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# GST on Plant-Based Products in India: A Comprehensive Review with Comparative and Policy Perspectives

**Dr P Sujana, Smt S Padmavathi**
**Dr J Koteswara Rao**
Department of Botany, Govt. Degree College, Puttur
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**Abstract**

The Goods and Services Tax (GST), introduced in India in 2017, replaced a complex system of multiple indirect taxes with a unified framework. This study examines the application of GST to plant-based products, which are a key part of India's agricultural economy. It analyses how these products are classified based on processing, value addition, and branding, ranging from exempt raw produce to highly processed goods taxed up to 18%. The agriculture sector holds a unique position under GST, with essential commodities exempted to ensure food security and protect farmer livelihoods. In contrast, processed and branded products are taxed to support revenue generation.

Compared to manufacturing, services, and FMCG sectors, agriculture operates under a partially exempt system, which creates structural limitations such as the lack of input tax credit. The study also evaluates the impact of GST on stakeholders across the value chain. Farmers benefit from exemptions but face challenges related to input costs and market dependence. The food processing industry gains from improved efficiency and tax credit mechanisms, while consumers benefit from affordable essentials but pay more for processed goods. Overall, GST has improved transparency and efficiency, but further policy refinement is needed to address classification issues and ensure sustainable and inclusive growth.

**Key words:** Goods and Services Tax (GST), Plant-Based Products, Agriculture Sector, ITC

## 1. Introduction

India has long been recognized as an agrarian economy, where agriculture and allied sectors play a vital role in sustaining livelihoods and ensuring food security. According to the Government of India (2023), nearly 45–50% of the population depends directly or indirectly on agriculture for employment. Within this sector, plant-based products form the core of production and consumption, encompassing cereals, pulses, fruits, vegetables, oilseeds, spices, medicinal plants, and plantation crops.

In addition to traditional agricultural products, India has witnessed a rapid expansion in the plant-based food segment, driven by changing consumer preferences, increasing health awareness, and global environmental concerns. Products such as soy milk, almond milk, plant-based protein powders, and vegan meat substitutes are gaining popularity, particularly among urban populations. This shift reflects broader global trends toward sustainable and plant-based diets (FAO, 2022).

### 1.1 Pre-GST Taxation Challenges

Before the introduction of GST, India's indirect taxation system was highly fragmented and complex. Different taxes were levied by central and state governments, including Value Added Tax (VAT), Central Excise Duty, Service Tax, Entry Tax, Octroi. These taxes were applied at different stages of the supply chain, often leading to a cascading effect where taxes were levied on top of other taxes. This increased the overall cost of goods and created inefficiencies in the market (World Bank, 2023).

For plant-based products, the situation was particularly complicated due to Variation in tax rates across states, Multiple exemptions and concessions, Lack of clarity in classification. For example, unprocessed agricultural products were generally exempt, but processed products were taxed differently depending on the state, leading to inconsistencies in pricing and trade barriers.

### 1.2 Introduction of GST and Its Objectives

The implementation of GST on July 1, 2017, marked a major milestone in India's economic reforms. GST is a destination-based tax that is levied on the consumption of goods and services. It allows for input tax credit (ITC), which eliminates the cascading effect of taxes and ensures that tax is only paid on value addition (NITI Aayog, 2023).

The primary objectives of GST include: Simplification of the tax system, Creation of a unified national market, Reduction of tax evasion, Promotion of ease of doing business and Enhancement of economic efficiency

## 2. GST and Agriculture Sector:

The agriculture sector in India occupies a unique position within the Goods and Services Tax (GST) framework due to its critical role in ensuring food security, rural employment, and economic stability. Unlike most other sectors of the economy, agriculture enjoys substantial tax exemptions, particularly for raw and unprocessed produce. Fresh agricultural commodities such as fruits, vegetables, cereals, and pulses are exempt from GST, reflecting the government's intent to protect farmers and maintain affordability of essential food items (Government of India, 2017).

However, this preferential treatment is not uniformly extended across the entire agricultural value chain. While outputs in their primary form are largely tax-free, agricultural inputs and allied services—such as fertilizers, pesticides, irrigation equipment, tractors, and machinery—are subject to GST, typically at concessional rates ranging from 5% to 12%. This creates a partial taxation structure, where the output is exempt but inputs are taxed, leading to unique economic implications for the sector.

