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Research Article

The Role of Organic Farming in Promoting Entrepreneurship in North East India: A Literature Review

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ABSTRACT

Organic farming has emerged as a vital agricultural practice globally, focusing on sustainability, environmental conservation, and health benefits. In India, where agriculture is a cornerstone of the economy, organic farming is gaining momentum as a sustainable alternative to conventional farming. North East India, with its distinctive geographical and cultural landscape, offers significant potential for organic farming to drive entrepreneurship and economic development. This literature review examines the impact of organic farming on entrepreneurship development in North East India, outlining the region's challenges and opportunities. The review synthesizes current research, identifying key themes, gaps, and future research directions. Recent studies from the broader Indian context provide additional insights into the evolving landscape of organic farming and its implications for entrepreneurship, highlighting successes and challenges from other regions that can inform practices in North East India.

Keywords: Organic farming, entrepreneurship development, North East India, sustainable agriculture, economic development

Introduction

North East India, comprising eight states – Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, and Tripura – boasts rich biodiversity and traditional agricultural practices. The region's unique topography, with its lush green landscapes, hills, and valleys, provides a fertile ground for diverse agricultural activities. Organic farming, defined by the exclusion of synthetic inputs and the use of natural processes to enhance soil fertility and pest control, aligns well with the region's ecological and socio-cultural fabric. The Indian context adds another layer of significance to the organic farming movement. India is an agrarian economy where a large proportion of the population relies on agriculture for their livelihood. The Green Revolution of the 1960s and 1970s, which introduced high-yielding varieties and chemical fertilizers, significantly increased agricultural productivity but it led to adverse environmental and health impacts (Singh, 2020). In response, there has been a growing shift towards organic farming as a means to achieve sustainable agricultural practices, environmental conservation, and improved public health.

North East India has emerged as a pivotal region for the organic movement in India. States like Sikkim have been declared fully organic, and others are rapidly transitioning towards organic practices (Sharma, 2021). The regional governments, along with central government initiatives such as the Mission Organic Value Chain Development for North East Region (MOVCDNER), have been promoting organic farming through policy support, financial incentives, and training programs (Government of India, 2018). Organic farming in North East India is not only a means to sustainable agriculture but also a catalyst for entrepreneurship development. The region's farmers have traditionally practiced organic methods, using indigenous knowledge to manage soil fertility and pests naturally (Baruah, 2022). By formalizing these practices and connecting farmers to organic certification systems, there is a significant opportunity to enhance market access and income. Recent studies highlight the potential of organic farming to spur entrepreneurial activities. Sarma (2022) points out that organic farming can drive the growth of small and medium-sized enterprises (SMEs) engaged in the production, processing, and marketing of organic products. Gogoi (2023) emphasizes the role of organic farming in promoting rural entrepreneurship, particularly among women and marginalized communities, by creating value-added products and facilitating direct market linkages.

The socio-cultural context of North East India further supports the adoption of organic farming. The region's indigenous communities have a deep connection with nature and a history of sustainable agricultural practices (Longchar, 2017). Leveraging this traditional knowledge can enhance the sustainability and resilience of organic farming systems. Moreover, the environmental benefits of organic farming are particularly relevant in North East India. The region is prone to soil erosion, deforestation, and loss of biodiversity. Organic farming practices, which emphasize soil health, crop diversity, and ecological balance, can mitigate these environmental challenges (Gogoi, 2017; Sarmah, 2019). Despite its potential, the adoption of organic farming in North East India faces several challenges. Market access, infrastructure, knowledge dissemination, and financial support are critical areas that need attention (Bora, 2018; Kumar, 2019). Addressing these challenges requires coordinated efforts from government agencies, non-governmental organizations, and the private sector. Recent research (Sarma, 2022; Gogoi, 2023) also emphasise the importance of organic farming in promoting sustainable agriculture and rural entrepreneurship, offering valuable insights into its implementation and impact.

This literature review aims to provide a comprehensive understanding of how organic farming can spur entrepreneurial activities in North East India, contributing to the region's economic development. By synthesizing current research and highlighting key themes, gaps, and future research directions, this review seeks to inform policymakers, practitioners, and researchers about the opportunities and challenges of promoting organic farming and entrepreneurship in this unique region.

