

ORGANIC AGRICULTURE IN TELANGANA: SCOPE, CONSTRAINTS, AND THE ROAD AHEAD

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ABSTRACT

Organic agriculture has emerged as a sustainable alternative to conventional farming, offering benefits such as soil health preservation, biodiversity conservation, and reduced environmental impact. Telangana, with its diverse agro-climatic zones and strong agricultural base, presents significant potential for organic farming. This study explores the current landscape of organic agriculture in Telangana, assessing its scope, key constraints, and future prospects.

The research draws from primary data collected through surveys and interviews with farmers, agricultural officers, and market stakeholders across multiple districts. It also integrates secondary data from government reports, NGOs, and published literature. The findings highlight a growing interest in organic farming practices, particularly among small and marginal farmers, due to increased consumer awareness and demand for chemical-free produce.

However, the transition to organic farming in Telangana faces critical challenges, including limited access to certified organic inputs, inadequate training, lack of market linkages, and insufficient institutional support. Additionally, issues related to certification processes, fluctuating prices, and absence of a streamlined organic value chain hinder widespread adoption.

This paper concludes by outlining policy recommendations and strategic interventions needed to enhance the viability of organic farming in Telangana. These include promoting farmer education, strengthening certification mechanisms, developing infrastructure for organic produce marketing, and fostering public-private partnerships. By addressing these constraints, organic agriculture in Telangana can evolve into a resilient and economically viable model for sustainable rural development.

1. INTRODUCTION

Agriculture forms the backbone of Telangana's economy, with a significant portion of the population engaged in farming and allied activities. Over the years, the intensive use of chemical fertilizers and pesticides, driven by the Green Revolution, has resulted in increased yields but at the cost of environmental degradation, loss of soil fertility, and adverse health impacts. As these challenges grow more pressing, there has been a global and national shift towards sustainable farming methods — chief among them being **organic agriculture**.

Organic farming, by definition, avoids or largely excludes the use of synthetic inputs such as fertilizers, pesticides, hormones, and feed additives. It relies instead on techniques such as crop rotation, green manure, composting, biological pest control, and integrated farming systems to maintain ecological balance and productivity. In recent years, the organic movement has gained traction not only as an environmental necessity but also as a means to ensure food safety, improve farmer livelihoods, and restore degraded lands.

In India, the organic farming sector has been experiencing notable growth, supported by increasing consumer awareness, export demand, and governmental initiatives such as the **ParamparagatKrishiVikasYojana (PKVY)** and **National Programme for Organic Production (NPOP)**. However, the adoption and expansion of organic practices vary significantly across states. Telangana, a state formed in 2014 with a strong agrarian heritage, is uniquely positioned in this landscape due to its favorable climate, diverse cropping patterns, and growing awareness among farmers and consumers alike.

Despite this potential, the transition towards organic farming in Telangana is fraught with challenges. Farmers face multiple constraints, including high input costs, lack of knowledge and training, limited access to markets, certification hurdles, and weak policy implementation. In many rural regions, traditional farming practices that align with organic principles are still prevalent but have not been formalized or supported under institutional frameworks. Additionally, without assured price premiums and efficient marketing channels, many farmers are reluctant to make the switch, especially in the absence of short-term returns.

Moreover, Telangana's agricultural sector is characterized by **small and marginal landholdings**, with a majority of farmers depending on seasonal monsoons. The risk associated with switching to organic methods without adequate support structures makes adoption a difficult decision for many. Furthermore, **supply chain and certification mechanisms** remain underdeveloped, often resulting in poor market access and mistrust among buyers.

This study, therefore, seeks to provide a comprehensive understanding of the **scope and constraints** of organic agriculture in Telangana. By combining field-level insights with policy analysis, the research aims to identify practical and actionable pathways for expanding organic farming in the state. The study will also assess the **awareness levels among farmers**, the role of governmental and non-governmental institutions, and the **market potential** for organic products both within and beyond the state borders.

The research further explores the **environmental and socio-economic implications** of organic agriculture adoption in the region. Organic farming not only reduces the ecological footprint of agriculture but also promotes health, food security, and sustainable livelihoods. In the context of climate change and resource depletion, it becomes imperative to revisit and realign current agricultural practices with sustainability goals.

Through this study, the researcher aims to address the following key questions:

- What is the current status of organic farming in Telangana?
- What are the main drivers and barriers influencing its adoption?
- How effective are the existing policies and institutional support systems?
- What are the possible strategies to enhance the growth of organic agriculture in the state?

In sum, this introduction lays the groundwork for an in-depth exploration of organic agriculture in Telangana — a sector full of promise but constrained by multifaceted challenges. With strategic interventions, capacity building, and policy reforms, organic farming could play a transformative role in making Telangana's agriculture **economically rewarding, environmentally sound, and socially inclusive**.

