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Assessing the Impact of GST on Agricultural Inputs, Food Processing, and Rural Value Chains in India

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Abstract:

The introduction of the Goods and Services Tax (GST) in 2017 marked a significant reform in India's indirect taxation system, aiming to create a unified national market. Although agriculture remains largely outside the direct ambit of GST, the sector is indirectly affected through taxation on inputs, processing, logistics, and value chain activities. This study examines the impact of GST on agricultural inputs, food processing industries, storage infrastructure, and rural value chains in India using secondary data and policy analysis. The findings indicate that GST has contributed to improved supply chain efficiency, reduced tax cascading, and enhanced market integration. However, it has also increased the cost of key agricultural inputs and limited the benefits of input tax credit for small and marginal farmers. The study concludes that while GST has facilitated structural transformation in the agricultural economy, its benefits remain uneven, necessitating policy interventions to ensure inclusivity and sustainability in rural development.

Keywords: GST, Agriculture, Agricultural Inputs, Food Processing, Rural Value Chains, Input Tax Credit, Supply Chain Efficiency, India

1. Introduction

Agriculture continues to be a cornerstone of the Indian economy, contributing nearly 16–18 percent to the Gross Domestic Product (GDP) and providing livelihood to a majority of the rural population. Despite its declining share in GDP, the sector remains critical for food security, employment generation, and rural development. Over the years, Indian agriculture has undergone significant transformation, moving from subsistence farming to a more market-oriented and value chain-driven system, integrating production, processing, storage, and distribution.

The introduction of the Goods and Services Tax (GST) in July 2017 represents one of the most comprehensive fiscal reforms in India's post-independence history. GST replaced a complex system of indirect taxes such as Value Added Tax (VAT), excise duty, and service tax with a unified tax structure, aiming to create a common national market, reduce cascading taxes, and improve ease of doing business. While agriculture as a primary activity remains largely exempt from GST, its allied and related sectors—including agricultural inputs, food processing, warehousing, transportation, and marketing—fall within its ambit.

The indirect impact of GST on agriculture is therefore significant and multifaceted. On one hand, GST has streamlined logistics, reduced interstate trade barriers, and promoted efficiency in supply chains. On the other hand, the imposition of taxes on inputs such as fertilizers, pesticides, and farm machinery has increased the cost of cultivation, particularly affecting small and marginal farmers who are not eligible for Input Tax Credit (ITC) benefits. Similarly, while GST has encouraged formalization in the food processing sector, it has also altered pricing structures and consumption patterns.

Furthermore, GST has important implications for rural value chains, which encompass the entire spectrum of activities from farm production to final consumption. By integrating markets and reducing transaction costs, GST has the potential to strengthen rural economic linkages. However, challenges such as limited awareness, compliance burdens, and unequal access to benefits persist, especially in the unorganized sector.

In this context, a comprehensive assessment of GST's impact on agricultural inputs, food processing, storage systems, and rural value chains is essential to understand its broader implications for India's agrarian economy.

Objectives of the Study

1. To examine the impact of GST on agricultural inputs such as fertilizers, pesticides, and machinery.
2. To analyze the effects of GST on the food processing sector in India.
3. To evaluate the influence of GST on storage, warehousing, and agricultural logistics.
4. To assess the implications of GST on rural value chains and market integration.
5. To identify key challenges and suggest policy measures for improving GST outcomes in agriculture.

Research Questions

1.How has GST influenced the cost structure of agricultural production?
2.What are the implications of GST for food processing industries and rural enterprises?
3.To what extent has GST improved efficiency in agricultural supply chains?
4.Are the benefits of GST equitably distributed across farmers and agribusinesses?

2. Literature Review

The impact of the Goods and Services Tax (GST) on agriculture and allied sectors in India has attracted considerable academic and policy attention. Existing literature broadly highlights a mixed impact, emphasizing both efficiency gains and structural challenges. Early studies on GST reforms underline its role in creating a unified national market by eliminating cascading taxes and reducing interstate trade barriers. According to policy analyses, GST has significantly improved logistics efficiency through the removal of check-post delays and the expansion of e-way bill systems, which recorded a 21% growth in transaction volumes during 2025 . These developments have strengthened agricultural supply chains and facilitated faster movement of perishable goods.