Review of Previous Literatures

Organic farming offers significant market opportunities due to the increasing demand for organic products both domestically and internationally. India saw a notable rise in demand for organic products driven by consumer awareness of health and environmental sustainability. In 2018, India’s organic food market was valued at approximately USD 177.14 million, with substantial growth projections (ASSOCHAM-EY, 2018). North East India, with its natural inclination towards organic farming, can cater to niche markets, generating higher incomes for farmers (Sharma et al., 2016). This region’s diverse agro-climatic conditions are ideal for high-value organic crops like tea, spices, and medicinal plants. Research by Das (2023) highlights the potential for exporting organic tea and spices from this region to meet global demand. The Sikkim Organic Mission has positioned Sikkim as a leader in organic farming with substantial exports to international markets, while organic tea from Assam and unique spices from Mizoram and Manipur have carved out niche markets in Europe and the United States, reflecting strong export potential. Organic farming creates employment opportunities, particularly in rural areas. Government schemes such as the Paramparagat Krishi Vikas Yojana (PKVY), provided training and financial support, enhancing employment (Singh, 2018). Sharma (2022) notes that organic farming cooperatives have significantly increased rural employment in Assam and Meghalaya by involving farmers in organic production and related activities like vermicomposting, organic certification, and direct marketing, thereby increasing job opportunities.

Research indicates that organic farming can offer more stable income streams compared to conventional farming due to premium prices and reduced input costs (Das, 2019). The economic benefits of organic farming in India became increasingly recognized during recent time. Organic products commanded premium prices, contributing to higher and more stable incomes for farmers. Reduced dependency on costly chemical inputs further stabilized income. Bora (2021) confirms that farmers practicing organic agriculture in Manipur and Mizoram experience less income volatility due to price premiums lower input costs, and better resilience against market fluctuations. Integrating traditional farming knowledge with modern organic practices can enhance productivity and sustainability. Indigenous communities in North East India possess valuable agricultural knowledge that can be leveraged in organic farming (Longchar, 2017). These communities have practiced sustainable agriculture for centuries using methods such as shifting cultivation, mixed cropping, and organic manure. Recognizing and incorporating this traditional knowledge has been pivotal in promoting organic farming in the region. Government initiatives like the National Mission for Sustainable Agriculture (NMSA) emphasized the importance of traditional knowledge. Studies by Baruah (2022) highlight effective traditional pest management techniques and soil conservation practices, such as using neem leaves for pest control and cow dung for soil fertility, integrated into modern organic farming.

Organic farming initiatives often encourage community participation, fostering social cohesion and collective entrepreneurship. This approach has led to cooperative businesses and community-supported agriculture (CSA) models (Mehta, 2017). Between 2010 and 2020, numerous community-based organic farming projects flourished in North East India. The formation of cooperatives and farmer producer organizations (FPOs) was promoted by state and central governments. Singh (2023) illustrates successful community-based organic farming projects in Nagaland and Sikkim, which improved livelihoods and social empowerment. Various government schemes and policies have been crucial in promoting organic farming across India, especially in North East India. The Mission Organic Value Chain Development for North East Region (MOVCDNER), launched in 2015, aims to develop certified organic production linked to consumers. This mission provides

financial assistance for organic input production, certification, and processing infrastructure (Government of India, 2018). The Paramparagat Krishi Vikas Yojana (PKVY) provided resources and training for adopting traditional organic practices. Kumar (2022) also noted that MOVCDNER has been instrumental in increasing organic farming acreage and improving farmer incomes in North East India. Sikkim's achievement as India's first fully organic state in 2016 serves as a model for other states in the region.

Certification of organic products is crucial for accessing premium markets. The Agricultural and Processed Food Products Export Development Authority (APEDA) oversees organic certification under the National Programme for Organic Production (NPOP). During the last decade, efforts were made to streamline certification procedures, making them more farmer-friendly. The Participatory Guarantee System (PGS) provided an alternative to third-party certification, benefiting smallholder farmers (Baruah, 2020). Mehta (2023) discusses the benefits and challenges of organic certification for smallholder farmers in North East India, emphasizing the need for continued support from government and NGOs.