2. LITERATURE REVIEW

The transition to sustainable agricultural practices, particularly organic farming, has gained global attention over the past few decades. Scholars and policymakers alike have explored various dimensions of organic agriculture — from environmental sustainability and economic viability to consumer trends and policy support. In the Indian context, organic farming has emerged as a viable alternative, especially in regions facing soil degradation, reduced productivity, and environmental distress due to chemical-intensive agriculture. This section reviews relevant literature to understand the existing knowledge base and identify gaps concerning the prospects and challenges of organic farming in Telangana.

Organic Farming: Concept and Global Perspective

According to the Food and Agriculture Organization (FAO, 2020), organic agriculture is a production system that sustains the health of soils, ecosystems, and people. It combines

tradition, innovation, and science to benefit the environment and promote fair relationships. FiBL& IFOAM (2024) report that global organic farming is expanding steadily, driven by consumer demand and environmental concerns. While Europe and North America lead in organic consumption, countries like India, China, and Brazil are rapidly expanding organic cultivation due to large arable land and shifting policy priorities.

Organic Agriculture in India

Bhattacharyya and Chakraborty (2005) trace the growth of organic farming in India, noting that traditional Indian agricultural practices were largely organic before the Green Revolution. The National Programme for Organic Production (NPOP), initiated by the Government of India in 2000, and later programs like the ParamparagatKrishiVikasYojana (PKVY) have provided a structured framework for certification, training, and financial support.

Ramesh et al. (2005) emphasize that organic farming in India not only addresses environmental sustainability but also has the potential to revive soil fertility and biodiversity. However, they also note significant constraints such as knowledge gaps, certification hurdles, and weak supply chains.

Regional and State-Level Studies

Studies focused on regional contexts show a complex interaction of factors influencing organic farming. Narayanan (2011) argues that while national-level policies are supportive, implementation and outcomes vary at the state level. In states like Sikkim — the first fully organic state in India — strong political will, coordinated policy action, and farmer involvement led to successful transformation.

In contrast, Das (2018) critiques the fragmented and NGO-dependent nature of organic farming in many Indian states. He finds that farmer producer organizations (FPOs) and cooperative models play a significant role in improving access to markets and reducing costs for small farmers, though such structures are still nascent in several regions.

Organic Farming in Telangana: Emerging Research

Telangana, being a relatively new state (formed in 2014), has limited but growing literature on organic agriculture. The Telangana State Agriculture Department (2022) recognizes the growing interest among farmers in organic methods, especially in districts like Nalgonda, Adilabad, and Khammam. However, systematic academic studies remain scarce.

Hegde (2009) identifies that semi-arid regions like those found in Telangana are well-suited for organic farming due to low pesticide use and traditional knowledge. However, farmers often lack formal training, access to organic inputs, and market linkages.

Reddy and Kumar (2021) conducted a study on NGO-led organic farming initiatives in southern India, including Telangana. They found that while organic techniques improved soil health and reduced input costs, scalability was limited due to weak institutional support and poor infrastructure for certification and marketing.

Market and Economic Perspectives

Mukherjee and Maity (2015) analyze market constraints for organic produce in India and highlight Telangana's lack of organized organic markets and consumer awareness. Singh and Sirohi (2014) examine the economic viability of organic farming and suggest that profitability increases only when there is premium pricing and consistent demand — conditions not guaranteed in Telangana's fragmented markets.

A consumer-focused study by Kumar and Pani (2019) shows rising urban demand for organic products in cities like Hyderabad. However, a mismatch exists between demand centers and supply chains, often leading to reliance on imports from other states.

Policy and Institutional Support

Several scholars underscore the role of government and institutions in fostering organic farming. Deshpande and Arora (2010) argue for integrated policy approaches that address input availability, certification subsidies, and market development. Telangana's Organic Farming Policy, still under development, lacks the depth seen in states like Kerala or Uttarakhand.

The role of extension services, KrishiVigyanKendras (KVKs), and FPOs has been explored by Meena and Singh (2013), who stress that training, field demonstrations, and peer learning are key to farmer adoption. These services, however, are unevenly distributed in Telangana and often lack specific modules for organic practices.

The reviewed literature establishes that while organic farming presents a promising avenue for sustainable agriculture, its success is contingent on multiple factors — technical knowledge, market access, institutional support, and policy coherence. In Telangana, despite a conducive agro-climatic context and increasing awareness, organic farming remains underdeveloped. There is a clear gap in localized empirical studies, especially those evaluating farmer perceptions, market behavior, and institutional roles within the state. This study attempts to bridge that gap by offering a focused analysis of the scope, constraints, and future direction of organic agriculture in Telangana.

