
Market Linkages for Smallholder Farmers in Organic Agricultural Produce: A Comprehensive Review

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ABSTRACT

The review paper examines the impact of market linkages on organic agricultural production among smallholder farmers. The aim of the research is to facilitate access to regional and international markets and to enhance the development of effective market linkage between organic producers, thus promoting market sustainability and strengthening economic ties within and among local businesses. By connecting farmers to markets, information, and inputs, this work seeks to improve their livelihoods. A comprehensive review integrates various sources of information and perspectives, allowing for a deeper understanding of the subject. The study employs a structured and potential-focused approach to outline the status of organic production and market linkages that foster rural development. It provides insights into the opportunities available for organic farmers through an examination of various research papers and case studies. Key objectives include identifying the challenges face by organic farmers in establishing market linkages, studying the current scenario of organic farming practices, and analyzing the implications for policies regarding organic implementation. Furthermore, it synthesizes key findings from a broad spectrum of studies and theoretical perspective. One significant issue highlighted is the inaccessibility of quality inputs, market information, certification, and other socio-economic challenges. Weak market linkages lead to market inefficiency, missed opportunities, and a reliance on imported goods and services. Therefore, well-informed government support policies, the empowerment of smallholders, and collaboration between the private sectors are essential for nurturing a sustainable agricultural ecosystem. The research identifies a gap stemming from the lack of specificity in prior studies research on organic market linkages, alongside inadequate research and insufficient data. The originality of the research lies in its focus on addressing real-world challenges related to organic market linkages and its pursuit of innovative marketing strategies for organic producers.

KEYWORDS: Market linkage, Organic Farming, Smallholder, APEDA and NPOP

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1. Introduction:

1.1. Scenario at the global level:

Organic farming originated in the United Kingdom in 1930, and certified organic produce has been available since the early 1970s (Heckman, 2006). The establishment of a robust marketing network that connect farms, inputs processing, final product distribution, and organic produce management through participation of NGOs or other associations is recommended. Additionally, stringent organic certification practices and procedures have been significant factors contributing to the growth of organic farming. A recognized and trustworthy marketing framework would enhance the market network in the future (Vogt, 2007). As a growing movement, organic farming is witnessing an increasing global demand of organic products. Many countries have implemented certification programs to regulate and promote organic farming practices (Kononets et al., 2023).

1.2. India's Current Status of Organic Farming:

India ranks 10th among the world's top countries in terms of land area certified for organic farming. The leading states contributing to this organic cultivation are Madhya Pradesh, Rajasthan, and Maharashtra, which together account for half of the total area. The country has substantial potential for the producing a wide variety of organic products. Since 2005, the International Competence Centre for Organic Agriculture (ICCOA) has established a platform that fosters networking among stakeholders in the organic sector. In the northeastern region of India, which comprises eight states, the total area under organic certification in the year 2013-14 was 4.72 million hectares, with the northeast accounting for approximately 69.45 thousand hectares (APEDA, 2013) and (Avinash & Batra, 2023). The Ministry of Development of North Eastern Region (DoNER), the North East Council (NEC), and the government of Meghalaya have recognized the necessity to develop the NERACE app, aimed at enhancing the connection between farmers and sellers in Northeast India. The NERACE app serves as a digital platform that links farmers to the global market, facilitating price negotiations and the sale of agricultural products. Its primary objectives are to improve accessibility, generate income for farmers, promote entrepreneurship, and foster venture creation. Notable features of the NERACE app include a multilingual helpline offering support in English, Hindi, Bengali, Assamese, Khasi, Manipuri, Nepali, and Mizo, catering to farmers from diverse backgrounds in their market development efforts. This innovative approach could empower small-scale farmers to engage in competitive markets, achieve self-reliance in market establishment, and contribute to economic development (NEC, 2024).

