



## Reimagining India's Agriculture Landscape

This editorial is based on [“Challenge for farm sector: How to share growth gains”](#) which was published in The Indian Express on 04/06/2024. The article brings into picture the challenges facing Indian agriculture and emphasizes the need for substantial policy reforms.

**For Prelims:** Agriculture Sector's Contribution to GDP, [Periodic Labour Force Survey](#), [Minimum Support Prices](#), [National Mission on Sustainable Agriculture](#), [Paramparagat Krishi Vikas Yojana](#), [Sub-mission on AgroForestry](#), [Rashtriya Krishi Vikas Yojana](#), [AgriStack](#), [National e-Governance Plan in Agriculture \(NeGP-A\)](#), [Pradhan Mantri Kisan Samman Nidhi](#), [Agriculture Infrastructure Fund](#)

**For Mains:** Significance of the Agriculture Sector in the Indian Economy, Current Major Challenges Related to India's Agriculture Sector.

As India embarks on its journey towards a **developed economy**, the agriculture sector faces a daunting path riddled with challenges. **Irreversible climate change**, the constraints imposed by the **World Trade Organization**, the prevalence of **small landholdings**, global pressure to keep food prices low at the expense of farmers' incomes, and depleting aquifers are some of the critical circumstances that limit our ability to ensure dignified livelihoods for farmers.

The key challenge lies not only in improving productivity but also in **ensuring that the gains are sustainable and inclusive**. It is high time that India undertakes much-needed reforms in the agriculture sector.

### What is the Significance of the Agriculture Sector in the Indian Economy?

- **Contribution to GDP:** Agriculture accounts for around **15-16% of India's Gross Domestic Product (GDP)**. This underscores the sector's pivotal role in the overall economic growth and development of the nation.
  - During the **Covid-19 pandemic**, while many sectors experienced a downturn, the agriculture sector remained resilient contributing **18.8% of Gross Value Added (GVA)** of the country in 2021-22.
- **Employment Generation:** [Periodic Labour Force Survey \(PLFS\)](#) report for 2021-22 (July-June) shows the farm sector's share in the country's employed labor force at **45.5%**.
  - This highlights its crucial role in providing employment opportunities, especially in **rural areas**, where a majority of the population is engaged in **agricultural and allied activities**.
- **Food Security:** With a population of over 1.3 billion, ensuring food security is a critical priority for India.
  - The agriculture sector plays a vital role in meeting the country's food demand, producing various staple crops like **rice, wheat, pulses, and vegetables**.

- **Foreign Exchange Earnings:** [Agricultural exports](#) remain a significant contributor to foreign exchange earnings with over **USD 56 billion of exports in 2021.**
  - India is currently the world's largest producer of **milk and pulses** and the second-largest producer of **wheat and rice.**
- **Raw Material Provider For Industries:** The agriculture sector not only meets domestic food demand but also provides **raw materials for various industries**, such as cotton for the [textile industry](#), **sugarcane for the sugar industry**, and oilseeds for the edible oil industry.
  - This creates strong backward and forward linkages with other sectors of the economy.
  - It acts as a backbone for the **Ethanol Economy.**
- **Strategic Significance:** Self-sufficiency in food production is a strategic necessity for any nation.
  - A robust agricultural sector reduces dependence on foreign imports and ensures food security during unforeseen circumstances.
  - This is especially important for a country like **India** with a large population.
    - India has transformed from being derisively referred to as a begging bowl to becoming a net agricultural exporter.