Organic farming promotes biodiversity by avoiding synthetic chemicals and encouraging crop diversification, which is especially beneficial in North East India with its rich biodiversity. Studies show that organic farming leads to a resurgence of indigenous plant species and provides refuges for beneficial organisms like pollinators and soil microbes (Sarma, 2023). Using traditional seeds and mixed cropping systems helps maintain genetic diversity, crucial for agricultural adaptability and sustainability. Organic farming also improves soil health through organic amendments, increasing soil organic matter and microbial activity (Sarmah, 2019). Healthier soils retain water better, reducing irrigation needs and making farming systems more resilient to drought, particularly important in the hilly terrains of North East India. Overall, organic farming's environmental sustainability benefits, including biodiversity conservation and improved soil and water health, are vital for long-term agricultural productivity and ecological balance in North East India. These benefits highlight the need for continued support and expansion of organic farming practices to promote sustainable development in the region.

Objectives

The primary objectives of the present research are i) to analyse the economic impact of organic farming on entrepreneurship development in North East India; ii) to explore the role of traditional knowledge and community participation in promoting organic farming; iii) to examine the effectiveness of government policies and certification processes in supporting organic farmers; and iv) to assess the environmental benefits of organic farming practices in terms of biodiversity conservation and soil health.

Methodology

This present review involved a comprehensive analysis of academic journals, reports, and case studies focusing on organic farming and entrepreneurship particularly in North East India. Databases such as Google Scholar, JSTOR, and PubMed were used to collect relevant literature published between 2015 and 2023. The selected studies were categorized based on themes such as economic impact, socio-cultural factors, policy frameworks, and environmental sustainability. Keywords included "organic farming North East India," "entrepreneurship development," "sustainable agriculture," and "government policies." Both qualitative and quantitative studies were included to provide a holistic understanding of the subject.

Analysis and Discussion

Economic Impact:

Market Opportunities - In the last decade, India experienced a notable surge in the demand for organic products, both domestically and internationally, driven by heightened consumer awareness regarding health and environmental sustainability. The organic food market in India exhibited robust growth, reaching approximately USD 177.14 million in 2018 (ASSOCHAM-EY, 2018). North East India, endowed with conducive agro-climatic conditions, stands poised to capitalize on this trend, offering significant market opportunities for organic produce. Sharma et al. (2016) underline the region's potential to cater to niche markets, particularly in high-value organic crops like tea, spices, and medicinal plants. Recent research by Das (2023) accentuates North East India's capacity to export organic tea and spices, which enjoy substantial demand globally. Notably, initiatives like the Sikkim Organic Mission have positioned Sikkim as a frontrunner in organic farming, facilitating substantial exports to international markets. The organic tea from Assam and the unique spices from Mizoram and Manipur have secured niche markets in Europe and the United States, reflecting the region's robust export potential.

Employment Generation - Organic farming emerges as a significant contributor to employment generation, particularly in rural areas, during the period under review. Government initiatives such as the Paramparagat Krishi Vikas Yojana (PKVY) played a pivotal role by providing training and financial support to

farmers, thereby enhancing employment opportunities. Singh (2018) underscores the role of organic farming cooperatives in significantly augmenting rural employment rates in Assam and Meghalaya. These cooperatives not only engage farmers in organic production but also involve them in ancillary activities like vermicomposting, organic certification, and direct marketing, thus creating a diverse range of employment opportunities. Furthermore, the shift from conventional to organic farming practices typically entails a higher demand for labor, thereby further bolstering job creation in rural areas. Sharma (2022) highlights the positive impact of organic farming cooperatives in enhancing rural employment rates, signaling a tangible socio-economic upliftment through organic entrepreneurship.

Income Stability - Organic farming emerges as a harbinger of income stability for farmers, offering more consistent revenue streams compared to conventional farming practices. Das (2019) indicates that the premium prices commanded by organic products, coupled with reduced input costs, contribute to enhanced and stable incomes for farmers. This period witnessed a growing recognition of the economic benefits of organic farming in India, as evidenced by reduced income volatility among organic farmers. Bora's study (2021) corroborates these findings, indicating that organic agriculture practitioners in Manipur and Mizoram experience less income volatility owing to price premiums, lower input costs, and better resilience against market fluctuations. Moreover, the emphasis on biodiversity and soil health inherent in organic farming practices fosters more sustainable agricultural systems, thereby reducing the risk of crop failures and income instability.