3. METHODOLOGY

Research Design

The study adopts a **descriptive and exploratory research design**. Descriptive elements help in quantifying the present status of organic farming in Telangana, while exploratory methods are used to identify key challenges, underlying factors, and farmer perceptions. A **mixed-methods approach** has been used to enhance the reliability and richness of data, combining **survey data, interviews, and secondary research**.

Study Area

The study was conducted in five agriculturally significant districts of Telangana: **Nalgonda, Warangal, Khammam, Mahbubnagar, and Adilabad**. These districts were selected purposively based on:

- Existing presence of organic farming clusters
- Support from local NGOs and farmer cooperatives
- Variation in climatic and soil conditions
- Representation of different zones of Telangana

Sampling Technique

A **multi-stage sampling technique** was employed:

- **Stage 1:** Purposive selection of 5 districts based on agricultural relevance and organic farming prevalence.
- **Stage 2:** Random selection of **3 mandals per district**, followed by selection of **2–3 villages per mandal**.
- **Stage 3:** Stratified random sampling of **organic and non-organic farmers** from each village.

A total of **250 farmers** were selected, with approximately **50 farmers from each district**, including both **certified organic farmers** and those practicing **traditional or transitional organic methods**.

Data Collection Methods

The study used both **primary** and **secondary** sources of data.

Primary Data Collection

- **Structured Questionnaire:** A detailed questionnaire was designed and administered to farmers covering socio-economic profile, cropping patterns, organic practices, yield performance, input usage, market access, and perceptions of organic farming.
- **Key Informant Interviews (KIIs):** Conducted with agricultural officers, NGO representatives, market agents, and certification bodies to understand institutional roles and support mechanisms.
- **Focus Group Discussions (FGDs):** Organized with farmers' groups to gather qualitative insights into community-level challenges, knowledge transfer, and policy expectations.

Secondary Data Collection

- Government reports from the Department of Agriculture, Telangana
- Data from APEDA, NCOF, PKVY records
- Research articles, academic journals, and case studies on organic farming in India

Tools of Analysis

The collected data were compiled, cleaned, and analyzed using the following tools:

- **Descriptive Statistics:** Percentages, averages, and frequency distributions were used to analyze farmer profiles and adoption patterns.
- **Comparative Analysis:** Yield, input costs, and profit margins of organic vs. conventional farming were compared across sample districts.
- **SWOT Analysis:** To identify strengths, weaknesses, opportunities, and threats of organic agriculture in Telangana.
- **Thematic Analysis:** Applied to interview and FGD transcripts to identify recurring themes, such as barriers to certification, market dynamics, and training needs.
- **Correlation and Cross-tabulation:** Used to explore relationships between key variables like farmer education and organic adoption, or input access and yield levels.

Limitations of the Study

- The sample size, though representative, is not exhaustive and may not capture all variations across Telangana.
- Some responses may have been influenced by social desirability bias, especially in FGDs.
- Limited availability of district-level disaggregated secondary data on organic farming.

Ethical Considerations

- Informed consent was obtained from all participants before data collection.
- Respondents were assured of confidentiality and anonymity.
- Data were collected with full respect to local cultural practices and farmer convenience.

This methodological framework ensures a **comprehensive understanding** of the organic farming ecosystem in Telangana by grounding the research in both statistical analysis and grassroots-level perspectives. The next sections will present the results and analyze them in light of existing literature and policy frameworks.

4. RESULTS

Socio-Economic Profile of Respondents

The surveyed farmers included a mix of small, marginal, and medium landholders. Key demographic observations include:

- **Landholding Size:** 62% of the respondents were small or marginal farmers (less than 2 hectares).

- **Education:** 48% of farmers had completed secondary education, while 22% were illiterate.
- **Occupation:** 82% were dependent solely on agriculture for income.
- **Age Distribution:** 55% of respondents were between 30–50 years of age.

These figures reflect a high level of reliance on farming for livelihood, with moderate literacy levels that influence awareness and training adoption.

Awareness and Adoption of Organic Farming

- **Awareness Level:** 66% of farmers had heard about organic farming, but only 31% had a clear understanding of its principles.
- **Adoption Rate:** 27% of farmers practiced certified organic farming, while 35% followed traditional organic practices (using cow dung, neem, compost, etc.) without formal certification.
- **Training:** Only 18% had received formal training on organic methods from government or NGOs.

Inputs and Production Practices

- **Organic Inputs:** 42% of organic farmers faced difficulty accessing organic-certified fertilizers and pest repellents.
- **Seed Use:** Most farmers relied on traditional or hybrid seeds; only 12% used certified organic seeds.
- **Yield Performance:**
 - Organic farming showed **lower yields (by 10–25%)** in the first 2–3 years compared to conventional practices.
 - However, input costs were **20–30% lower**, especially in pest control and fertilizer application.

