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Transforming Agricultural Policy and Governance: A Roadmap for Sustainable Growth and Global Competitiveness

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ABSTRACT

Agriculture is the cornerstone of India's economy, providing livelihoods to over 55% of the population and contributing significantly to GDP. However, policy inconsistencies, market inefficiencies, climate change, and limited access to modern technology continue to challenge the sector's sustainability and growth. This research explores the critical role of policy and governance in agriculture, analyzing key areas such as agricultural research, trade policies, investment trends, technology adoption, and climate resilience.

Drawing from sources such as the Economic Survey of India (2024-25), OECD Agricultural Outlook (2024), FAO Global Trade Report (2024), and World Bank Agricultural Development Report (2023), the study highlights the need for stable policies, enhanced infrastructure, and farmer-centric digital transformation. Strengthening institutional frameworks, promoting sustainable farming practices, and integrating global trade mechanisms will be crucial for India's agricultural future. A systematic policy overhaul is necessary to ensure long-term food security, economic viability, and climate resilience for farmers and stakeholders.

Keywords: *Agricultural Policy in India, Agricultural Governance, Sustainable Agriculture*

Introduction

Agriculture is the foundation of India's economy, employing over 55% of the population and contributing significantly to the country's GDP. However, the sector faces persistent challenges, including fragmented land holdings, unpredictable climate conditions, inadequate infrastructure, and limited access to credit and technology. Policy and governance in agriculture must evolve to address these issues while ensuring sustainability, inclusivity, and economic viability. A strategic approach combining technology-driven interventions, market reforms, and climate-resilient practices is critical for the future of Indian agriculture.

Historically, India's agricultural policies have focused on food security, leading to the Green Revolution in the 1960s, which increased production but also caused soil degradation and water depletion. Modern policy initiatives such as Pradhan Mantri Kisan Samman Nidhi (PM-KISAN), Pradhan Mantri Fasal Bima Yojana (PMFBY), and the Digital Agriculture Mission aim to enhance farmer welfare and productivity

(Ministry of Agriculture, 2024). However, gaps remain in policy implementation, market accessibility, and financial inclusivity for smallholder farmers.

Global institutions like the Food and Agriculture Organization (FAO), OECD, and the World Bank emphasize the need for agroecological approaches, precision farming, and fair-trade policies to build a resilient agricultural system. As climate change threatens food security, governance frameworks must prioritize sustainable farming, efficient resource utilization, and investment in agritech. The Economic Survey of India 2024-25 underscores the importance of an integrated policy approach that uses digitalization, improved supply chains, and institutional support to drive agricultural growth (Economic Survey of India, 2024).

The Structural Gaps in Agricultural Policy and Governance

Agricultural policy and governance in India have evolved over the decades, yet critical structural gaps persist, preventing the sector from achieving its full potential. Despite large-scale interventions such as Pradhan Mantri Kisan Samman Nidhi (PM-KISAN), Pradhan Mantri Fasal Bima Yojana (PMFBY), and the Agriculture Infrastructure Fund (AIF), the sector remains burdened by institutional inefficiencies, market distortions, and financial constraints. Reports from the OECD, FAO, and Economic Survey of India 2024-25 highlight the urgent need for systemic reforms to address these deep-rooted challenges (OECD, 2024; FAO, 2024; Economic Survey, 2024).

One of the most significant structural issues is policy fragmentation and regulatory overlaps. Agriculture falls under the jurisdiction of both the central and state governments, leading to inconsistencies in policy execution. For example, while the central government formulates MSP (Minimum Support Price) policies, their implementation varies widely across states, resulting in regional disparities in procurement and benefits. The lack of policy coherence creates confusion among farmers and reduces the effectiveness of national-level initiatives.

Another major gap is financial accessibility for small and marginal farmers. While the Kisan Credit Card (KCC) scheme has expanded credit access, over 30% of farmers still rely on informal credit sources due to strict lending requirements and inadequate banking infrastructure in rural areas (Economic Survey, 2024). Additionally, insurance claims under PMFBY are often delayed, reducing farmer trust in risk mitigation mechanisms.

Market inefficiencies further exacerbate governance challenges. While e-NAM (National Agriculture Market) was introduced to create a unified digital marketplace, only 1,389 mandis have been integrated as of 2024, leaving thousands of local markets disconnected (Ministry of Agriculture, 2024). The dominance of middlemen in traditional agricultural markets prevents fair price realization for farmers, limiting their bargaining power.

Technology adoption is another area where governance falls short. Despite initiatives like the Digital Agriculture Mission, rural connectivity and digital literacy remain significant barriers. OECD and FAO reports suggest that digital transformation can enhance productivity, yet only 20% of Indian farmers have direct access to precision farming tools or real-time market intelligence (OECD, 2024; FAO, 2024).

The Political Economy of Agriculture: Who Controls Policy Narratives?

