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## Indian Agriculture Today: Challenges and Opportunities in a Changing Scenario

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Agriculture is one of the oldest and prime activities of the human being. It includes growing crops, horticulture, pisciculture, sericulture, silviculture,



floriculture, etc. The development of agriculture depends on fertile soil, rainfall, water resources, suitable climatic conditions, levelled topography, water vapour or humidity in the atmosphere, fertilizers and chemicals, improved seeds, and modern forms of technology, etc. In developing countries, the agriculture sector has been a major source of employment and it has contributed to the national economy. India is global agricultural powerhouse. Indian agriculture has long been the backbone of the nation's economy, employing millions of people and providing sustenance to a vast population. As we stand in the present, Indian agriculture is at a critical juncture, marked by a complex web of challenges and opportunities. This article delves into the current condition of Indian agriculture, highlighting key issues and exploring potential pathways for its transformation.

### Agriculture as a Cornerstone of India's Economy

Indian agriculture contributes significantly to the country's GDP and employment. It is the primary source of livelihood for about 58% of the population, engaging in diverse agricultural practices across regions. Indian agriculture plays a pivotal role in the country's economy and society. It employs over half of the nation's workforce and provides essential food and raw materials for various industries. Many agro-based industries such as textile, leather, sugar, tea, etc., are dependent on the agricultural sector. Agribusiness is contributing greatly to the national income of India. Therefore, it is said that agriculture is the backbone of the Indian economy. Agricultural exports constitute around a fifth of the total exports of the country. The sector's significance goes beyond economics, encompassing cultural and social dimensions, making it an integral part of India's identity. This sector's resilience and adaptability have been evident in the face of various challenges, including changing climate patterns, pest infestations, and market fluctuations.



## Challenges Facing Indian Agriculture

1. **Fragmented Landholdings:** One of the most pressing issues in Indian agriculture is the fragmentation of landholdings. Small and marginal farmers often struggle to make ends meet due to limited access to resources and economies of scale.

2. **Instability:** Agriculture in India largely depends on monsoon. As a result, production of food-grains fluctuates year after year. A year of abundant output of cereals is often followed by a year of acute shortage.

3. **Water Scarcity:** Depleting groundwater levels and erratic monsoons pose a significant threat to agricultural sustainability. Water management practices need innovation and modernization.

4. **Market Access and Price Volatility:** Farmers often face challenges in accessing markets and obtaining fair prices for their produce. The lack of efficient supply chains and market linkages is a persistent issue. Agricultural marketing still continues to be in a bad shape in rural India. In the absence of sound marketing facilities, the farmers have to depend upon local traders and middlemen for the disposal of their farm produce which is sold at throw-away price.

5. **Irrigation:** Although India is the second largest irrigated country of the world after China, only one-third of the cropped area is under irrigation. Irrigation is the most important agricultural input in a tropical monsoon country like India where rainfall is uncertain, unreliable and erratic. India cannot achieve sustained progress in agriculture unless and until more than half of the cropped area is brought under assured irrigation.

6. **Technology Adoption:** While technology adoption has been on the rise, there is a need for greater dissemination of advanced agricultural practices, including the use of precision farming, biotechnology, and AI-driven solutions.

7. **Climate Change:** Increasingly unpredictable weather patterns are affecting crop yields and pushing farmers into cycles of debt and vulnerability.

8. **Inadequate transport:** One of the main handicaps with Indian agriculture is the lack of cheap and efficient means of transportation. Even at present there are lakhs of villages which are not well connected with main roads or with market centres.

9. **Lack of mechanisation:** In spite of the large-scale mechanisation of agriculture in some parts of the country, most of the agricultural operations in larger parts are carried on by human hand using simple and conventional tools and implements like wooden plough, sickle, etc. Little or no use of machines is made in ploughing, sowing, irrigating, thinning and pruning, weeding, harvesting, threshing and transporting the crops.



## Government Initiatives and Policy Interventions

The Indian government has implemented several initiatives to address these challenges:

1. **Pradhan Mantri Kisan Samman Nidhi (PM-KISAN):** This income support scheme provides direct cash transfers to farmers, offering them financial stability. The Pradhan Mantri Kisan Samman Nidhi (PM-KISAN), a Central Sector Scheme, aims at providing financial assistance to all cultivable landholding farmer families across the country, subject to

certain exclusion criteria. Under the Scheme, an amount of Rs. 6000/- is transferred annually in three equal installments of Rs.2000/- directly into the Aadhaar Seeded bank accounts of the farmers.

**2. National Mission for Sustainable Agriculture (NMSA):** National Mission for Sustainable Agriculture (NMSA) has been formulated for enhancing agricultural productivity especially in rain fed areas focusing on integrated farming, water use efficiency, soil health management and synergizing resource conservation. Aimed at promoting sustainable.

**3. Agricultural Infrastructure Fund:** Agriculture Infrastructure Fund Scheme is a top-up scheme along with all other available state and central government schemes. Any grant or subsidy available under any present or future scheme of Central/State government can be availed for projects in addition to this financing facility. To boost post-harvest infrastructure and strengthen supply chains.

**4. E-NAM (Electronic National Agriculture Market):** e-NAM or the e-trading platform (online trading portal) for the National Agriculture Market (NAM) was launched by the Prime Minister of India, on April 2016. A pan-India electronic trading portal, connecting agricultural produce markets to facilitate transparent pricing and efficient marketing. The e-NAM project would operate via the online portal that is linked to the states' Mandis (Wholesale markets). All the participating states will be providing the software (Website and Mobile Application) for e-NAM at no cost.

### The Way Forward

- 1. Diversification:** Encouraging farmers to diversify into high-value crops, horticulture, and allied activities can reduce dependence on traditional crops and stabilize incomes.
- 2. Irrigation Modernization:** Invest in modern irrigation techniques like drip and sprinkler systems, coupled with efficient water management practices.
- 3. Market Reforms:** Continued efforts to reform agricultural markets, promote contract farming, and strengthen market linkages are essential.
- 4. Technology Adoption:** Promote the use of technology and provide training and support to small and marginal farmers.
- 5. Sustainable Agriculture:** Encourage sustainable and organic farming practices to mitigate climate change impacts.

### Conclusion

The current condition of Indian agriculture is at a crossroads, with challenges that require innovative solutions and proactive policies. By addressing land fragmentation, water scarcity, market access, and climate change, India can usher in a new era of agriculture that is more resilient, sustainable, and profitable for its millions of farmers. The government's initiatives are a step in the right direction, but sustained efforts, collaboration, and investments are essential to ensure a thriving future for Indian agriculture.