## What are the Current Major Challenges Related to India's Agriculture Sector?

- **Fragmented Landholdings:** Decades of population growth and inheritance laws have resulted in the division of agricultural land into increasingly smaller parcels.
  - As per the **Situation Assessment Survey (SAS) of Agricultural Households by National Sample Survey Office**, the percentage distribution of agricultural households owning less than **two hectares of land is 89.4%**, hindering mechanization, economies of scale, and overall productivity.
- **Menace of Climate Change:** Erratic monsoon patterns, rising temperatures, and unpredictable disruption of crop yields and agricultural planning.
  - In 2022, India experienced an **early series of heat waves that affected its wheat production**, leading the country to impose a ban on exports.
    - Cyclones excreted by climate change significantly impact Indian agriculture by causing widespread crop damage, soil erosion, leading to substantial economic losses and supply chain distortion.
    - Also, in absence of adoption of adaptation measures, rainfed rice yields in India are projected to reduce by **20% in 2050.**
- **Water Scarcity:** India faces a looming water crisis, with several regions experiencing over-exploitation of groundwater resources.
  - This, coupled with inadequate irrigation infrastructure, limits agricultural productivity.
  - Water level drops to **23%** in India's main reservoirs ([Central Water Commission](#)).
    - Also, Minimum Support Prices influences water-intensive crops like rice, and as India is the second-largest exporter of rice, it is perceived that **we are not only exporting rice but also water.**
- **Market Inefficiencies and Price Fluctuations:** Farmers often face a lack of access to well-developed markets and fair pricing for their produce.
  - **Middlemen and a complex supply chain** lead to a significant gap between farm-gate prices (what farmers receive) and consumer prices.
- **Inadequate Storage and Transportation Facilities:** [Post-harvest losses](#) due to poor storage infrastructure and inadequate transportation networks are a major concern.
  - **Perishable fruits and vegetables** are particularly vulnerable, leading to wasted produce and reduced farmer income.
  - Around **74 million tonnes** of food is lost in India every year, which is **22% of foodgrain output.**
- **Limited Access to Credit and Insurance:** Many farmers, especially small and marginal ones, struggle to access **affordable credit and crop insurance schemes.**
  - This limits their ability to invest in new technologies, improve infrastructure, and cope with agricultural shocks.
- **Soil Degradation and Resource Depletion:** Overuse of [chemical fertilizers](#), **imbalanced cropping patterns, and inadequate soil conservation** practices lead to soil degradation and depletion of essential nutrients.
  - This reduces land fertility and long-term productivity.
- **Inefficient Agriculture Policy:** A complex web of **overlapping central and state policies**,

coupled with a lack of effective implementation, often hinders progress.

- The recent controversy surrounding **Minimum Support Prices (MSPs)** exemplifies this challenge by **exposing the gap between policy and reality**.
  - Also, the MSP's influence on wheat and rice production is leading to extensive use of **chemical fertilizers**, resulting in protein-deficient food being transferred to the masses especially children and contributing to the **growing issue of hidden hunger**.
- The **Shanta Kumar Committee**, in its 2015 report, revealed that only **6% of Indian farmers** actually benefit from minimum support prices.
- **Stagnated Growth:** Despite employing around 42% of the labor force, agriculture contributes only 15% to GDP.
  - These inefficiencies not only hinder economic growth but also **exacerbate poverty and income inequality**, particularly in rural areas

## What are the Major Indian Government Initiatives Related to Agriculture?

- [National Mission on Sustainable Agriculture](#)
- [Paramparagat Krishi Vikas Yojana \(PKVY\)](#)
- [Sub-mission on AgroForestry \(SMAF\)](#)
- [Rashtriya Krishi Vikas Yojana](#)
- [AgriStack](#)
- [National e-Governance Plan in Agriculture \(NeGP-A\)](#)
- [Pradhan Mantri Kisan Samman Nidhi](#)
- [Agriculture Infrastructure Fund](#)