Agricultural policies are not merely technical or economic instruments but are deeply embedded in political and institutional structures. The control of policy narratives in agriculture is shaped by multiple stakeholders, including governments, corporate agribusinesses, financial institutions, farmer unions, and international organizations such as the World Bank, FAO, and

OECD (OECD, 2024). The struggle between these actors determines how agricultural governance is framed, implemented, and revised over time. The policies influencing India's agricultural sector reflect this complex interplay of interests, often favoring dominant players while marginalizing smallholder farmers.

Historically, agricultural policy in India has been dictated by food security concerns, leading to government interventions such as the Green Revolution, Minimum Support Price (MSP) system, and public procurement programs (Economic Survey of India, 2024). However, in recent decades, private agribusinesses, multinational corporations, and global trade agreements have increasingly influenced the policy space. The entry of contract farming, deregulation of markets, and agritech investments are largely driven by economic liberalization and WTO commitments (World Bank, 2024). While these reforms are projected to enhance efficiency, concerns persist over their impact on land ownership, smallholder competitiveness, and price volatility.

Farmer movements, particularly in developing countries, play a critical role in shaping counter-narratives against corporatization. The year-long farmer protests in India (2020-2021) over the now-repealed farm laws illustrate how policy resistance can emerge from grassroots mobilization (FAO, 2024). Despite their advocacy, institutional constraints, bureaucratic inertia, and political alliances often limit their influence on policymaking. The role of international financial institutions, such as the IMF and WTO, in shaping subsidy structures and agricultural exports further reinforces asymmetrical power dynamics in the sector.

Media and think tanks also contribute to shaping agricultural narratives. Reports from NITI Aayog, IFPRI, and research publications by Indian academic institutions often inform government decisions. However, the predominance of corporate-backed research funding has raised concerns about biased policy recommendations favoring agribusiness over farmer welfare (NITI Aayog, 2024).

Reforming Agricultural Research and Extension Systems for Future-Ready Farming

Agricultural research and extension systems also plays a crucial role in modernizing farming practices, increasing productivity, and ensuring sustainability. In India, institutions such as the Indian Council of Agricultural Research (ICAR) and Krishi Vigyan Kendras (KVKs) have been at the forefront of agricultural research and technology dissemination. However, gaps remain in technology adoption, farmer awareness, and last-mile connectivity, making reforms essential for creating a future-ready farming system.

The Economic Survey of India 2024-25 highlights that agricultural research spending in India remains low compared to global standards, at just 0.3% of agricultural GDP, while developed nations allocate above 1% (Economic Survey of India, 2024). This underinvestment limits innovations in climate-resilient seeds, precision farming, and agroecology. Strengthening research funding and fostering public-private partnerships in agritech can accelerate the development of advanced seed varieties, AI-driven analytics, and real-time weather forecasting tools.

One of the biggest challenges in agricultural research is the slow dissemination of new technologies to farmers. While KVKs are designed to bridge this gap, their reach is still limited, especially in remote regions. According to the OECD Agricultural Policy Review 2024, only 30% of smallholder farmers in India have access to modern farming knowledge (OECD, 2024). Digital platforms such as eNAM, AgriStack, and AI-powered advisory systems can revolutionize extension services by providing customized agronomic recommendations, weather alerts, and market trends directly to farmers' smartphones.

Farmer-led research and participatory approaches can further enhance extension services. The Food and Agriculture Organization (FAO) suggests that involving farmers in on-field trials and co-developing solutions can improve adoption rates of sustainable practices (FAO, 2024). Encouraging decentralized research models at state agricultural universities and local research centers can ensure that innovations are region-specific and address local challenges such as soil fertility, pest resistance, and climate adaptation.

Capacity building and skill development are equally important. The World Bank's Agriculture Development Report 2023 stresses the need for integrating vocational training, AI-driven decision support systems, and farmer cooperatives to make research more accessible and actionable (World Bank, 2023). The introduction of digital farmer extension networks, drone-based soil monitoring, and blockchain-backed supply chains can significantly improve efficiency.

The Role of International Trade and Investment in Agriculture

India, being one of the world's largest producers of rice, spices, pulses, and dairy, has a significant stake in global agricultural trade. However, trade barriers, fluctuating export policies, and inadequate infrastructure often hinder its full potential. Strengthening international trade agreements, foreign direct investment (FDI), and agribusiness partnerships is essential for boosting India's agricultural economy.

India's agricultural exports reached ₹4.34 lakh crore in 2024-25, driven by high global demand for basmati rice, spices, and processed foods (APEDA, 2024). However, restrictive policies such as export bans on essential commodities like wheat and sugar create market instability. The OECD Agricultural Outlook 2024 highlights that inconsistent trade policies discourage long-term investments in agribusiness (OECD, 2024). A more predictable and stable export policy framework is needed to ensure farmer profitability and global competitiveness.

Foreign Direct Investment (FDI) in agriculture has been rising, with $12.58 billion inflows into food processing between 2000-2024 (DPIIT, 2024). Multinational food companies are increasingly investing in India's agritech sector, bringing innovations in precision farming, supply chain logistics, and food processing technologies. However, bureaucratic red tape, complex land acquisition laws, and regulatory uncertainties deter further investments. The World Bank's Agricultural Development Report 2023 suggests that simplifying investment procedures, offering tax incentives, and ensuring contract enforcement can attract more foreign capital into agribusiness (World Bank, 2023).