Thus, the economic impact of organic farming in North East India during the last decade was profound, offering significant market opportunities, employment generation, and income stability. The positive trajectory observed underscores the transformative potential of organic farming in reshaping the region's agricultural landscape and fostering holistic economic development. However, addressing challenges related to market access, infrastructure, and policy support remains imperative to fully harness the benefits of organic entrepreneurship.

Socio-Cultural Factors:

Traditional Knowledge - The integration of traditional farming knowledge with modern organic practices emerges as a pivotal driver of productivity and sustainability in North East India. Indigenous communities in the region possess invaluable agricultural wisdom, which serves as the bedrock for organic farming initiatives (Longchar, 2017). This period witnessed a resurgence of interest in traditional agricultural practices across India, propelled by a broader sustainability movement. Government initiatives such as the National Mission for Sustainable Agriculture (NMSA) underscored the importance of traditional knowledge in fostering sustainable farming practices. Baruah's study (2022) highlights the efficacy of indigenous pest management techniques and soil conservation practices, which have been seamlessly integrated into modern organic farming protocols. For instance, practices like the use of neem leaves for pest control and cow dung for soil fertility have found renewed relevance in the context of organic agriculture. The Northeast Organic Farming Movement (NEOFM) played a pivotal role during this period by documenting and promoting indigenous agricultural practices. By facilitating knowledge exchange between traditional farmers and agricultural scientists, the movement ensured the preservation and adaptation of valuable traditional practices to modern organic farming systems.

Community Participation - Community participation emerges as a cornerstone of successful organic farming initiatives, fostering social cohesion and collective entrepreneurship. Community-based organic farming projects flourished in North East India during the last decade, underpinned by initiatives like the Small Farmers' Agribusiness Consortium (SFAC) and the North Eastern Region Community Resource Management Project (NERCORMP). These projects emphasized the formation of cooperatives and farmer producer organizations (FPOs) to enhance the bargaining power of small farmers and facilitate better market access. Singh's case studies (2023) illustrate the efficacy of community-based organic farming projects in Nagaland and Sikkim, highlighting the transformative potential of collective entrepreneurship. The Chakhesang Women's Cooperative Society in Nagaland and community-supported agriculture (CSA) models in Sikkim serve as notable examples of successful community-driven organic farming initiatives. Moreover, initiatives like the Participatory Guarantee System (PGS) for organic certification, supported by the National Centre of Organic Farming (NCOF), played a crucial role in North East India. By relying on community participation for certification, the PGS ensured a cost-effective and locally adaptable certification process for small-scale farmers, thereby democratizing access to organic markets.

To sum up, socio-cultural factors such as traditional knowledge and community participation significantly influenced the success of organic farming in North East India. The integration of indigenous practices with modern organic methods fostered sustainability, while community-driven approaches spurred collective entrepreneurship and social cohesion. The observed trends underscore the potential of organic farming to drive socio-economic development in the region, leveraging its rich cultural heritage and community ties.

Policy Frameworks:

Government Initiatives - Government initiatives emerged as key drivers in promoting organic farming across India, with a notable focus on North East India. The Mission Organic Value Chain Development for North East Region (MOVCDNER), launched in 2015, played a pivotal role in enhancing organic farming acreage and farmer incomes in the region. Other schemes like the National Programme for Organic Production (NPOP) and the Paramparagat Krishi Vikas Yojana (PKVY) provided crucial support for farmers transitioning to organic practices. The success of initiatives like MOVCDNER is exemplified by Sikkim's transformation into the first fully organic state in India. Comprehensive government support, policy implementation, and community involvement were instrumental in achieving this milestone, setting a precedent for other states in the region.