Several scholars argue that GST has positively influenced agricultural value chains by promoting market integration and formalization. The Economic Survey (2025–26) notes that agriculture and allied sectors recorded a growth rate of 4.6% in 2024–25, with strong performance in allied activities such as livestock and fisheries. This growth is partly attributed to improved infrastructure, policy support, and better integration with markets. However, a significant body of literature points to the adverse effects of GST on agricultural inputs. Studies indicate that taxation on fertilizers, pesticides, and farm services has increased the cost of cultivation, especially for small and marginal farmers who are not eligible for input tax credit (ITC). Recent policy reviews highlight that GST rate reductions on farm machinery and inputs have been introduced to mitigate these challenges and promote mechanization. For instance, reductions in GST on tractors have improved affordability and contributed to increased adoption of farm equipment.

Research also highlights the dual impact of GST on the food processing sector. While GST has encouraged formalization and improved compliance in organized food industries, it has also increased the tax burden on processed food items, influencing pricing and consumption patterns. As a result, benefits are more pronounced in the organized sector, whereas small-scale rural enterprises face compliance and cost-related challenges. Furthermore, literature emphasizes that GST's impact on rural value chains is uneven. While it has enhanced efficiency and reduced transaction costs, the exclusion of a large segment of farmers from the GST framework limits its inclusivity. Reports indicate

that agriculture continues to support nearly 46% of India's population while contributing around 16% to GDP, highlighting the importance of inclusive fiscal reforms

Overall, the literature suggests that GST has acted as a transformative but uneven reform in the agricultural sector. While it has improved efficiency, transparency, and market integration, its benefits remain skewed towards organized players, necessitating targeted policy interventions for small farmers and rural enterprises.

3. Research Methodology

This study is based on a **descriptive and analytical research design**, focusing on evaluating the impact of the Goods and Services Tax (GST) on agricultural inputs, food processing, storage systems, and rural value chains in India.

Data Sources

The analysis primarily relies on **secondary data**, collected from:

1. Economic Survey of India (2024–25, 2025–26)
2. Reports of the Press Information Bureau (PIB)
3. India Brand Equity Foundation (IBEF)
4 GST Council reports and government notifications
5 Research articles, journals, and policy papers

Recent data relating to **GST rates, agricultural growth trends, logistics performance, and food processing sector developments** have been incorporated to ensure contemporary relevance.

Analytical Approach

The study adopts a **qualitative-cum-quantitative approach**, involving:

1. **Comparative analysis** of pre-GST and post-GST scenarios
2. **Sector-wise assessment** (inputs, processing, storage, value chains)
3. **Tabular presentation of data** for clarity and interpretation
4. **Policy analysis** to evaluate the effectiveness of GST reforms

Scope of the Study

1. Focuses on **India's agricultural and allied sectors**
2. Covers the period **post-GST implementation (2017–2026)**
3. Examines indirect effects of GST rather than direct taxation on farm produce
4. Includes both **organized and unorganized rural sectors**

Limitations of the Study

- The study is based on **secondary data**, which may limit micro-level insights
- Lack of primary field data from farmers and rural enterprises

- GST impact varies across regions, which may not be fully captured

4. GST Structure in Agriculture and Allied Activities

The Goods and Services Tax (GST) framework in India adopts a **multi-rate structure**, which has significant implications for agriculture and allied sectors. While **basic agricultural produce remains exempt**, various components of the agricultural value chain—such as inputs, machinery, processing, and logistics—are subject to GST at different rates.

This differential tax structure creates both **opportunities and challenges**, influencing cost, efficiency, and value addition across the sector.

4.1 GST Rates on Agricultural Inputs

Table 4.1: GST Rates on Major Agricultural Inputs

Input Category	GST Rate (%)	Pre-GST Tax	Post-GST Impact
Fertilizers	5%	~0–2%	Slight increase in cost
Pesticides/Insecticides	18%	~12–14%	Significant cost increase
Tractors	12% → reduced to 5%	~12–14%	Promotes mechanization
Agricultural machinery	5–12%	Higher earlier	Reduced cost burden
Irrigation equipment (drip/sprinkler)	5%	~12%	Encourages water efficiency
Seeds	0% (exempt)	Exempt	No change

Analysis

- The **exemption of seeds** ensures that basic agricultural production remains unaffected.
- However, **higher GST on pesticides (18%)** increases input costs, particularly impacting small farmers.
- Reduction in GST on **tractors and irrigation equipment to 5%** has encouraged mechanization and efficient water usage.
- Since farmers are largely **outside the GST system**, they cannot claim **Input Tax Credit (ITC)**, leading to a **cost burden shift onto them**.

Overall, GST has created a **dual impact—cost escalation in some inputs and cost reduction in capital equipment**.

