

A Critical Analysis of Farmer - Centric Policy Development for Genetically Modified Crops in India

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Abstract: *The ongoing debate surrounding genetically modified (GM) crops in India highlights the need for a comprehensive and farmer - centric policy. This paper critically examines the recent directive by the Supreme Court of India for a national GM policy, emphasizing the importance of public consultation and farmer welfare. Key concerns regarding GM crops include socioeconomic impacts, environmental sustainability, and biosafety, which have been points of contention among policymakers, scientists, and agricultural stakeholders. Through a review of current literature and expert opinions, this study explores the implications of GM crop technology in India, focusing on the socioeconomic, ecological, and health challenges. Findings suggest that the proposed policy should prioritize farmer welfare, address biosafety rigorously, and adopt a democratic approach to policy formulation. Recommendations include enhancing biosafety regulations, supporting sustainable alternatives to GM technology, and promoting inclusive policy - making processes to ensure that GM crop policies meet the diverse needs of India's agricultural sector.*

Keywords: Genetically Modified Crops, Agricultural Policy in India, Biosafety Regulations, Farmer - Centric Policy, Socioeconomic Impact of GM Crops, Sustainable Agriculture in India.

1. Introduction

The introduction of genetically modified (GM) crops in Indian agriculture has sparked widespread debate on their benefits and risks. Recent developments, including a Supreme Court directive to create a national GM policy through public consultation, have intensified discussions. Proponents argue that GM crops could play a crucial role in India's food security, while critics raise concerns about their environmental impact, health implications, and the welfare of small - scale farmers. With the government's mandate to develop a policy that considers research, cultivation, and trade, there is an urgent need to assess the socioeconomic and environmental aspects of GM technology in India.

2. Review of Literature

Soma Marla (2024), a former scientist from the National Bureau of Plant Genetic Resources, argues that GM crops are not the only solution for crop improvement and that they often harm beneficial organisms and disrupt biodiversity. Marla highlights that Western - developed GM technologies may not be ideal for Indian agriculture due to their adverse effects on the environment and the dominance of corporate interests over farmer welfare. Similarly, Kuruganti (2024) from the Alliance for Sustainable & Holistic Agriculture calls for a democratic and consultative approach, underscoring the need for a biosafety policy that protects biodiversity and human health. According to Siddiqi (2024), an emeritus scientist, current GM regulations inadequately consider India's diverse agro - economic conditions, which has led to unintended consequences for marginalized farmers, particularly with the introduction of Bt cotton.

3. Methodology

This paper employs a qualitative review methodology, analysing secondary data sources, including expert interviews, published reports, and regulatory documents. Primary insights from articles and statements by agricultural experts were synthesized to explore perspectives on GM policy and its impact on Indian agriculture. This method enables a comprehensive understanding of the complex factors that a farmer - centric GM policy must address.

4. Results and Discussion

The analysis reveals a consensus among experts that the current GM policy discourse is overly influenced by corporate interests, often at the expense of farmers' welfare and environmental health. One key finding is the lack of adequate biosafety regulations tailored to India's unique agricultural needs. The dominance of corporate - patented GM technology has limited options for farmers and increased dependency on high - cost inputs, impacting the economic stability of small farmers. Public - sector research has proven effective in promoting sustainable agriculture, suggesting that an increased focus on conventional breeding techniques and molecular tools could better support Indian agriculture without the environmental risks posed by GM crops.

5. Conclusion and Suggestions

The development of a GM policy in India must be rooted in democratic processes and prioritize farmer - centric values. Given the diverse agricultural landscape and the socioeconomic constraints of Indian farmers, policymakers should consider biosafety, environmental protection, and farmer welfare as core elements of any GM policy. Recommendations for policymakers include:

- a) **Strengthening Biosafety Regulations:** Implementing robust biosafety legislation to protect biodiversity and human health.
- b) **Promoting Public Sector Research:** Supporting research in conventional breeding and sustainable farming practices.
- c) **Ensuring Inclusive Policy - making:** Engaging diverse stakeholders in policy development, particularly small and marginalized farmers.
- d) **Assessing Socioeconomic Impact:** Conducting comprehensive studies on the long - term socioeconomic impacts of GM crops to guide policy decisions.

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