1.3. Current scenario of organic farming in Meghalaya:

Meghalaya possesses significant potential for advancing organic farming, being an ideal mountain state with a large number of smallholder farmers. The state aims to convert 100,000 hectares of land as part of the Meghalaya State Organic Mission for the period 2024-28, adhering to the guidelines of the National Program for Organic Production (NPOP). This initiative will facilitate organic cultivation and certification, managed by the Agricultural and Processed Food Products Export Development Authority (APEDA), which oversees the review, handling, storage, and transportation of organic produce. Approximately six service providers have been enlisted to support the certification processes and the active implementation of organic production. Additionally, the Meghalaya Natural Organic Society for Livelihood and Innovation in Agriculture (MEGNOLIA) has been established to further the objectives of the Meghalaya Mission Organic. (Department of Agriculture and Farmers welfare, 2024). Economic incentives have significantly influenced the willingness of small-

scale farmers in Meghalaya to adopt organic farming practices to tap to expanding markets (Munda et al., 2007). Furthermore, the Ministry of Agriculture and Farmers' Welfare launched the central sector scheme MOVCDNER in the North Eastern Region, aimed at promoting certified organic production through a value-chain approach that connects farmers directly with consumers (Department of agriculture, cooperation and farmer's welfare, 2018).

1.4. Important terminologies related to the study:

Market linkage on organic production: According to the Food and Agricultural Organization (FAO), market linkages represent a strategic approach to enhancing productivity by facilitating collaboration among market stakeholders to address challenges and devise innovative solutions to cater to the needs of smallholder farmers. These linkages significantly enhance the market accessibility of organic produce, enabling organic producers to achieve improved productivity and forge stronger connections within the market. The establishment of robust market linkages is deemed essential for smallholders, particularly given their diverse needs, which present challenges for government agencies in delivering targeted, high-quality support services. This underscores the critical role of improved connectivity in supply chains and highlights the strategies required to bolster market linkages, especially in the context of many smallholder farms being underdeveloped and inadequately integrated into regional, national, and global markets.

Smallholder farmers: In the Indian context, smallholders are typically identified as small-scale farmers who cultivate a limited land area, generally less than 2 hectares. They predominantly rely on family labor to produce crops for both subsistence and commercial purposes, as defined by the FAO (2013). This characterization emphasizes the unique challenges faced by smallholder farmers in achieving economic viability and market participation.

National Program for Organic Production (NPOP): NPOP is a national initiative introduced by the Ministries of Industries and Commerce in the Government of India aimed at promoting organic farming. This program establishes a framework for implementing the National Standards for Organic Production, which includes detailed protocols regarding the systems, criteria, and processes for the accreditation of inspection and certification bodies. The overarching goal of NPOP is to bolster organic farming and processing, to accredit certification schemes for Certification Bodies seeking recognition, and to aid in the certification of organic products in accordance with the National Standards for Organic Products.

Agricultural and Processed Food Products Export Development Authority (APEDA): APEDA is an institution established by the Government of India under the Agricultural and Processed Food Products Export Development Authority Act of 1985. Its primary focus is on market development and the enhancement of infrastructure and quality to stimulate the export of agricultural products. APEDA provides financial assistance to registered exporters through various components of the scheme, including Market Development, Infrastructure Development, and Quality Development. The authority plays a pivotal role in promoting and developing exports for scheduled products, including fruits, vegetables, and their processed derivatives.

2. Methodology:

A systematic and structured evaluation approach is employed to identify and assess the most relevant studies concerning the market linkages on organic agricultural produce. The quality and reliability of the research sources have undergone a rigorous assessment through thematic and content analysis. The data used includes academic publications, with Google Scholar serving as an effective tool for finding academic resources, published statistics, and secondary data analyses, such as government reports and insights from market research organizations. The investigation is qualitative, focusing exclusively on organic farmers and producers while excluding conventional counterparts. A comprehensive search strategy is formulated, incorporating case studies as a research method and drawing upon pertinent literature and related concepts.

The main objectives of the research:

1. To identify the challenges that organic farmers face in developing market linkages that provide farmers with access to markets, information, and inputs that can lead to better prices, high-quality produce, and increased income.
2. To identify ways that farmers connect with buyers to sell their produce;
3. To study the current scenario of organic farming practices.
4. To analyze its implications for organic implementation policies and synthesize the key findings from a wide range of studies and theoretical perspective.