### 2.1 Rationale for GST Exemptions in Agriculture

The exemption of agricultural produce under GST is based on important socio-economic considerations aimed at supporting the sector. It helps protect farmer livelihoods, as a large proportion of Indian farmers are small and marginal with limited income and market power, and exemption ensures they are not burdened with indirect taxes. It also ensures food security and affordability, since essential food items constitute a major share of household expenditure, particularly for low-income groups, and tax exemption helps keep prices stable and accessible. Additionally, it promotes administrative simplicity in a largely informal sector, where millions of small producers and traders operate, making strict GST compliance difficult to implement effectively**.**

### 2.2 Positive Impact of GST on Agriculture

Despite its unique structure, GST has contributed to several improvements in the agricultural sector:

**a. Improved Supply Chain Efficiency**

By removing interstate levies, GST has streamlined the movement of goods across regions, such as entry tax and octroi, enabling smoother movement of agricultural goods across states. This has reduced transportation delays and improved market integration.

**b. Reduction in Logistics Costs**

With the removal of multiple checkpoints and taxes, logistics costs have declined, benefiting both farmers and traders. Perishable goods, in particular, benefit from faster transportation and reduced spoilage**.**

**c. Promotion of Organized Markets**

GST has encouraged the formalization of agricultural trade, especially in processing and distribution sectors. This has improved transparency and traceability in the supply chain.

**2.3 Negative Impact and Challenges**

While GST has introduced several benefits, its impact on agriculture is not entirely positive:

**a. Input Tax Credit (ITC) Limitation**

Since most agricultural outputs are exempt, farmers and traders cannot claim input tax credit on GST paid for inputs such as fertilizers, machinery, and transportation. This leads to a hidden tax burden, increasing the overall cost of production (NITI Aayog, 2023).

**b. Compliance Burden for Small Stakeholders**

Although primary producers are largely outside the GST net, traders, aggregators, and small processors are required to comply with GST regulations. This includes registration, return filing, and record-keeping, which can be challenging for small and rural enterprises.

**c. Uneven Benefits Across Value Chain**

While large agribusiness firms benefit from input tax credit and formalization, small farmers often do not experience the same level of advantage, leading to disparities within the sector.

**2.4: GST in Agriculture comparative to other sectors**

The agriculture sector is uniquely positioned within the GST framework, receiving preferential treatment through tax exemptions to ensure food security and protect farmer livelihoods. However, this exemption results in structural limitations, particularly the absence of input tax credit, which increases indirect production costs (World Bank, 2023).

In contrast, manufacturing, services, and FMCG sectors operate within a fully integrated GST system, benefiting from seamless input tax credit and higher efficiency, but they also face greater compliance requirements and higher tax burdens (NITI Aayog,

2023). The services sector, in particular, contributes significantly to GST revenue due to its broad tax base and higher tax rates (Government of India, 2023). Overall, GST reflects a policy trade-off between social welfare and economic efficiency, where agriculture is protected, while other sectors are leveraged for revenue generation and economic growth (FAO, 2022).

**Table 1: Comparison of GST in Agriculture to other sectors.**

| Aspect | Agriculture Sector | Other Sectors (Manufacturing, Services, FMCG) | Key Insight |
|---|---|---|---|
| **Policy Objective** | Welfare-oriented (farmer support, food security) | Revenue-driven and growth-oriented | Agriculture focuses on social welfare, while other sectors emphasize economic growth (Government of India, 2017). |
| **GST on Output** | Mostly exempt outputs, taxed inputs | Fully taxable with ITC | Agriculture follows a partial GST chain, unlike other sectors with a complete tax-credit mechanism (Government of India, 2017; NITI Aayog, 2023). |
| **Aspect** | **Agriculture Sector** | **Other Sectors (Manufacturing, Services, FMCG)** | **Key Insight** |
| **GST on Inputs** | Inputs like fertilizers, machinery taxed (5%–12%) | Inputs fully taxed with ITC | Agriculture faces partial taxation where inputs are taxed but outputs are exempt (NITI Aayog, 2023). |
| **Input Tax Credit (ITC)** | Not available | Fully available | Lack of ITC creates hidden costs and inefficiencies in agriculture (World Bank, 2023). |
| **Tax** | Partially | Fully | Agriculture is outside full GST chain, |