Global trade agreements also impact Indian agriculture. India's engagement with ASEAN, the European Union (EU), and African nations has opened new export opportunities. However, high import duties and sanitary regulations in partner countries pose challenges. The FAO's Global Trade Report 2024 emphasizes that harmonizing food safety standards, improving traceability, and upgrading logistics infrastructure can enhance India's market access (FAO, 2024).

Infrastructure development is key to improving agricultural trade. The Economic Survey of India 2024-25 highlights that inadequate cold storage facilities, inefficient port logistics, and fragmented supply chains lead to post-harvest losses of up to 15% (Economic Survey of India, 2024). Investing in modern warehousing, blockchain-based food traceability, and digital trade platforms can improve export efficiency.

The Way Forward: A Systemic Overhaul of Agricultural Governance

The need for a systemic overhaul in agricultural governance has never been more urgent. Recent reports from the OECD (2024), FAO (2024),

and the Economic Survey of India 2024-25 highlight the necessity for policy integration, decentralized decision-making, and digital innovations to enhance agricultural productivity and sustainability. Moving forward, a farmer-centric, technology-driven, and market-responsive governance framework is essential to build a resilient agricultural ecosystem that ensures both equity and efficiency.

A fundamental issue in agricultural governance is the fragmentation of policy implementation across central and state levels. While flagship schemes like PM-KISAN, PMFBY, and e-NAM have improved financial security and market access, the lack of coordination between different government bodies leads to inefficiencies and delays in fund allocation and policy execution. Decentralizing decision-making and empowering state-level agricultural bodies and Panchayati Raj institutions can bridge this gap. A region-specific approach, considering diverse agro-climatic zones, will be crucial for ensuring policy relevance and effectiveness.

The adoption of digital agriculture is another transformative step for governance reform. The Digital Agriculture Mission (2024) aims to integrate AI, blockchain, and remote sensing into farming, but its success depends on farmer inclusivity. Bridging the digital divide through affordable technology access, digital literacy programs, and last-mile connectivity must be prioritized. The Agristack initiative, which creates a federated database of farmers, holds promise for streamlining subsidies, crop insurance claims, and market linkages, provided concerns around data security and accessibility are adequately addressed.

Market reforms are equally vital for governance transformation. The Minimum Support Price (MSP) mechanism, while crucial for price stability, needs restructuring to encourage crop diversification. The introduction of contract farming regulations and private-sector investments in agriculture should be complemented by robust monitoring mechanisms to prevent exploitation. Additionally, strengthening rural credit systems and agri-financing through Kisan Credit Cards (KCC) and cooperative banking reforms can empower small farmers with greater financial independence.

Finally, climate resilience must be embedded into governance frameworks. Sustainable agricultural practices such as precision farming, organic agriculture, and micro-irrigation should be incentivized through policy-backed support. The National Adaptation Fund for Climate Change (NAFCC) and Per Drop More Crop scheme are positive steps, but scaling these initiatives through public-private partnerships can enhance their reach and impact.

Conclusion

Agriculture remains the backbone of India's economy, providing livelihoods to over 55% of the population. However, structural inefficiencies, policy inconsistencies, and climate vulnerabilities continue to hinder the sector's full potential. A comprehensive approach to policy and governance is essential to create a sustainable, technology-driven, and globally competitive agricultural ecosystem. The success of India's agricultural sector will depend on the synergy between research, technology adoption, trade policies, investment, and farmer-centric reforms.

The Economic Survey of India 2024-25 underscores the need for long-term policy stability, investment in digital agriculture, and a shift towards climate-smart farming practices (Economic Survey of India, 2024). While programs like PM-KISAN, e-NAM, and the Agriculture Infrastructure Fund have improved farmer welfare, gaps remain in implementation, financial accessibility, and extension services. Strengthening research institutions like ICAR, promoting agritech innovation, and encouraging public-private partnerships can bridge these gaps.

India must also align its agricultural trade policies with global best practices to enhance market access. The OECD Agricultural Outlook 2024 highlights that removing export restrictions, improving sanitary standards, and modernizing supply chains will boost India's global competitiveness (OECD, 2024). Additionally, foreign direct investment in agribusiness must be encouraged through transparent regulations and infrastructure upgrades to attract global capital (World Bank, 2023).

A farmer-first approach, backed by predictable policies, technological advancements, and sustainable practices, is the way forward. The Food and Agriculture Organization (FAO) emphasizes that empowering farmers through knowledge, financial support, and fair market access is key to long-term agricultural resilience (FAO, 2024).

In the face of climate change, food security concerns, and evolving consumer demands, India's agricultural governance must be proactive, inclusive, and forward-thinking. By embracing innovation, strengthening institutions, and ensuring equitable policies, the sector can emerge as a global leader in sustainable agriculture, securing food and economic stability for future generations.

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