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Indian Agriculture Towards 2030
R. Chand, P. Joshi, & S. Khadka (Eds.)
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Abstract. Indian Agriculture Towards 2030 is a comprehensive open-access volume that critically examines the future trajectory of India's agricultural sector. Edited by Ramesh Chand, Pramod Joshi, and Shyam Khadka, the book presents a multifaceted analysis of the challenges and opportunities facing Indian agriculture as it approaches the 2030 Sustainable Development Goals (SDGs). The editors advocate for a transformative vision that transcends the post-Green Revolution paradigm, emphasizing the need for structural reforms, technological innovation, and inclusive policies. The book is structured into ten chapters, each addressing a key aspect of agricultural transformation. Topics include dietary diversification, climate resilience, water management, pest control, natural farming, agroecology, and the role of science and technology. The authors argue that India's agricultural policies must evolve to promote sustainability, enhance farmers' incomes, and ensure nutritional security. They highlight the importance of integrating ecological considerations into farming practices and the necessity of governance reforms to support these changes. A significant contribution of the book is its emphasis on the interconnectedness of agriculture with broader socio-economic factors. It underscores the role of agriculture in rural livelihoods, food security, and economic development. The editors call for a holistic approach that considers environmental sustainability, social equity, and economic viability. The book serves as a valuable resource for policymakers, researchers, and practitioners seeking to understand and address the complexities of agricultural transformation in India.
Keywords. Agricultural Transformation, Nutritional Security, Sustainable Development Goals, Climate Resilience, Policy Reform.
JEL. Q18, Q56, O13.
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Book Review

Agriculture Agriculture has been at the heart of India's socio-economic development for centuries. While the sector continues to employ a significant portion of the population, it faces several challenges, from stagnant productivity growth to the impacts of climate change and evolving dietary habits. India's agricultural policies have been evolving since the Green Revolution, but as the world heads into the 21st century, there is an urgent need for a new vision that tackles both current

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challenges and future prospects. Indian Agriculture Towards 2030 attempts to lay the foundation for this new vision by exploring how Indian agriculture can achieve sustainable growth while addressing issues related to farmers' income, food security, and environmental sustainability.

Edited by Ramesh Chand, Pramod Joshi, and Shyam Khadka, this book offers an insightful analysis of the Indian agricultural landscape and outlines pathways to enhance the sector's resilience, productivity, and inclusiveness. The editors aim to integrate key themes such as agricultural policy reform, technological innovation, climate resilience, and the importance of inclusive growth to provide a holistic framework for the future of Indian agriculture.

Overview of the Book

The book is divided into 10 chapters, each addressing different aspects of agricultural transformation. It explores a wide range of topics, from enhancing agricultural productivity and reducing poverty, to promoting sustainable farming practices and tackling malnutrition. The editors stress the importance of adopting a multi-dimensional approach that considers environmental, social, and economic factors. Each chapter builds on these key concepts, offering insights from leading experts in the field.

While some of the chapters focus on specific sectors within agriculture, others explore broader policy frameworks and governance structures. The authors' focus is not just on the economic dimensions of agriculture, but also on ensuring that farming systems are ecologically sustainable, socially inclusive, and resilient to the impacts of climate change.

Key Themes and Analysis

Dietary Diversification and Nutritional Security: One of the most compelling aspects of the book is its focus on dietary diversification. The editors discuss how changing dietary habits in India are creating new demands for food production, particularly for fruits, vegetables, pulses, and dairy products. The book presents data suggesting that the country's agriculture must shift from being primarily cereal-focused to a more diverse set of crops, ensuring nutritional security for the growing population.

The authors argue that achieving food security and better nutrition requires substantial changes in agricultural practices. This includes supporting smallholder farmers to diversify crops, implementing policies that ensure food access, and focusing on the quality of nutrition rather than just the quantity of food produced. The book emphasizes that India's future food systems must prioritize balanced diets and reduce the over-reliance on staple grains.

Climate Resilience and Risk Management: Climate change is a significant concern for Indian agriculture. Changes in rainfall patterns, temperature fluctuations, and increasing extreme weather events pose risks to the productivity of the agricultural sector. The authors discuss how Indian farmers are vulnerable to these changes and what can be done to mitigate these risks.

In this context, the book advocates for the adoption of climate-smart agriculture (CSA). CSA involves techniques and practices that increase agricultural productivity and resilience to climate change while reducing greenhouse gas emissions. The authors suggest that climate resilience can be achieved through early warning systems, improved crop varieties, and investment in infrastructure such as irrigation systems.

