International Journal of Science and Research (IJSR)
ISSN: 2319-7064
Impact Factor 2024: 7.101

Sustainable Development of Agricultural Tradition and Modernization: A Review Study in Light of Farmer Suicides in the Marathwada Region

Sonali R. Kharatmal

Savitribai Phule Pune University, Pune
Research Center, MES Abasaheb Garware College of Commerce, Karve Road, Pune

Abstract: ***The agrarian crisis in India has emerged as one of the most persistent development challenges of the twenty-first century, with farmer suicides representing its most tragic manifestation. The Marathwada region of Maharashtra has witnessed disproportionately high levels of agrarian distress due to chronic drought, ecological fragility, and socio-economic vulnerability. This review paper critically examines the relationship between agricultural tradition, modernization, and sustainable development in the context of farmer suicides in Marathwada. Drawing upon interdisciplinary literature from sustainable agriculture, environmental studies, agrarian economics, and rural development, the study highlights how unbalanced modernization—characterized by input-intensive farming, market dependency, and ecological neglect—has undermined traditional resilient farming systems. The review argues that sustainable agriculture, grounded in ecological balance, indigenous knowledge, climate resilience, and institutional support, provides a viable pathway to reduce agrarian distress. By synthesizing existing research, policy reports, and empirical studies, the paper identifies key gaps in sustainability-oriented interventions and proposes region-specific strategies aligned with long-term farmer well-being. The study contributes to academic discourse by reframing farmer suicides as a sustainability failure rather than merely an economic phenomenon, thereby emphasizing the need for holistic agrarian transformation.***

Keywords: Sustainable agriculture, farmer suicides, Marathwada, agricultural modernization, ecological resilience, traditional farming

1. Introduction

Agriculture remains the backbone of rural livelihoods in India, supporting nearly half of the population while contributing a declining share to national income. Despite technological progress and policy reforms, Indian agriculture continues to face structural vulnerabilities, particularly in semi-arid regions. Among these, the Marathwada region of Maharashtra has gained national attention due to recurring droughts, agrarian distress, and alarming rates of farmer suicides. The phenomenon of farmer suicides is not merely an outcome of economic hardship but reflects deeper systemic failures involving environmental degradation, institutional inadequacies, and unsustainable modernization pathways.

Marathwada's agrarian economy is predominantly rainfed and characterized by small and marginal landholdings. Historically, traditional agricultural practices in the region were adapted to climatic uncertainty through crop diversity, low external input use, and community-based resource management. However, the post-Green Revolution era introduced input-intensive farming systems, monocropping, and market-oriented production models that were ecologically mismatched to the region's fragile environment. As a result, farmers became increasingly dependent on credit, chemical inputs, and volatile markets, thereby amplifying risk exposure.

Sustainable development in agriculture emphasizes the integration of economic viability, environmental integrity, and social equity. In drought-prone regions like Marathwada, sustainability is not optional but essential for survival. Yet, development policies have often prioritized productivity growth over ecological resilience, leading to soil degradation, groundwater depletion, and biodiversity loss. Climate change has further exacerbated these vulnerabilities by intensifying rainfall variability and extreme weather events.

Farmer suicides in Marathwada must therefore be understood as a manifestation of unsustainable agricultural systems rather than isolated individual failures. Psychological distress among farmers is closely linked to indebtedness, crop failure, social pressure, and institutional neglect. The inability to cope with repeated shocks erodes farmers' resilience and dignity, pushing many toward extreme outcomes.

This review paper seeks to critically analyze the interplay between agricultural tradition, modernization, and sustainable development in the context of farmer suicides in Marathwada. By synthesizing existing literature, the study aims to identify pathways through which sustainable agriculture can restore ecological balance, enhance livelihood security, and reduce agrarian distress. The paper adopts a sustainability lens to move beyond symptomatic interventions and toward long-term systemic solutions.

2. Objectives and Significance of the Study

The primary objective of this review is to examine the role of sustainable agricultural development in addressing agrarian distress and farmer suicides in the Marathwada region. Specifically, the study aims to analyze how traditional agricultural practices contributed to ecological resilience, how modernization altered these systems, and how sustainability-oriented strategies can bridge this divide.

The study seeks to synthesize interdisciplinary literature to identify key drivers of farmer suicides from an environmental and sustainability perspective. It also aims to assess the limitations of existing policy interventions and highlight gaps

in sustainability integration. By doing so, the review contributes to academic discourse on sustainable agriculture and rural development.

The significance of this study lies in its holistic approach. Rather than treating farmer suicides solely as economic or psychological issues, the paper situates them within broader sustainability challenges. This perspective is particularly relevant for drought-prone regions facing climate uncertainty. The findings are expected to inform policymakers, researchers, and development practitioners working toward sustainable agrarian transformation.

3. Review Methodology

This study adopts a narrative review methodology to synthesize existing literature on farmer suicides, agricultural modernization, and sustainable development in the Marathwada region. Sources were identified through academic databases such as Scopus, Web of Science, Google Scholar, and institutional repositories. Peer-reviewed journal articles, government reports, policy documents, and credible working papers published primarily between 2000 and 2024 were included.

The inclusion criteria focused on studies addressing agrarian distress, sustainability, traditional farming systems, modernization impacts, and farmer well-being. Exclusion criteria involved non-peer-reviewed opinion pieces and studies lacking regional or thematic relevance. The selected literature was analyzed thematically to identify recurring patterns, contradictions, and research gaps.