3. Review and findings:

3.1. Problems of organic farming:

According to Morison et al., (2005), the diversification of activities involved in the production and marketing of organic produce has resulted in increased labor costs for farmers. The heightened financial burden can hinder small-scale farmers from achieving their production targets, primarily due to the unpredictable nature of market dynamics and the unforeseen expenses inherent in organic farming practices. Bello, (2008) highlights a significant barrier to the implementation of organic farming systems in developing countries: the lack of technical expertise. This deficiency further complicates the efforts of farmers striving to transition to organic methods. Macinnis, (2016) emphasized that minimizing transaction costs is essential for maintaining organic production standards, suggesting that efficient market strategies could help alleviate some of the financial pressures faced by organic producers. Consumer behaviour towards organic products has also been affected by various constraints, as noted by Mohanty et al., (2015). In their study of Meghalaya, they identify poor market linkages, price discrimination, lack of consumer awareness, and inadequate product development as key factors influencing purchasing decisions. Price premiums for organic products now range from 25% to 70% higher than their conventional counterparts added Smoluk-Sikorska et al., (2024), reflecting a market trend that nonetheless imposes significant challenges for producers. The high cost of organic produce is attributed to several factors, including training costs, inventory management costs, processing expenses, and costs associated with labelling, packaging, logistics and distribution. De la Cruz et al., (2023) further indicate that lower yields of organic crops compared to conventional systems pose a critical challenge in meeting market demand. Additionally, Meena et al., (2020) assert that insufficient government financial support and poor market linkages are problematic for the organic production and cultivation processes.

which are vital for enhancing the viability of organic farming systems. In specific region such as Finland, Kujala et al., (2022) note the increasing reliance on agricultural subsidies as a means of sustaining organic farming within the market. This reliance, however, is complicated by uneven regional disturbances, price variability affecting agricultural subsidies, the separation of animal and crop production, and consumer price sensitivity. Furthermore, Kumara & Biswas, (2010) argue that government policies have inadvertently encouraged farmers to depend on external inputs, thereby increasing costs and altering producer perceptions on organic farming, which presents additional environmental challenges. Overall, while organic farming holds the potential for sustainability and ecological benefits, various economic technical, and policy-related challenges must be addressed to ensure its success and growth in both developing and developed regions.

3.2. Prospects of organic farming:

Organic farming practices promote the development of socio-economic groups, particularly youth and women, within cocoa farming systems to enhance the income and livelihood of rural communities, especially in West Africa, according to Jaganathan et al., (2015). Mitra & Devi, (2016) identified the National Program for Organic Production (NPOP) as the certification system that bolsters the market penetration and accessibility of organic products from small-scale farmers, ensuring the trusted production of these goods. Baker et al., (2020) highlighted the significance of pest control and increased biodiversity, which serve as a solution to environmental degradation and contribute directly to the enhancement of soil fertility and health. Additionally, Wekeza et al., (2022) suggested that the organic food market plays a crucial role in food security regulation, leading to the development of export and import channels for organic products and encouraging neighboring countries to adopt the organic farming practices. Raj et al., (2024) also noted that the COVID-19 pandemic has heightened consumer interest in nutritious foods to promote individual well-being and strengthen immune system. This shift has led to greater acceptance of organic food products, perceived as tastier, healthier, and of higher quality, ultimately improving public health and the welfare of small-scale farmers through better market accessibility. D. Singh et al., (2018) identified key areas for the conservation of natural resources, emphasizing that the sustainable use of resources, food safety, soil health, organic manures, bio-fertilizers, bio-pesticides, and crop residues has significantly contributed to the growth of the agricultural sector in the context of organic farming implementation.

3.3. Case studies:

Case I: Certified organic agriculture in Mexico- Gómez Tovar et al. (2005)

The connection to markets and certification practices among both large and small producers play a vital role in ensuring products adhere to established quality standards. The two models under examination include:

- Indigenous smallholders of Southern Mexico engage in low-input, process-oriented organic farming, employing strategies such as document reviews and group inspections, as well as assessing their on-farm capacity to produce organic inputs.
- Conversely, large agribusiness producers in Northern Mexico rely on certification methods that involve laboratory testing and evaluation of purchased inputs.

A diagnostic census encompassing 668 production zones, along with field surveys in 256 production areas within Mexican organic agriculture, indicates that organic and fair-trade farming has become a viable income-generating strategy for small producers, attracting a variety of market traders. Nonetheless, it also underscores the social inequalities that exists between large and small producers within conventional Mexican agriculture.