In addition, the authors highlight the need for enhanced government support to enable farmers to transition to more sustainable agricultural practices. Given the dependence on rainfall in many parts of the country, they propose efficient water management systems, including rainwater harvesting and water-conserving technologies, as key to ensuring food security in the face of changing climate patterns.

Water Management and Sustainability

India is facing a severe water crisis, exacerbated by increasing urbanization, over-extraction of groundwater, and inefficient water management practices. The book devotes an entire chapter to water management, focusing on the need for sustainable water use in agriculture.

The authors point out that irrigation systems in India are often inefficient, with a significant portion of water lost due to poor infrastructure and mismanagement. To address this, the book suggests a shift towards more efficient irrigation systems such as drip irrigation and sprinklers, which can reduce water usage while maintaining crop yields. Furthermore, promoting watershed management and groundwater recharge are identified as essential components for ensuring long-term agricultural sustainability.

The book also discusses policy interventions to ensure equitable access to water resources, particularly for marginalized farmers. It stresses that water governance in India needs to be more decentralized, allowing for greater local participation in decision-making processes related to water management.

Role of Science, Technology, and Innovation: Technological innovation is one of the driving forces behind agricultural transformation. The book highlights how science and technology can play a pivotal role in enhancing agricultural productivity, sustainability, and resilience. From biotechnology to digital agriculture, the authors present various innovations that could reshape the future of Indian agriculture.

For example, the book discusses the potential of precision farming, which uses data and technology to optimize the use of resources such as water, fertilizers, and pesticides. This can lead to higher yields and reduced environmental impact. Similarly, advancements in biotechnology, such as genetically modified crops, are discussed in terms of their potential to increase crop resistance to pests, diseases, and extreme weather conditions.

However, the authors caution that while technology holds great promise, its benefits must be inclusive and accessible to all farmers, including smallholders. To achieve this, the book advocates for greater investment in

rural infrastructure, digital literacy programs, and technology transfer initiatives to ensure that farmers can fully benefit from these innovations.

Governance and Policy Reforms: Effective governance is essential for realizing the vision of a sustainable agricultural future in India. The book argues that the current policy framework often fails to address the structural issues faced by Indian agriculture. One of the key challenges highlighted is the fragmented nature of agricultural governance in India, which hinders the coordination of efforts across different sectors.

The authors propose several policy reforms, including the simplification of land tenure systems, better access to credit for smallholder farmers, and greater attention to rural development. Furthermore, they emphasize the need for a more inclusive policy framework that supports women farmers, tribal communities, and other marginalized groups.

The book also discusses the role of public-private partnerships (PPPs) in agricultural development. These partnerships can play a crucial role in improving infrastructure, developing market linkages, and delivering services to farmers. The authors suggest that the government must create an enabling environment for such partnerships to thrive.

Critical Assessment

Indian Agriculture Towards 2030 is an insightful and well-researched book that addresses the key challenges facing Indian agriculture. It takes a comprehensive approach, exploring the interconnected issues of food security, environmental sustainability, and socio-economic inclusivity. The interdisciplinary perspective—incorporating economics, environmental science, and policy—provides readers with a holistic understanding of the agricultural transformation required in India.

One of the book's main strengths is its emphasis on the role of smallholder farmers in achieving agricultural transformation. By focusing on farmers who are often marginalized in policy discussions, the book draws attention to the need for inclusive growth. The detailed discussions on technological innovation and climate resilience are also timely and relevant, given the ongoing challenges posed by climate change.

However, while the book offers valuable theoretical insights, there is a lack of detailed empirical case studies that could further strengthen the book's recommendations. Real-life examples of successful interventions, particularly those implemented in rural India, would make the book more applicable for practitioners in the field.

Conclusion

Indian Agriculture Towards 2030 is a timely and essential read for anyone interested in the future of Indian agriculture. It provides a comprehensive and well-rounded analysis of the challenges and opportunities facing the sector and offers practical pathways to enhance farmers' income, nutritional security, and the sustainability of food systems. As India works towards achieving the SDGs by 2030, this book provides critical insights into how

agricultural policies must evolve to meet the needs of both farmers and consumers while ensuring environmental sustainability.

By addressing pressing issues like climate change, water management, and the role of science and technology, the editors have crafted a forward-thinking work that will be invaluable to policymakers, researchers, and practitioners involved in shaping the future of agriculture in India. Ultimately, this book is a call to action for all stakeholders to collaborate in achieving a more resilient, inclusive, and sustainable agricultural system.

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