| | | | |
|---|---|---|---|
| **Structure Nature** | exempt system | taxable system | whereas other sectors follow continuous tax-credit mechanism (Government of India, 2017). |
| **Level of Formalization** | Low (informal) | High to very high | Other sectors are more organized and integrated into the formal economy (NITI Aayog, 2023). |
| **Compliance Burden** | Low for farmers | High but structured | Compliance is easier in agriculture but more rigorous in other sectors (World Bank, 2023). |
| **Supply Chain Efficiency** | Improved, lower costs | Highly efficient, optimized | GST has improved logistics and supply chain efficiency across all sectors (World Bank, 2023). |
| **Logistics Cost Impact** | Reduced transportation cost | Significant reduction | Removal of checkpoints reduced delays, especially for perishables (NITI Aayog, 2023). |
| **Revenue Contribution** | Low | High to very high | Manufacturing and services contribute significantly more to GST revenue (Government of India, 2023). |
| **Pricing Impact** | Lower prices | Moderate to high prices | Essential goods remain affordable, while other sectors pass tax burden to consumers (ClearTax, 2025). |
| **Branding and Value Addition** | Minimal | High (especially FMCG) | Other sectors focus on branding and processing, increasing value addition (FAO, 2022; NITI Aayog, 2023). |

*FMCG-Fast Moving Consumer Goods

**3. Classification of Plant-Based Products under GST**

The Goods and Services Tax (GST) framework in India classifies plant-based products primarily based on their degree of processing, level of value addition, branding, and market positioning. Broadly, plant-based products are categorized into four major groups: raw and unprocessed products, minimally processed products, processed and branded products, and highly processed products.

**3.1 Raw and Unprocessed Products (0% GST)**

Raw agricultural products are fully exempt from GST. These include: Fresh fruits, vegetables, cereals such as rice and wheat, Pulses, legumes, Fresh herbs and spices.

These products are typically sold in their natural form without undergoing any significant processing other than basic cleaning or sorting. The exemption applies mainly to unbranded and unpackaged goods, which are commonly traded in local markets and mandis.

**Policy Rationale**

The exemption of raw agricultural products from GST is a deliberate policy decision aimed at achieving key socio-economic objectives. It protects farmers' income, particularly for small and marginal farmers, by ensuring they are not burdened with indirect taxes. It also ensures food affordability, as essential commodities like rice, wheat, and vegetables remain tax-free and accessible to all sections of society. Additionally, the exemption promotes agricultural production by encouraging cultivation of essential crops and reduces administrative complexity, as most agricultural transactions occur in informal markets where strict tax compliance would be difficult.

Despite these advantages, the exemption has certain limitations. Producers and traders dealing in exempt goods cannot claim Input Tax Credit (ITC) on inputs such as fertilizers, transportation, packaging, and machinery, leading to increased production costs. This creates a hidden tax burden, as taxes paid on inputs are indirectly passed on to consumers (World Bank, 2023). Moreover, the exemption may discourage farmers from engaging in value addition and processing activities, as taxation begins at higher stages of the value chain, limiting opportunities for income growth.

**3.2 Minimally Processed Products (5% GST)**

Minimally processed plant-based products are those that undergo basic processing to enhance usability, shelf life, or safety without significantly altering their natural characteristics. These processes include cleaning, grading, drying, freezing, and simple extraction. These include frozen vegetables, dried fruits and nuts, edible vegetable oils, plant-based milk (such as soy milk and almond milk). These products are taxed at a concessional GST rate of 5%, reflecting their semi-essential nature.

This category is particularly important for the agricultural economy as the minimal processing of plant-based products plays a crucial role in strengthening the agricultural economy by addressing several key challenges. It helps reduce post-harvest losses, which are significant in India due to inadequate storage and transportation facilities, as techniques like drying and freezing preserve produce and minimize wastage. Such processing also increases the shelf life of perishable goods, enabling wider distribution

and better price realization for farmers. In addition, even basic processing leads to value addition, enhancing the economic worth of agricultural products and creating additional income opportunities for farmers and small-scale industries. Furthermore, the establishment of small processing units in rural areas promotes employment generation and supports local economic development.

**Policy Perspective and Recent Developments**

Recent GST reforms have reduced the tax burden on plant-based milk and protein products, bringing them under the 5% slab. This reflects the government's recognition of Growing demand for plant-based alternatives, Environmental sustainability concerns and Nutritional benefits of plant-based diets. Such measures align India's taxation policy with global trends promoting sustainable food systems (Plant Base Magazine, 2025).