Certification and Standards - Certification of organic products emerged as a critical aspect of accessing premium markets, both domestically and internationally. However, the certification process posed challenges for small farmers due to its complexity and cost. The establishment of regional certification bodies and initiatives like the Participatory Guarantee System (PGS) played a vital role in simplifying the certification process and making it more accessible to smallholder farmers. Baruah's study (2020) underscores the role of regional certification bodies in reducing barriers to certification for small farmers. These bodies provided localized support and resources, helping farmers navigate the certification process more efficiently. By being closer to the farming communities, regional bodies could offer tailored assistance, conduct on-site inspections, and reduce the logistical and financial burdens associated with certification. The Participatory Guarantee System (PGS), specifically, has been a game-changer for smallholder farmers in North East India. PGS relies on a peer-review process where farmers in a community collectively certify each other's produce. This system is cost-effective, encourages mutual trust, and enhances community engagement. PGS not only reduces the costs associated with third-party certification but also ensures that the standards are locally relevant and easily understood by the farmers. Mehta's research (2023) highlights both the benefits and challenges of organic certification for smallholder farmers in North East India. While certification opens doors to premium markets and higher incomes, the process can be daunting for those lacking the necessary resources and knowledge.

Continuous support from government and non-governmental organizations is crucial to address these challenges. Training programs, financial assistance, and the development of infrastructure are essential to facilitate smoother certification processes and empower farmers to fully capitalize on the benefits of organic farming. Furthermore, the government's role in promoting organic certification has been crucial. Initiatives like the National Programme for Organic Production (NPOP) and MOVCDNER include components that provide financial assistance for certification costs and support the establishment of regional certification bodies. These efforts have facilitated the growth of the organic sector in North East India, ensuring that small farmers can participate in and benefit from the organic market. In conclusion, the establishment of regional certification bodies and the introduction of systems like PGS have significantly reduced the barriers to organic certification for small farmers in North East India. By simplifying the certification process and making it more accessible, these initiatives have enabled smallholder farmers to access premium markets, thereby enhancing their incomes and contributing to the overall growth of the organic farming sector in the region.

Conclusion

Organic farming presents a significant opportunity for entrepreneurship development in North East India. By leveraging the region's ecological strengths and cultural practices, organic farming can create sustainable economic opportunities, improve livelihoods, and protect the environment. However, overcoming challenges related to market access, knowledge dissemination, and financial support is crucial. Future research and policy efforts should focus on building a supportive ecosystem for organic farming and entrepreneurship in this region. The recent review of organic farming in North East India highlights remarkable progress and opportunities in market growth, employment generation, income stability, and socio-cultural integration. The increasing consumer demand for organic products, driven by greater awareness of health and environmental sustainability, has significantly expanded the organic food market, reaching a valuation of approximately USD 177.14 million in 2018. North East India, with its favourable agro-climatic conditions, is well-positioned to benefit from this trend, especially in high-value organic crops such as tea, spices, and medicinal plants. Successful initiatives like the Sikkim Organic Mission have underscored the region's potential, positioning it as a leader in organic exports. Organic farming has been a major contributor to rural employment, supported by government schemes like the Paramparagat Krishi Vikas Yojana (PKVY). These initiatives have provided essential training and financial support, creating more job opportunities in organic production and related activities. Additionally, organic farming offers more stable income streams for farmers, thanks to premium prices and reduced input costs, thereby reducing income volatility and enhancing economic resilience.

Integrating traditional farming knowledge with modern organic practices has been crucial for enhancing productivity and sustainability. Indigenous communities in North East India possess valuable agricultural knowledge that has been effectively incorporated into organic farming practices. This synergy between traditional and modern methods has improved agricultural outcomes while promoting environmental sustainability through biodiversity conservation and better soil health. Community participation has been a key factor in the success of organic farming initiatives, fostering social cohesion and collective entrepreneurship. Community-based projects and the formation of cooperatives and farmer producer organizations have strengthened the bargaining power of small farmers, improved market access, and empowered local communities. Government initiatives and policy frameworks have played a vital role in promoting organic farming. Programs like the Mission Organic Value Chain Development for North East Region (MOVCDNER) and the National Programme for Organic Production (NPOP) have provided crucial support for farmers transitioning to organic practices. Certification processes, particularly through the Participatory Guarantee System (PGS), have made organic certification more accessible to smallholder farmers, opening up premium markets and enhancing incomes.

Overall, the literatures saw significant positive impacts of organic farming in North East India, offering substantial market opportunities, employment generation, and income stability. The integration of traditional knowledge and community participation has driven sustainable development, while government support has been essential in facilitating these advancements. Continued efforts to address challenges related to market access, infrastructure, and policy support will be necessary to fully realize the benefits of organic farming and promote comprehensive socio-economic development in the region.

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