The report delves into the topic of sustainable farming practices, highlighting traditional methods and their suitability for organic cultivation. It discusses various practices and their impact on sustainable agricultural growth. Traditional farming methods have been ingrained in the lives of communities in the North Eastern Region (NER) for centuries. These methods have been developed and refined over time to ensure a harmonious relationship with nature and promote sustainable agricultural practices. The report emphasizes that these traditional practices are well-suited for organic cultivation, as they align with the principles of organic farming, such as the use of organic manures, crop rotations, and biological pest control. One such traditional practice highlighted in the report is the cultivation of large cardamom. The study identifies the biophysical and management diversity in large cardamom farming in the Indian mountainous regions. Traditional knowledge systems have been passed down through generations, ensuring the sustainable cultivation of large cardamom. This practice not only preserves the biodiversity of the region but also contributes to the livelihoods of local communities. The report also discusses the importance of soil health management in sustainable farming practices. It highlights the efforts made by the Sikkim government to enhance soil health through soil testing and the use of natural fertilizers. These practices not only improve crop productivity but also contribute to the overall sustainability of the agroecosystem. Additionally, the report emphasizes the significance of water management in sustainable farming. It highlights the challenges faced by Sikkim in terms of irrigation due to its mountainous terrain and the drying up of mountain streams. The government has made efforts to expand the use of micro-irrigation, but more needs to be done to ensure adequate water supply for large-scale organic cultivation.

The report discusses the need for crop insurance in sustainable farming practices. While Sikkim has achieved 100% organic status, the absence of crop insurance poses a challenge for farmers in mitigating risks and ensuring their livelihoods. The report suggests that the inclusion of crop insurance schemes can provide a safety net for farmers and encourage them to adopt sustainable farming practices. The report highlights the importance of traditional farming methods and their suitability for organic cultivation. It emphasizes the need for sustainable practices such as soil health management, water management, and crop insurance to ensure the long-term viability of organic farming and contribute to sustainable agricultural growth in the North Eastern Region.

Role of Farmer Producer Companies (FPCs): The report examines the role of Farmer Producer Companies (FPCs) in the context of post-harvest management, crop processing, and marketing in different states of the North Eastern Region (NER). It explores the significance of FPCs, their contributions, and limitations in these areas. In terms of post-harvest management, the report highlights that FPCs in Mizoram and Tripura have shown commendable performance. All the sampled FPCs in Mizoram are actively engaged in grading, sorting, and packaging of finished products, while all FPCs in Tripura are involved in grading, sorting, cleaning, and polishing of finished products. However, FPCs in Arunachal Pradesh, Assam, Meghalaya, and Sikkim have relatively lower performance levels in post-harvest management. Insufficient training and capacity building of FPCs are identified as one of the primary reasons for their limited involvement in post-harvest management activities. The report reveals that the majority of training initiatives conducted for FPCs in the past three yearS were related to agricultural practices, value chain, and business operations. Training sessions were typically conducted at the village or block level. This indicates the need for more comprehensive and targeted training programs to enhance the skills of FPCs in post-harvest management. Regarding crop processing, the report provides insights into the involvement of farmers in different states. In Arunachal Pradesh, a significant number of farmers are engaged in processing ginger, followed by mustard and turmeric. In Assam, ginger processing is the primary focus, followed by turmeric and mustard. Manipur sees a high involvement of farmers in aromatic rice processing, while pineapple and ginger processing also have notable participation. Meghalaya primarily focuses on pineapple processing, followed by areca nut and banana. These findings highlight the diversity of crop processing activities and the importance of FPCs in supporting farmers in these processes. In terms of marketing, the report reveals that nearly half of the sampled FPCs are not actively involved in marketing their members' products. Instead, members often sell their products through alternative channels, bypassing the FPC. The involvement of FPCs in marketing varies among states, with Sikkim having the least engagement, followed by Manipur, Mizoram, and Tripura. In contrast, all sampled FPCs in Arunachal Pradesh actively participate in marketing their members' products. This indicates the need for FPCs to strengthen their marketing strategies and establish effective linkages with markets and buyers. Overall, the report highlights the significant role of FPCs in post-harvest management, crop processing, and marketing. It emphasizes the need for capacity building and training programs to enhance the performance of FPCs in these areas. Additionally, it underscores the importance of FPCs in supporting farmers in marketing their products and establishing linkages with markets. Strengthening the role of FPCs can contribute to the overall growth and development of organic farming in the North Eastern Region.