4.2 GST on Food Processing Sector

Table 4.2: GST Rates on Food Products

Category	GST Rate	Nature of Impact
Fresh fruits & vegetables	0%	No tax burden
Unprocessed cereals/pulses	0%	Farmer-friendly
Branded/processed food	5%–18%	Increased prices
Dairy products	5%–12%	Moderate impact
Edible oils	5%	Stable pricing

Analysis

- GST has promoted **formalization and compliance** in the food processing industry.
- Organized firms benefit from **Input Tax Credit (ITC)**, improving efficiency and competitiveness.
- However, **higher GST on processed food (up to 18%)** increases consumer prices and affects demand.
- The sector shows a shift from **informal to formal production systems**, especially in urban-linked supply chains.
- **4.3 GST and Storage, Logistics, and Supply Chains**

Table 4.3: GST Impact on Agricultural Logistics

Component	Pre-GST Scenario	Post-GST Changes	Outcome
Interstate transport	Checkposts, delays	Seamless movement	Reduced transit time
Warehousing	Multiple small warehouses	Consolidation	Efficiency gains
Cold storage	Limited & costly	Tax rationalization	Reduced wastage
Logistics cost	~13–14% of GDP	Gradual decline	Improved competitiveness

Analysis

- GST has **eliminated interstate barriers**, significantly improving transport efficiency.
- The introduction of **e-way bills** has streamlined goods movement and reduced delays.
- Reduction in logistics inefficiencies has contributed to **lower post-harvest losses**, especially for perishables.

4.4 GST and Rural Value Chains

GST has reshaped rural value chains by integrating various stages of production and distribution.

Table 4.4: Impact on Rural Value Chains

Dimension	Positive Impact	Negative Impact
Market access	National market integration	Digital divide
Supply chain	Efficiency & transparency	Compliance burden
Small farmers	Better price discovery (indirect)	No ITC benefits
Rural enterprises	Formalization	Higher compliance costs

Analysis

- GST has strengthened **forward and backward linkages** in agriculture.
- It supports the emergence of **integrated agri-value chains**, connecting farmers to markets.
- However, **small and marginal farmers remain outside the GST framework**, limiting inclusivity.
- Rural enterprises face **compliance challenges**, particularly in adopting digital systems.

Section Summary

- GST structure in agriculture is **selectively applied**, exempting output but taxing inputs and services.
- It has improved **efficiency, logistics, and formalization**.
- However, it has also created **cost pressures and unequal benefit distribution**.

5. Impact Analysis of GST on Agriculture and Allied Activities

The impact of GST on agriculture and allied sectors in India is **multi-dimensional**, affecting cost structures, market efficiency, and rural economic linkages. This section provides a **sector-wise analytical assessment** based on data and policy trends.

5.1 Impact on Agricultural Inputs

GST has significantly altered the cost structure of agricultural inputs.

Positive Impacts

- **Reduction in tax cascading** has improved transparency in pricing.
- Lower GST rates on **tractors and irrigation equipment (5%)** have encouraged mechanization.
- Improved availability of standardized inputs across states due to a unified tax regime.

Negative Impacts

- Increased GST on **pesticides (18%) and fertilizers (5%)** has raised input costs.
- Farmers are **not eligible for Input Tax Credit (ITC)**, leading to higher effective costs.
- Small and marginal farmers are disproportionately affected due to limited financial capacity.

Analytical Insight

The increase in input costs has contributed to rising **cost of cultivation**, which, in the absence of proportional increase in output prices, reduces farm profitability. While capital-intensive farmers benefit from mechanization, small farmers face **cost-push pressure**, widening rural inequality.

5.2 Impact on Food Processing Sector

The food processing industry is one of the most affected segments under GST.

Positive Impacts

- GST has promoted **formalization and tax compliance**.
- Organized firms benefit from **Input Tax Credit**, reducing production costs.
- Enhanced integration with national markets improves scalability.

Negative Impacts

- Higher GST rates (5–18%) on processed food increase retail prices.
- Small and unorganized food processors face **compliance and cost burdens**.
- Demand for certain processed goods may decline due to price sensitivity.

Analytical Insight

GST has created a **structural shift from informal to formal processing units**, favoring large enterprises. While this enhances efficiency, it risks **marginalizing small rural processors**, unless supported by targeted policies.

5.3 Impact on Storage and Logistics

GST has brought substantial improvements in agricultural logistics and storage systems.

Positive Impacts

- Removal of interstate barriers has reduced **transport time and costs**.
- Implementation of the **e-way bill system** has improved supply chain transparency.
- Growth of **integrated warehousing and cold storage infrastructure**.
- Reduction in post-harvest losses, especially for perishable commodities.

Challenges

- Initial compliance and digital requirements posed challenges for small operators.
- Infrastructure gaps still persist in rural areas.

