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4. India's Agricultural Transformation - Economy

Over the last decade, India has shifted from a welfare-centric approach to a farmer-centric model focused on productivity, sustainability, and technological modernization. Agricultural and allied sector GVA increased from ₹20.9 lakh crore (2014-15) to ₹48.7 lakh crore (2023-24), foodgrain production reached 357.73 million tonnes (2024-25), and agricultural exports rose to USD 51.1 billion (FY 2024-25). Agriculture employs 46.1% of India's workforce, supports ~55% of total population, and contributes approximately 19-20% of India's GVA — making its transformation central to Viksit Bharat 2047 vision.

1. Agriculture Sector in India

Key Statistics

1. **Workforce share -** Agriculture and allied activities employ **46.1% of India's workforce**
2. **Livelihood reliance -** Supports **~55% of total population** providing critical rural income security
3. **Economic contribution - ~19-20% of India's Gross Value Added (GVA)**
4. **Growth rate -** Agriculture and allied sectors recorded **4.6% growth in 2024-25** (real GVA growth) driven largely by livestock, fisheries

2. Major Achievements in India's Agricultural Transformation

Agricultural Output and Economic Contribution

1. Agricultural and allied sector GVA - ₹20.9 lakh crore (2014-15) → **₹48.7 lakh crore (2023-24)**
2. Foodgrain production - **357.73 million tonnes (2024-25)**
3. Budget allocation for Department of Agriculture and Farmers Welfare - **₹1,40,528.78 crore (2026-27)**
4. Agricultural exports - **USD 51.1 billion (FY 2024-25);** processed food share increasing to **20.4%** signaling value-added growth

3. Major Challenges Faced by Agricultural Sector

Water Scarcity and Irrigation

1. Agriculture heavily dependent on monsoon rain — vulnerable to droughts, inconsistent rainfall
2. Limited access to irrigation facilities particularly in water-scarce regions
3. Only ~52% of net sown area under irrigation

Lack of Access to Credit and Finance

1. Small, marginal farmers facing difficulties accessing credit, financial services
2. High dependence on informal moneylenders at exploitative rates
3. MUDRA, KCC (Kisan Credit Card) partially addressing but gaps persist

Small Landholdings

1. Average landholding - ~1.08 hectares (fragmented, uneconomical)
2. Challenges in adopting modern methods, technologies
3. Resulting in lower productivity, inability to benefit from economies of scale

Outdated Farming Practices

1. Significant portion of farmers relying on traditional, outdated methods
2. Low mechanization levels especially in smallholder farming
3. Limited awareness of improved seed varieties, precision agriculture

Market Volatility and Price Fluctuations

1. Lack of effective market linkages, intermediaries, price information

2. Distress selling at harvest time reducing farmer income
3. Inadequate cold chain, warehousing causing post-harvest losses (~15-20% of produce)

Soil Degradation

1. **~30% of India's total land** suffering from soil degradation
2. Intensive chemical-based practices depleting soil health
3. Overuse of urea, pesticides alongside declining organic matter
4. Nutrient imbalance affecting soil fertility, ecosystem services

Rising Input Costs

1. Green Revolution model reaching diminishing returns
2. Input costs rising faster than returns
3. Driving indebtedness, farmer suicides (Maharashtra, Karnataka, Telangana most affected)

Climate Change Impacts

1. Rising temperatures, erratic rainfall, floods, droughts, extreme weather events
2. Threatening agricultural productivity, food security
3. Projected yield losses of 10-40% for major crops by 2080 without adaptation

4. Shift - Welfare-Centric to Farmer-Centric Model

From Subsidy-Based Support to Income Security

1. **Earlier -** Input subsidies on fertilizers, electricity, irrigation, food procurement
2. **Now - PM-KISAN** providing direct income support through Direct Benefit Transfer (DBT)
    1. ₹6,000 per year in three installments directly to farmers
    2. Greater financial autonomy, reduced leakages
    3. 11 crore+ farmer families benefiting

From Relief Measures to Risk Management

1. **Earlier -** Post-disaster compensation after crop losses (reactive)
2. **Now - Pradhan Mantri Fasal Bima Yojana (PMFBY)** and weather-based advisories (pre-emptive)
    1. Strengthening climate resilience, risk mitigation
    2. Coverage expanding to horticulture, vegetables

From Beneficiaries to Stakeholders

1. **Earlier -** Farmers viewed primarily as recipients of government assistance
2. **Now -** Farmer empowerment through -
    1. **FPOs (Farmer Producer Organizations) -** 10,000 FPOs target; collective bargaining, market access
    2. Cooperatives, digital platforms, entrepreneurship
    3. Participation in value chains

From Production-Centric to Income-Centric Policies

1. **Earlier -** Maximizing foodgrain production for food security
2. **Now -** Focus on doubling farmers' income through -
    1. Diversification into horticulture, livestock, fisheries, beekeeping
    2. Value addition, agro-processing
    3. PM-KISAN, PM-AASHA (price support), e-NAM (digital markets)

5. Key Government Initiatives

Initiative	Key Feature
PM-KISAN	₹6,000/year direct income support via DBT

PM Fasal Bima Yojana (PMFBY)	Crop insurance covering yield, weather risks
e-NAM (National Agriculture Market)	Digital platform for online agricultural trading
PM Krishi Sinchai Yojana	"Har Khet Ko Pani, More Crop Per Drop"
Soil Health Card Scheme	Soil testing providing nutrient management advice
PM-AASHA	Price support, procurement for oilseeds, pulses
Kisan Credit Card (KCC)	Short-term credit for farming operations
Agri Infrastructure Fund	₹1 lakh crore for post-harvest, farm infrastructure
Natural Farming Mission	Zero Budget Natural Farming promotion
Digital Agriculture Mission	Agri-stack, drone didi, precision farming

6. Way Forward

Diversification

1. Shift from cereal-centric cultivation to horticulture, dairy, livestock, fisheries, sericulture, beekeeping, agro-forestry
2. Enhancing farm incomes, reducing dependence on few crops
3. Better price realization through value chain integration

Expand Micro-Irrigation

1. Drip and sprinkler technologies improving water-use efficiency
2. Reducing water consumption 30-50% compared to flood irrigation
3. PM Krishi Sinchai Yojana acceleration

Strengthen FPOs and Cooperatives

1. Improve aggregation, bargaining power, credit access, market linkages
2. Target 10,000 FPOs with equity grants, credit guarantees
3. AMUL model replication in vegetables, fruits, fisheries

Food Processing and Cold Chain

1. Reduce post-harvest losses (currently 15-20% of produce)
2. Increase farmers' share in consumer prices
3. PLI scheme for food processing, Mega Food Parks

Technology and Agri-Tech

1. Encourage startups, agri-tech innovations, data-driven farming
2. AI, IoT, satellite imagery for precision agriculture
3. Drone-based crop monitoring, spraying
4. Digital soil health mapping

7. Conclusion

India's agricultural transformation from welfare-centric subsidies to farmer-centric income security (PM-KISAN), risk management (PMFBY), stakeholder empowerment (FPOs, cooperatives), and income diversification (horticulture, livestock, fisheries) represents a structural shift. With agricultural GVA nearly doubling (₹20.9→₹48.7 lakh crore), record foodgrain production (357.73 MT), and exports reaching USD 51.1 billion, foundations are strong. Addressing persistent challenges — soil degradation (30% land affected), irrigation dependence, small landholdings, input cost pressure, climate change — through diversification, micro-irrigation, food processing, agri-tech, and FPO strengthening will determine whether India achieves a competitive, climate-resilient, sustainable agri-food system for Viksit Bharat 2047.

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