## What Measures can be Taken to Revitalize India's Agriculture Sector?

- **Implementing Agroecological Intensification:** Instead of relying on conventional high-input agriculture, explore and promote agroecological intensification approaches that **mimic natural processes, enhance biodiversity, and build resilience**.
  - This can involve practices like **permaculture, agroforestry, and regenerative agriculture**.
  - The **Zero Budget Natural Farming (ZBNF)** can be brought into practise.
- **Establishing Agricultural Innovation Clusters:** Developing agricultural innovation clusters or agri-parks that bring together **research institutions, agri-tech startups, farmer cooperatives, and related industries** in a collaborative ecosystem.
  - The "**Agri-Food Innovation Park**" in Singapore can be a model.
- **Implementing Drone-based Precision Agriculture:** Leveraging drone technology for precision agriculture applications, such as **targeted crop monitoring, variable rate input application, and early detection of pest and disease** outbreaks, improving efficiency and reducing resource wastage.
- **Genetic Editing Techniques for Crop Improvement:** Exploring the potential of genetic editing techniques like **CRISPR-Cas9** for developing climate-resilient, disease-resistant, and high-yielding crop varieties in a more precise and efficient manner compared to traditional breeding methods.
  - In maize, novel variants of **ARGOS8** were produced using the **CRISPR-Cas9 system**, and this variant was more drought tolerant than the wild type.
- **Fostering Public-Private Partnerships for Agricultural Extension:** Encouraging public-private partnerships for agricultural extension services, leveraging the expertise of private companies, agri-tech startups, and non-governmental organizations to provide farmers with timely and **localized advice, training, and support**.
  - The **2% of India's GDP** currently dedicated to farm subsidies could be reallocated towards enhancing agricultural capacity and infrastructure.
- **Developing Agri-Logistics and Cold Chain Infrastructure:** Prioritize the development of efficient **agri-logistics and cold chain infrastructure** to minimize post-harvest losses and enhance market access for perishable commodities.
  - The "**Kisan Rail**" **initiative in India** can be complemented by initiatives in other modes of

transport.

- **Model Agriculture Policy:** A central **Model Agricultural Policy** can be crafted collaboratively, which can guide states to promote sustainable practices, efficient resource use, and empower farmers through better infrastructure and market access.
  - While state adaptation is crucial, a **unified framework** can pave the way for a more resilient agricultural future for India.
  - There is a high time to place **agriculture marketing in the Concurrent list as per the Ashok Dalwai Committee.**
    - It also suggested a permanent inter-ministerial committee, including commerce, consumer affairs and agriculture.
    - This would monitor domestic and global prices, recommending needed changes.

**Drishhti Mains Question:**

India's agricultural sector forms the lifeblood of its economy. However, it grapples with numerous hurdles. Critically evaluate these challenges and propose solutions that transcend the limitations of existing government policies.

## UPSC Civil Services Examination Previous Year Question (PYQ)

### **Prelims:**

**Q1. Under the Kisan Credit Card scheme, short-term credit support is given to farmers for which of the following purposes? (2020)**

1. Working capital for maintenance of farm assets
2. Purchase of combine harvesters, tractors and mini trucks
3. Consumption requirements of farm households
4. Post-harvest expenses
5. Construction of family house and setting up of village cold storage facility

**Select the correct answer using the code given below:**

- (a) 1, 2 and 5 only
- (b) 1, 3 and 4 only
- (c) 2, 3, 4 and 5 only
- (d) 1, 2, 3, 4 and 5

**Ans: (b)**

**Q. Consider the following statements: (2017)**

1. The nation-wide 'Soil Health Card Scheme' aims at expanding the cultivable area under irrigation.
2. Enabling the banks to assess the quantum of loans to be granted to farmers on the basis of soil quality.
3. Checking the overuse of fertilizers in farmlands.

**Which of the above statements is/are correct?**

- (a) 1 and 2 only
- (b) 3 only
- (c) 2 and 3 only

(d) 1, 2 and 3

Ans: (b)

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**Mains**

**Q.** How is science interwoven deeply with our lives? What are the striking changes in agriculture triggered by science-based technologies? **(2020)**

**Q.** Given the vulnerability of Indian agriculture to vagaries of nature, discuss the need for crop insurance and bring out the salient features of the Pradhan Mantri Fasal Bima Yojana (PMFBY). **(2016)**

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