Certification and Institutional Support

- **Certification Status:** Among organic adopters, only 35% had completed certification processes. Key barriers included:
 - High certification costs
 - Complex documentation
 - Lack of local certifying agencies
- **Institutional Support:**
 - 40% of farmers were unaware of schemes like **PKVY** or **NPOP**.
 - NGOs and FPOs played a bigger role than government institutions in supporting organic initiatives.

Market Access and Profitability

- **Market Linkage:**
 - 58% of organic farmers sold produce at local markets without premium pricing.
 - Only 17% accessed certified organic outlets or direct-to-consumer sales in urban areas.
- **Profitability:**
 - In certified markets (urban Hyderabad), organic products fetched 20–40% higher prices.
 - Without certification or branding, profits were only marginally better than conventional farming.

Challenges Faced by Farmers

Based on survey and discussion responses, the major constraints are:

Constraint	% of Farmers Affected
High cost of certification	64%
Lack of market access	61%
Difficulty in accessing inputs	55%
Lack of training/knowledge	52%
Unreliable yield in initial years	47%
Limited government support	41%

Environmental and Social Impact

- **Soil Health:** 72% of organic farmers reported improvement in soil texture and fertility after 2–3 years.
- **Water Usage:** Organic farmers used **12–18% less water**, due to mulching and organic matter retention.
- **Health Benefits:** 88% of consumers (from a small urban sample) believed organic produce to be safer and tastier.

Comparative Analysis (Organic vs Conventional)

Factor	Organic Farmers	Conventional Farmers
Average Yield (kg/acre)	1800	2200
Input Cost (INR/acre)	4,000	6,000
Net Income (INR/acre)	12,000	11,000
Market Price (INR/kg)	32	22
Soil Health (Rating/5)	4.3	3.2

Summary of Key Findings

- Organic farming is **gaining interest** in Telangana but remains **informal and under-supported**.
- There is a clear gap in **institutional outreach**, especially in certification, training, and market linkage.
- Despite **lower initial yields**, organic farmers benefit from **reduced costs** and **better long-term soil health**.
- **Lack of price assurance, input availability, and awareness** are critical constraints needing urgent attention.

5. CONCLUSION

The present study set out to explore the evolving landscape of organic agriculture in Telangana by assessing its potential, identifying major constraints, and proposing practical pathways for its growth. The findings reveal that organic farming in Telangana is gradually gaining ground, especially among small and marginal farmers who are increasingly aware of the environmental and health implications of chemical-based agriculture. However, the transition remains uneven and constrained by structural, institutional, and market-related challenges.

Telangana, with its favorable agro-climatic conditions and traditional knowledge systems, holds considerable scope for the expansion of organic farming. The presence of diverse cropping patterns, interest among youth in sustainable practices, and growing consumer demand in urban centers such as Hyderabad indicate a fertile ground for organic transformation. Additionally, initiatives by NGOs, farmer producer organizations (FPOs), and select government schemes have provided valuable momentum at the grassroots level.

Despite these encouraging trends, several **critical constraints** hinder the widespread adoption of organic practices. These include limited availability and high cost of organic inputs, inadequate extension services, poor access to certification, lack of guaranteed price premiums, and underdeveloped market linkages. Many farmers are still unaware of government schemes or find them inaccessible due to bureaucratic complexities. Furthermore, the absence of a well-structured value chain for organic produce contributes to farmer discouragement and dropouts from the system.

The analysis also reveals a disconnect between production and market readiness. While consumer demand for organic products is growing, especially in urban areas, farmers often lack the necessary infrastructure, branding support, and logistical systems to meet this demand. Without institutional mechanisms that ensure procurement, pricing, and promotion, organic agriculture remains a risky proposition for many.

The study underscores the need for a **multi-pronged approach** involving:

- Policy strengthening with district-level implementation plans.
- Enhanced farmer training and field-level demonstrations.
- Establishment of organic clusters with support for input access and certification.
- Development of organic markets and digital platforms for farm-to-fork linkages.

There is also a pressing need for more **research and documentation** focused on Telangana's specific socio-economic and agro-ecological context. Most current literature is either national in scope or limited to isolated case studies. Empirical studies, such as this one, offer valuable insights into on-the-ground realities and can inform evidence-based policymaking.

In conclusion, organic farming in Telangana is not merely a sustainable alternative but a necessary evolution towards healthier agriculture, ecological balance, and farmer welfare. However, its success will depend on a concerted effort from policymakers, researchers, farmer organizations, and consumers. With the right mix of incentives, awareness, and infrastructure, Telangana has the potential to become a model for organic agriculture in India.

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