Analytical Insight

GST has shifted the logistics sector from a **tax-driven model to an efficiency-driven model**, contributing to improved competitiveness. This is particularly beneficial for high-value and perishable agricultural products.

5.4 Impact on Rural Value Chains

GST has reshaped the structure and functioning of rural value chains.

Positive Impacts

- Creation of a **unified national agricultural market**.
- Strengthening of **forward and backward linkages** in agriculture.
- Increased participation of organized retail and agri-business firms.
- Improved price discovery through better market integration.

Negative Impacts

- Exclusion of farmers from GST limits their participation in formal value chains.
- **Digital and compliance barriers** affect rural enterprises.
- Unequal distribution of benefits between organized and unorganized sectors.

Analytical Insight

GST has enhanced **value chain efficiency**, but its benefits are **asymmetrical**. Large agribusiness firms gain more advantages, while small farmers remain on the periphery. This creates a need for **inclusive policy design**.

5.5 Overall Impact Assessment

Table 5.1: Sector-wise Impact Summary

Sector	Positive Outcomes	Negative Outcomes
Inputs	Mechanization, transparency	Cost increase, no ITC
Processing	Formalization, efficiency	Higher prices, small firm stress
Logistics	Faster movement, reduced wastage	Initial compliance issues
Value Chains	Market integration	Inequality, exclusion

Key Argument of the Study

GST has acted as a **"double-edged reform"** in Indian agriculture:

- It has **modernized supply chains, improved efficiency, and promoted formalization**
- At the same time, it has **increased input costs and excluded small farmers from tax benefits**

Thus, the impact of GST is best described as **"transformative but uneven"**.

6. Major Findings of the Study

The analysis of GST's impact on agriculture and allied sectors reveals the following key findings:

Selective Taxation Structure

GST exempts agricultural produce but taxes inputs and services, leading to an **indirect cost burden on farmers**.

Rising Cost of Cultivation

Increased GST rates on fertilizers (5%) and pesticides (18%) have contributed to higher **input costs**, particularly affecting small and marginal farmers.

Limited Access to Input Tax Credit (ITC)

Since most farmers are outside the GST framework, they **cannot claim ITC**, resulting in reduced economic benefits.

Growth of Food Processing Sector

GST has promoted **formalization and efficiency** in the food processing industry, though small-scale enterprises face compliance challenges.

Improved Logistics and Supply Chains

Removal of interstate barriers and implementation of e-way bills have led to **faster**

transportation and reduced post-harvest losses.

Strengthening of Rural Value Chains

GST has facilitated **market integration and value chain development**, connecting rural producers with broader markets.

Uneven Distribution of Benefits

Benefits of GST are **skewed towards organized and large agribusiness firms**, while small farmers remain relatively disadvantaged.

7. Policy Suggestions

To enhance the effectiveness and inclusivity of GST in agriculture, the following policy measures are recommended:

1. Extend Input Tax Credit (ITC) Benefits

- Introduce mechanisms to allow **Farmers Producer Organizations (FPOs)** and cooperatives to claim ITC.

2. Rationalize GST Rates on Inputs

- Reduce GST on **pesticides and agricultural services** to lower the cost of cultivation.

3. Strengthen Rural Awareness and Digital Capacity

- Conduct **GST awareness programs** in rural areas.
- Improve digital infrastructure for better compliance.

4. Support Small and Rural Enterprises

- Provide **simplified compliance procedures** for small food processors and rural businesses.
- Offer tax incentives or exemptions for micro-enterprises.

5. Promote Storage and Cold Chain Infrastructure

- Increase public and private investment in **warehousing and cold storage** to maximize GST benefits in logistics.

6. Ensure Inclusive Value Chain Development

- Integrate small farmers into **formal supply chains** through policy support and institutional linkages.

8. Conclusion

The Goods and Services Tax (GST) represents a landmark reform that has significantly reshaped India's indirect taxation system and influenced the agricultural economy in multiple ways. While agriculture remains largely exempt from direct taxation, GST has had substantial indirect effects on inputs, processing, logistics, and rural value chains.

The study finds that GST has improved market efficiency, transparency, and supply chain integration, thereby contributing to the modernization of agriculture. At the same time, it has increased the cost burden on farmers, particularly due to taxation on inputs and the absence of Input Tax Credit benefits.

Thus, GST can be characterized as a transformative yet uneven reform in the agricultural sector. Its long-term success depends on addressing existing disparities and ensuring that the benefits of tax reform are inclusive, farmer-centric, and supportive of rural development.

A balanced policy approach—combining tax rationalization, institutional support, and infrastructure development—is essential to align GST with the broader goals of sustainable and inclusive agricultural growth in India.

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