

THE IMPACT OF GLOBLIZATION ON AGRICULTURAL TRANSFORMATION IN INDIA: OPPORTUNITIES AND CHALLENGES

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Abstract

Agriculture has long been the backbone of India's economy, contributing approximately 17% of GDP and employing over 58% of the workforce (World Bank, 2024). Globalization has brought sweeping changes, introducing foreign investments, advanced technology and international trade partnerships that have reshaped Indian agriculture. This paper examines how globalization has transformed the sector, shifting its focus from traditional consumption-based farming to commercialization and global market integration. The study is based on secondary data from scholarly research papers, international databases, and government statistics. Key findings reveal a significant decline in agriculture's GDP contribution (from 30% in 1991 to 16% in 2024) and a reduction in the workforce engaged in farming (from 60% to 45%), indicating a shift toward industrial and service-based employment. Agricultural exports surged from \$2.5 billion in 1991 to \$50.2 billion in 2024, reflecting improved trade policies and production efficiency. Additionally, Foreign Direct Investment (FDI) in agriculture grew from \$0.1 billion in 1991 to \$12.5 billion in 2024, fuelling modernization and precision farming techniques. Despite these advancements, challenges remain—small-scale farmers continue to struggle, economic disparities persist, environmental concerns grow due to intensive farming, and global competition pressures Indian agricultural markets. Policy reforms, sustainable farming practices, and stronger international collaborations will be critical in addressing these hurdles. This paper underscores the dual impact of globalization on Indian agriculture, highlighting both opportunities for growth and challenges requiring strategic intervention to ensure sustainable development in an evolving global landscape.

Key Words: Globalisation, Investment, Trade, Economy.

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Introduction:

Agriculture has been the backbone of India's economy, contributing approximately 17% of GDP and employing over 58% of the workforce (World Bank, 2024). Globalization has introduced foreign investments, advanced technology and international trade partnerships that have transformed the sector. The unfettered flow of people, products and services across boundaries is known as globalization. This movement is managed in a coordinated and integrated manner. It can also be seen as a strategy for global economic opening and the ensuing rise in trade. One of the principal nations that gained the most, India was the first country to introduce and implement globalization. Indian agriculture, which is strongly tied to the global market, has moved its focus from basic consumption to commercialization. Pauline Ahoy (2016) looks at the government policies that caused India's agrarian crisis and comes to the conclusion that liberalizing the seed industry not only attracts private sector players but also promotes the monoculture of hybrid cash crops that require expensive inputs and eventually result in debt. According to an Economic Times article titled "BT Cotton Story (2018)," Maharashtra is the state with the largest area under cultivation and the abrupt rise in pink bollworm infestation has sparked concerns about the long-term viability of the genetically modified crops. 90% of all cotton produced is made up of modified crops, which were brought about by globalization. Using North-East India as an example, Monjita Basumatary (2020) notes that the region's agriculture is characterized by geophysical circumstances and a restricted horizontal extension of cultivable land and that it makes a minimal contribution to economic development given that 80% of the majority of the population works in agriculture. Nugroho and Lakner (2022) looked into how agriculture in emerging nations was impacted by economic globalization: According to an assessment, emerging countries have seen a steady increase in economic globalization (EG) during the past 40 years. The agricultural industry is not exempt from both the advantages and disadvantages, that a sector may experience as a result of economic globalization. This paper examines the impact of globalization on agricultural transformation, highlighting opportunities alongside challenges.

Research Methodology:

The present study exploratory in nature and mainly based on the secondary data which is collected through various sources as like scholarly research papers, international databases and government statistics for examines impact of globalization on agricultural transformation, highlighting opportunities alongside challenges

Results and Discussion:

Table 1
Impact of Globalisation on Indian Agriculture

Aspect	Before Globalization (1991)	After Globalization (2024)
Agriculture's GDP Contribution	- 30%	16%
Workforce in Agriculture	-60%	45%
Growth Rate of Agriculture	-2%	3.8%
Small Farmers' Land Share	-55%	47.3%
FDI in Agriculture	Minimal	Increased

Sources: Data compiled by author from press information bureau Ministry of Statistics.

The table highlights key shifts in India's agricultural sector due to globalization and found that the agriculture sector's contribution to GDP has declined from -30% in 1991 to 16% in 2024, reflecting India's economic diversification toward industry and services and the percentage of the workforce engaged in agriculture has dropped from -60% to 45%, indicating a shift toward urban employment and mechanization. The agriculture sector's growth rate has improved from -2% to 3.8%, suggesting better productivity due to technological advancements and policy reforms and the share of land owned by small farmers has decreased from -55% to 47.3%, highlighting land fragmentation and challenges in landholding patterns. The Foreign Direct Investment in agriculture has increased significantly, supporting modernization, infrastructure development and precision farming.

Table 2
Agriculture Workforce Distribution

Category	Before Globalization (1991)	After Globalization (2024)
Total Workforce in Agriculture	60%	45%
Small Farmers (>2 hectares)	82%	86.2%
Medium Farmers (2-10 hectares)	15%	13.2%
Large Farmers (>10 hectares)	3%	0.6%

Sources: Data compiled by author from India Stat, Open Government Data (OGD) Platform India and PRS Legislative Research.