By adopting a sustainability lens, the review emphasizes ecological and institutional dimensions often underrepresented in suicide-focused studies. This methodological approach allows for a comprehensive understanding of agrarian distress while maintaining analytical depth.

4. Conceptual Framework: Sustainable Agriculture and Agrarian Distress

Sustainable agriculture is grounded in the principle of meeting present food and livelihood needs without compromising the ability of future generations to meet theirs. It encompasses ecological sustainability, economic viability, and social equity. In the context of agrarian distress, sustainability provides a framework to analyze systemic vulnerabilities and resilience capacities.

The Sustainable Livelihood Framework highlights how access to natural, financial, human, social, and physical capital shapes livelihood outcomes. In Marathwada, degradation of natural capital—such as soil fertility and water availability- has weakened livelihood resilience. Modernization strategies that ignore ecological limits further erode this capital base.

Agrarian distress emerges when livelihood systems fail to absorb shocks. Sustainable agriculture enhances resilience by promoting diversification, low-input practices, and adaptive capacity. This framework underscores the need to integrate environmental stewardship with farmer well-being.

5. Agrarian and Agro-Ecological Profile of Marathwada

Marathwada comprises eight districts characterized by semi-arid climate, erratic rainfall, and recurrent droughts. The region's agriculture is predominantly rainfed, with limited irrigation infrastructure. Soils are largely shallow and low in organic matter, making them vulnerable to erosion and nutrient depletion.

Cropping patterns have shifted toward water-intensive and market-driven crops, increasing vulnerability to climate variability. Groundwater overextraction has led to declining water tables, further constraining agricultural sustainability. These ecological constraints interact with socio-economic factors to intensify agrarian distress.

6. Farmer Suicides in Marathwada: A Sustainable Agriculture Perspective

Farmer suicides in Marathwada are a complex outcome of intertwined economic, environmental, and institutional factors. Indebtedness resulting from crop failure, high input costs, and unstable markets is a major trigger. However, environmental stress plays a critical role in undermining farmers' coping capacity.

Repeated droughts and soil degradation reduce yields and income stability. The psychological burden of uncertainty, combined with social expectations and limited institutional support, exacerbates mental distress. Sustainable agriculture offers pathways to reduce such vulnerability by stabilizing production systems and livelihoods.

7. Traditional Agricultural Systems and Ecological Sustainability

Traditional farming systems in Marathwada were adapted to local ecology through mixed cropping, indigenous seed varieties, and community-managed resources. These practices enhanced soil health, biodiversity, and risk distribution. The erosion of traditional knowledge under modernization has reduced ecological resilience.

Reviving and integrating indigenous practices within modern sustainability frameworks can strengthen adaptive capacity. Such integration respects cultural heritage while enhancing environmental sustainability.

8. Agricultural Modernization and Ecological Limitations

Modernization introduced mechanization, chemical inputs, and market integration, leading to productivity gains in favorable regions. However, in ecologically fragile regions like Marathwada, these approaches increased vulnerability. Input-intensive farming elevated costs and ecological stress without ensuring stable returns.

Unsustainable modernization has contributed to soil degradation, water scarcity, and financial risk. A sustainability-oriented critique emphasizes the need for

context-specific modernization that aligns with ecological limits.

9. Sustainable Agriculture Strategies for Marathwada

Sustainable agriculture strategies for Marathwada include climate-smart agriculture, organic and natural farming, water conservation, and diversification. Rainwater harvesting, watershed development, and micro-irrigation can enhance water security. Crop diversification and agroecology reduce risk and improve soil health.

Institutional support through extension services, credit reform, and market access is essential. Policies must incentivize sustainability rather than short-term productivity. Community participation and farmer empowerment are central to successful implementation.

10. Discussion

The review highlights that farmer suicides are symptomatic of unsustainable agrarian systems. Addressing distress requires a paradigm shift from productivity-centric models to sustainability-oriented development. Integrating traditional knowledge with modern innovations can enhance resilience and dignity among farmers.

11. Conclusion and Policy Implications

Farmer suicides in Marathwada underscore the urgent need for sustainable agricultural transformation. Policies must prioritize ecological restoration, livelihood security, and institutional accountability. Sustainable agriculture offers a holistic pathway to reduce agrarian distress and ensure long-term rural well-being.

References

[1] Altieri, M. A. (2018). Agroecology: The science of sustainable agriculture. CRC Press.
[2] Government of Maharashtra. (2022). Report on agrarian distress and farmer suicides in Maharashtra. Mumbai.
[3] International Panel of Experts on Sustainable Food Systems. (2019). Towards food systems that support healthy diets and sustainability.
[4] Kalamkar, S. S. (2016). Agrarian distress and farmer suicides in Maharashtra. Indian Journal of Agricultural Economics, 71(3), 351–366.
[5] National Crime Records Bureau. (2023). Accidental deaths and suicides in India. Ministry of Home Affairs, Government of India.
[6] Pretty, J. (2018). Sustainable intensification of agriculture. Nature Sustainability, 1(8), 441–446.
[7] Scoones, I. (2015). Sustainable livelihoods and rural development. Practical Action Publishing.
[8] Shiva, V. (2016). Who really feeds the world? The failures of agribusiness and the promise of agroecology. North Atlantic Books.
[9] Singh, R. B., & Kumar, P. (2020). Climate change and Indian agriculture. Springer.
[10] World Bank. (2021). Transforming agriculture for climate resilience. World Bank Publications.