Case-II: Farmer- agribusiness Linkage in Kerela, India- Hena M (2017)

In Kerela, a limited number of firms are involved in the export of organic food products. Quality assurance is conducted at the farm level through the Internal Control System (ICS) coordinated by Fair Trade Alliance Kerala (FTAK), ensuring that all farmers meet the quality standards required for organic production.

Homestead Products Pvt Ltd, a business initiative from Kerala, acknowledges the physical and emotional distance between sensitive farmers and conscious consumers, recognizing its impact on the organic market linkages.

3.4. Developing market linkage:

The concept of market linkages in agricultural development encompasses both backward and forward linkages, as introduced by G. Singh (2019). Backward linkages refer to investments in facilities that bolsters market activities, while forward linkages involve investments made in subsequent stages of production.

Edwardson & Santacoloma (2013) elaborated on a regional agrarian system highlighting horticulture supply chains, positing that NGOs play a critical role in fostering connections between farmers and traders to enhance market linkages. A significant challenge identified is farmers' reluctance to engage with foreign traders attributed primarily to a lack of trust. Implementing value-addition strategies has been shown to facilitate the active participation of diverse market traders, thereby strengthening these linkages.

Mosadegh Sedghy et al. (2024) focussed on the development of retail and wholesale markets that effectively distribute products in remote areas. Such initiatives promote decentralization, which minimizes transportation costs associated with product exchange. Consequently, the conventional model of centralisation is deemed inadequate for rural contexts due to its associated high transportation costs.

Social Enterprise Typology (2007) defined the market linkage model within social enterprises as one that connects various market traders- including producers, buyers, and other stakeholders- encouraging the commercialization of products and services for import-export development. This model is instrumental in linking farmers, agro-food processors, and cooperatives within markets, fostering trade relationships, and promoting the success of small-scale producers.

Markelova et al. (2009) examined how collective action institutions enhance market access for rural communities in Kenya, emphasizing the involvement of national and international donors in the market development, along with local government engagement in partnership with the Horticulture Crop Development Authority (HSDA).

Quaedackers (2010) highlighted the role of chain integrators in reducing of transaction costs and establishing trust between farmers and the buyers, ultimately facilitating enhanced transactional flows. Similarly, Nanthagopan (2011) underscored the importance of linkages in minimizing resource wastage and improving access to new information, particularly highlighting the critical role of NGOs in enhancing market performance for organic production.

Rundh (2013) emphasized the significance of value-addition strategies-including grading, labeling, and packaging-as essential for disseminating knowledge to farmers regarding organic production processes. Such strategies not only create opportunities but also enhance farmers' income prospects. Conversely, individual-based marketing approaches often undermine smallholders' bargaining power, making them susceptible to price exploitation by traders.

Clancy et al. (2017) identified linkage facilitators as requisite private sector participation, business-to-business partnerships, donor agency involvement, and local government support. Effective market linkage yields multiple benefits, such as reduced inputs costs for large firms, increased specialisation, and enhanced operational flexibility, which together diminish inefficiencies and foster a robust domestic economic multiplier effect. Weak market linkages, on the other hand, lead to market inefficiencies, missed opportunities, and an over-reliance on imported goods and services.

Kelly et al. (2015) classified chain integrators into three distinct models: buyer-driven model, where initiators propel market transactions; a producer-driven model, characterized by producers cooperating to access new markets; and the intermediary-driven model, where external agents facilitate market linkages for smallholders. The emphasis across all models is on network building, knowledge sharing, and capacity enhancement among farmers.

Mutura et al. (2015) discussed how both horizontal and vertical integration within supply chain development serve as determinants of market channels for smallholders, facilitating trade relations between local producers or cooperatives and external market.

According to the Ministry of Agriculture and Farmers' Welfare (2018), the Mission Organic Valur Chain development for North east Region (MOVCDNER) initiative facilitates access to shared infrastructure-such as collection centers, packaging houses, and processing facilities-for Farmer Producer Organizations (FPOs) and Farmer Interest Groups (FIGs). This initiative further supports farmers in market accessibility, brand development, certified organic product promotion, input distribution, and marketing advancement.

Veldwisch & Woodhouse (2022) explored the significance of formal contracts between large-scale enterprises and small-scale producers, as well as informal contracts arrangements in irrigation facilities and input distribution, positing that such initiatives can significantly enhance the developmental effectiveness of market linkages.