Identified Trading Hubs: The report identifies several key trading hubs in the North Eastern Region (NER) of India and highlights their significance in regional trade. These trading centers play a crucial role in the economy and the organic market of the region.

Barpeta has emerged as a significant trading center for the vegetable trade in the NER. It serves as a gathering point for vegetables sourced from various parts of the region. The development of a local market (mandi) in Barpeta has facilitated the trade of vegetables, and even the Guwahati market sources its products from this hub. The presence of this trading center has contributed to the growth of the vegetable market in the region.

**Mankachar** is another important trading center, particularly for black pepper in the NER. A majority of the black pepper trade activities occur in this area. The trading hub in Mankachar has facilitated the trade of black pepper, connecting producers from the region with buyers from other parts of India.

**Tura** has emerged as a trading hub for cashew and cashew-related products in the NER. The trading activities in Tura have contributed to the growth of the cashew market in the region. This trading center serves as a platform for cashew producers to connect with buyers and expand their market reach.

**Siliguri,** located in West Bengal near the border of the NER, has become a primary trading center for large cardamom. While the trade center for large cardamom used to be in Delhi, Siliguri has taken over as the main hub due to its advantageous location and the existence of an enabling ecosystem. Siliguri serves as a marketplace for large cardamom from the NER, connecting producers with buyers and facilitating trade.

These trading hubs have a significant impact on the economy and the organic market in the NER. They provide a platform for producers to sell their products and connect with buyers from within the region and beyond. The presence of these trading centres enhances market access for organic products, stimulates trade, and contributes to the overall growth of the organic market in the NER. By facilitating the aggregation and distribution of organic produce, these trading hubs play a crucial role in ensuring the availability of organic products in the market. They create opportunities for farmers and traders to participate in the organic value chain, promoting sustainable livelihoods and economic development in the region. Overall, the identified trading hubs in the NER have become important nodes in the regional trade network, driving the organic market and contributing to the economic growth of the region.

**Financing Options:** The report explores financing options in the context of Northeast India, with a specific focus on blended finance models. These models combine various financing options, including philanthropic funds, grants, public resources, and private investments, tailored to specific projects. Blended financing options can be a highly suitable approach in underserved regions like the Northeast of India. These options involve sharing project-related risks among various partners, distributing the risks and aligning the interests of different investors. Blended finance structures can help ensure that projects meet their social, environmental, and financial objectives, fostering an inclusive financing model for small and marginal farmers, as well as small and medium enterprises.

In the context of the agriculture sector, private capital has gained significant attention, as credit is seen as a crucial input by all actors in the agriculture value chain. While the government has traditionally played a central role in providing credit to the agricultural sector, private finance is vital for expanding access to credit and meeting the growing demand. Blended finance represents a valuable avenue for attracting private investments and addressing disparities in investment and access to agricultural finance. In recent years, there has been a notable increase in investments in the social sector in India, including the agriculture technology sector. However, a significant challenge is that most of this funding is directed towards large, commercially focused business models, leaving small and marginalized farmers and regenerative agriculture with relatively less investment. Moreover, the geographical distribution of investment remains limited to specific areas within India. To address these disparities, various types of finance are currently in use, such as result-based finance, debt finance, and advanced market commitment-based financing. Overall, blended financing options, along with targeted investment in key crops, can play a pivotal role in driving innovation within the organic value chain system in Northeast India. These financing options can support infrastructure projects, enhance access to credit for farmers and enterprises, and promote sustainable agricultural practices in the region.

The study also includes a business plan for key crops in the Northeast Region, including pineapple, lemon, orange, large cardamom, and chilli. This plan outlines strategies for production, marketing, and financials for each crop, aiming to maximize their potential in the region.