The table highlights key trends in India's agricultural workforce transformation due to globalization and indicate that the percentage of the workforce engaged in agriculture has declined from 60% in 1991 to 45% in 2024, indicating a shift toward industrial and service sectors and this suggests increased urbanization, mechanization, and diversification of employment opportunities. The proportion of small farmers has increased from 82% to 86.2%, showing a rise in land fragmentation and this could be due to population growth, inheritance-based land division and challenges in land consolidation. The percentage of medium-sized farmers has decreased from 15% to 13.2%, indicating a gradual reduction in mid-sized landholdings and this may be due to economic pressures forcing farmers to sell or divide their land. The proportion of large farmers has significantly dropped from 3% to 0.6%, reflecting a decline in large-scale farming and this could be due to land redistribution policies, urban expansion and increased corporate farming.

Table 3
Agriculture Export Growth

(in USD Billion)

Export Type	Before Globalization (1991)	After Globalization (2024)
Total Agricultural Exports	2.5	50.2
Rice Exports	1.2	12.3
Wheat Exports	0.5	8.7
Fruits & Vegetables	0.3	6.5

Sources: Data compiled by author from *Export Import Data*, *APEDA* and *Expedia*.

The table highlights the significant growth in India's agricultural exports due to globalization and found that India's agricultural exports surged from \$2.5 billion in 1991 to \$50.2 billion in 2024, reflecting improved trade policies, global demand and enhanced production efficiency. The rice exports increased from \$1.2 billion to \$12.3 billion, showing India's dominance in global rice markets, particularly with Basmati and non-Basmati varieties, the Wheat exports grew from \$0.5 billion to \$8.7 billion, indicating better yield, government support and international trade agreements and exports of fruits and vegetables rose from \$0.3 billion to \$6.5 billion, driven by improved cold storage facilities, processing technologies and global demand for Indian produce.

Table 4
Foreign Direct Investment in Agriculture
(in USD Billion)

Year	FDI Inflow	Sector Focus
1991	0.1	Basic Farming
2005	2.3	Agro-processing
2015	6.8	Agri-tech & Infrastructure
2024	12.5	Precision Farming & AI

Sources: Data compiled by author from *Open Government Data (OGD) Platform India*, *Reserve Bank of India (RBI) Annual Report* and *Invest India*.

The table highlights the increasing role of Foreign Direct Investment (FDI) in Indian agriculture, reflecting modernization and sectoral shifts and found that in the year 1991, Basic Farming (\$0.1 Billion) FDI was minimal, primarily focused on traditional farming with limited technological intervention. The sector relied heavily on domestic policies and government subsidies and in 2005, Agro-processing (\$2.3 Billion) Investment increased significantly, shifting towards food processing and value-added agricultural products. This period saw the rise of cold storage facilities, packaging innovations, and export-oriented production. Further found that in 2015, Agri-tech & Infrastructure (\$6.8 Billion) FDI expanded into modern irrigation systems, mechanization and digital platforms for farmers. The government encouraged smart farming techniques, leading to improved productivity and in 2024 Precision Farming & AI (\$12.5 Billion) The latest phase of investment focuses on AI-driven agriculture, drone technology and automated farming. Precision farming techniques help optimize water usage, soil health and crop yields.

Opportunities and Challenges Faced by Indian Agriculture Sector due to Globalisation:

Globalization has significantly influenced India's agricultural sector, bringing both opportunities and challenges such as:

Opportunities:

- **Market Expansion:** Agriculture contributes 16% of India's GDP, employing about 60% of the workforce.
- **Technological Advancements:** Since globalization, India has seen increased adoption of modern farming techniques, leading to a 3.8% growth in the farm sector in 2024–2025.

- **Foreign Direct Investment (FDI):** Globalization has led to increased FDI, improving infrastructure and storage facilities.
- **Diversification:** Indian agricultural exports, such as rice, spices, and cotton, have expanded globally, increasing farmers' income.

Challenges:

- **Competition:** Indian farmers face stiff competition from subsidized agricultural products from developed nations.
- **Economic Disparities:** Small-scale farmers, who make up 86.2% of all farmers, own only 47.3% of the crop area, while medium and large-scale farmers own 43.6%.
- **Environmental Concerns:** Intensive farming has led to soil degradation and water depletion.
- **Policy Adjustments:** The removal of subsidies has impacted the agricultural sector's expansion.
- **Climate Change Impact:** Globalization has heightened awareness of climate change, but Indian farmers still struggle with extreme weather conditions.

India's agricultural transformation under globalization is a complex interplay of progress and difficulties. While it has opened doors to innovation and economic growth, it has also posted significant hurdles that require strategic policy interventions and sustainable.

Conclusion:

Globalization has profoundly reshaped India's agricultural sector, driving modernization, economic growth and enhanced global trade opportunities. The transformation is evident in the declining agricultural workforce, improved productivity and rising foreign investments. The expansion of agricultural exports and the adoption of precision farming techniques have bolstered India's role in the global market. However, alongside these advancements, challenges persist economic disparities among farmers, environmental concerns, policy uncertainties and competition from subsidized foreign agricultural products. India's ability to navigate these obstacles while leveraging technological progress and investment-driven growth will determine the future sustainability of its

agricultural sector. Looking ahead, strategic policy reforms, innovation in sustainable farming and stronger global partnerships will be crucial in ensuring that India's agriculture continues to thrive in a rapidly evolving global economy. Balancing growth with environmental sustainability and equitable resource distribution will be key to long-term agricultural success.

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