Finally, Mishra et al. (2024) investigate the involvement of smallholders in international value chains to enhance product quality and improve market access. Such collaboration fosters household food security and elevates farmers' welfare, supported by both through government and non-governmental initiatives.

4. Results:

Market linkages for organic certified produce act as a catalyst for India's economy by fostering rural development and generating income for smallholder farmers. These linkages underscore trust issues and the relationships among various market traders. The effectiveness of market linkages hinges on several key approaches to connect producers with markets:

- i. **Profitability and Market Access:** Silva et al. (2015) emphasized the importance of niche markets, particularly in the realm of organic agricultural products, and the growth and expansion of local markets.

- ii. The concept of 'Expansion through replication' represents a sustainable approach within a single enterprise cycle, covering the journey from production to successful scaling. This can be achieved without reliance on external inputs from the affiliated organizations, as noted by Siderer et al. (2005). Economic Assistance includes market access programme and other extension services, according to Nandi (2019)
- iii. Furthermore, entrepreneurial competency plays a crucial role in the formation of unofficial contracts, where companies and individual business owners establish agreements with farmers to facilitate market participation by Pratita et al. (2019) and a system of profitable markets relies on principles of cost transparency, technology development and supporting policies, as outlined by (Barrett et al., 2001)
- iv. An exit strategy is a strategic approach for the sale and transfer of ownership of a business or entity once it reaches a specific milestone or valuation. This component of a strategic business plan outlines how both entrepreneurs and investors can reap the rewards of the risks they have undertaken. The parties involved would no engaged directly, with investments directly towards capacity building and audit procedures, added by (Hellin et al., 2009)
- v. According to Shepherd (2006) , contractual agreements, whether tripartite and quadripartite, play an important role in facilitating connections among various stakeholders. A supermarket chain established partnership between farmer suppliers and input dealers, who consented to provide the farmers with supplies on credit, with the support of financial institutions. Furthermore, the role of Information and Communication Technology (ICT) is paramount in fostering effective market linkages, as highlighted by Gyeltshen & Osathanunkul (2018).

Summary of Research gap: The research gap is identified as a lack of specificity in previous studies on organic market linkages, coupled with limited research and insufficient data, which creates significant obstacles to the investigation and expansion of organic agriculture.

5. Discussion:

Promoting market linkages is an effective strategy for driving long-term investments that enhance the domestic economy while simultaneously addressing immediate challenges. Strengthening these linkages is essential; however, the success of such initiatives will largely depend on various economic, financial and organizational factors, as well as the supportive environment established by governments. It is also vital to acknowledge the importance of market linkage information facilitated through Information and Communication Technology (ICT). Identified constraints include a lack of specificity, limited research, and insufficient transparency regarding the certified list of organic producers. It is recommended that future research concentrate on market connectivity and technological advancements.

5.1.Theoretical framework:

The theoretical framework of market linkage (2007-2024)

Market linkage model: the Four Lenses Strategic Framework (Social Enterprise Typology, 2007)

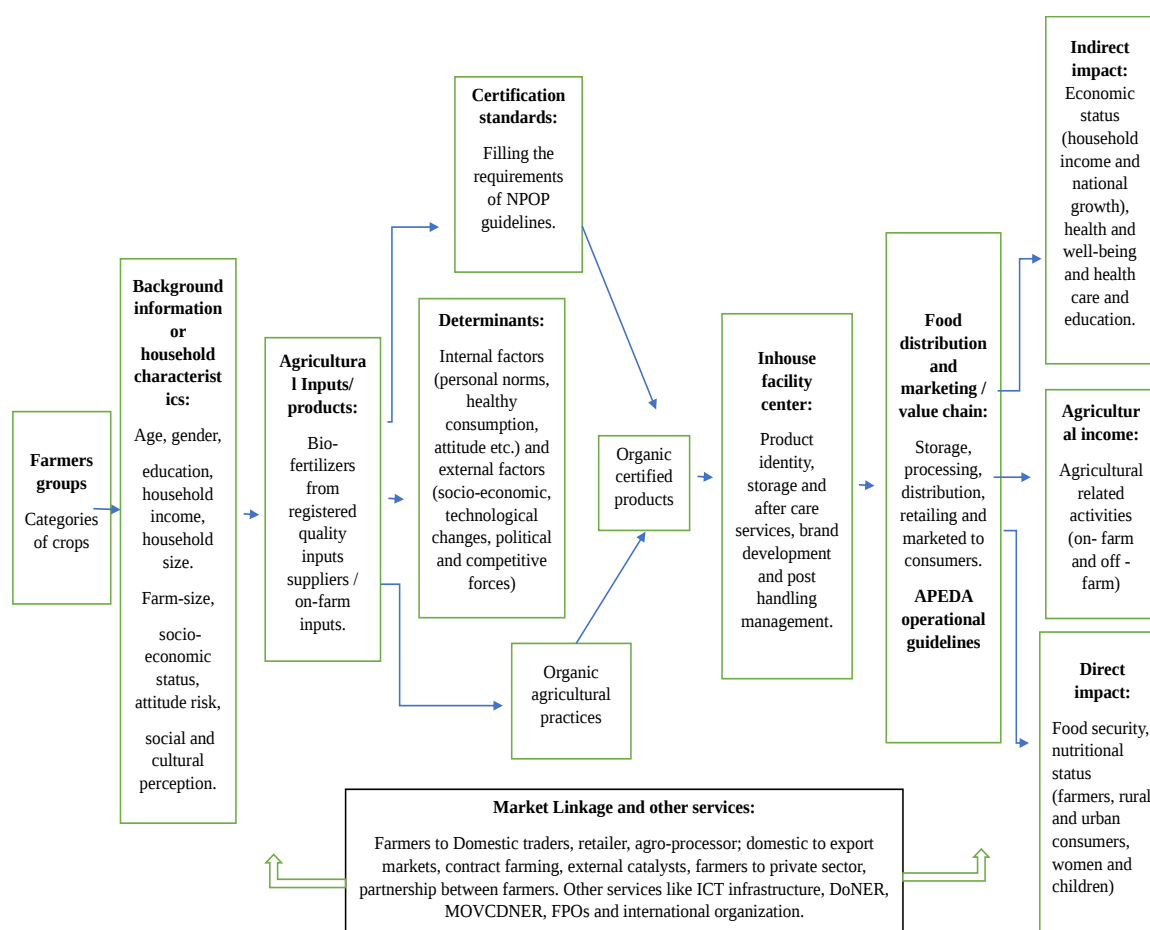
Collective action institutions (Markelova et al., 2009)

Networking and linkages to international business (Nanthagopan, 2011)

Model of chain integrators (Kelly et al., 2015)

Horizontal and vertical integration (Liu et al., 2015)
Linkage facilitators (Public and private sector participation, donor agencies (Clancy et al., 2017)
Theory of Planned behaviour (Yingqi Zhu, 2018)
Value Addition Strategy (Vaikunthavasan, 2018)
Forward and backward linkages (G. Singh, 2019)
Formal and informal contract farming (Veldwisch & Woodhouse, 2022)
Retail and wholesale market development (Mosadegh Sedghy et al., 2024)
Collaborative agricultural value chain model (Mishra et al., 2024)

5.2. Conceptual framework:



Source: Literature review

6. Future scope of study:

Market linkage represents a productive approach that unites market participants to identify challenges and devise innovative solutions aimed meeting the needs of smallholders and enhancing market accessibility for organic products, ultimately impacting the value chain positively. Strategies such as contract farming, direct marketing, and connecting farmers to markets through Information and Communication Technology (ICT), Farmers' Producers Organizations (FPOs), Farmers' Producer Companies (FPCs) and Self-Help Groups (SHGs), along with necessary infrastructure, have the potential to minimize marketing risks and reducing transaction costs, thereby improving smallholders' access to markets. Marketers must possess a deep understanding of consumer behaviour, including thoughts, feelings, and actions, while also being equipped to provide unique value to each individual consumer and market trader. Consequently, it is crucial to leverage the insights gained to inform decision-making and to formulate effective, innovative marketing strategies.

7. Conclusion:

Market linkages for smallholder farmers significantly influence global food value chains, serving as vital anchors for the rural poor and contributing to economic development, particularly in developing countries. Active participation in markets provides smallholders with a pathway to achieve stable cash flow, alleviate poverty, and ultimately enhance their livelihoods. The Government of India has implemented reforms aimed at fostering the agricultural marketing sector by promoting private involvement, improving market infrastructure, and establishing institutions to support a cohesive organic value chain.

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