**3.3 Processed and Branded Products (5–12% GST)**

Processed plant-based products involve a higher degree of transformation and value addition compared to minimally processed goods. These products often undergo multiple stages of processing, packaging, and branding before reaching consumers. These include Packaged cereals, flours, branded pulses, ready-to-cook food items and snack products. These products attract GST rates ranging from 5% to 12%, depending on factors such as branding, packaging, and composition.

Branding plays a crucial role in determining GST rates, with unbranded products often taxed at lower rates or exempt, while branded products attract higher GST due to their commercial value and organized market presence. This distinction reflects the government's intent to support small and unorganized sector producers while generating revenue from organized and branded businesses.

**Economic and Market Implications**

Moderate GST rates on processed plant-based products encourage investment in the food processing industry, which plays a vital role in reducing agricultural wastage and promoting exports. At the same time, GST supports the formalization of the economy by improving transparency and accountability, motivating businesses to operate within the organized sector. Branded products, though taxed at higher rates, often provide better quality assurance, packaging, and standardization, enhancing consumer confidence (NITI Aayog, 2023). However, this structure can have a limiting effect on small-scale producers, who may avoid branding to stay within lower tax brackets, thereby restricting their opportunities for market expansion and growth.

**3.4 Highly Processed Products (Up to 18% GST)**

Highly processed plant-based products involve advanced processing techniques and significant value addition. These products are often positioned as premium or convenience foods. These include ready-to-eat vegan meals, plant-based meat substitutes, nutraceuticals &functional foods and packaged health supplements. These products attract GST rates of up to 18%, reflecting their classification as non-essential or luxury goods.

**Rationale for Higher Taxation**

The higher GST rates on highly processed plant-based products are based on several economic and policy considerations. These products are generally classified as non-essential or luxury items and are often consumed by higher-income groups, making them suitable for higher taxation. Additionally, they involve significant value addition through advanced processing, branding, and marketing, which increases their market value and justifies higher tax rates. From a fiscal perspective, taxing such premium products contributes to government revenue without affecting the affordability of essential goods. Furthermore, this approach aligns with the principles of progressive taxation, where luxury consumption is taxed at higher rates to maintain equity in the tax system.

**Emerging Trends and Challenges**

The plant-based meat and nutraceutical sectors are rapidly expanding in India, leading to new challenges in GST classification. There is growing ambiguity in determining whether such products should be categorized as conventional food items, dietary supplements, or health products, which directly affects the applicable tax rates. This lack of clarity can create inconsistencies and compliance difficulties for manufacturers and traders. Consequently, there is an increasing demand for rationalizing GST rates and simplifying classification to support innovation, improve affordability, and encourage the growth of these emerging sectors (Ministry of Food Processing Industries, 2024).

**4. Impact on Stakeholders**

The Goods and Services Tax (GST) has significantly influenced stakeholders in the plant-based product value chain, including farmers, the food processing industry, and consumers. Its impact varies depending on their role and level of integration into the formal economy.

**4.1. Impact on Farmers**

Farmers benefit from the exemption of raw and unprocessed agricultural produce from GST, which protects their income and ensures affordability of essential food items (Government of India, 2017). Since their outputs are exempt, farmers cannot claim credit for taxes paid on inputs such as fertilizers and machinery, resulting in a hidden tax burden (NITI Aayog, 2023). Additionally, dependence on intermediaries and limited access to formal markets reduce their overall benefits.

### 4.2. Impact on Food Processing Industry

The food processing industry has benefited considerably from GST. The availability of **Input Tax Credit (ITC)** allows firms to offset taxes paid on inputs, thereby reducing costs and improving profitability. GST has also eliminated cascading taxes, ensuring that tax is levied only on value addition (Ministry of Food Processing Industries, 2024). A uniform tax structure has improved ease of doing business and encouraged investment. However, challenges such as complex product classification and compliance requirements persist, especially for small enterprises.

### 4.3. Impact on Consumers

Consumers benefit from GST through the exemption of essential food items such as fruits, vegetables, and cereals, which ensures affordability (Clear Tax, 2025). GST has also improved price transparency. However, processed and branded plant-based products attract higher GST rates (5%–18%), making them relatively expensive. Premium products such as vegan meat substitutes and nutraceuticals are less accessible to lower-income groups.

## 5. Emerging Trends: Plant-Based Economy and GST

The global shift toward plant-based diets is driven by sustainability, health, and ethical concerns (FAO, 2022). In India, demand for plant-based alternatives such as plant-based milk is increasing. GST reforms, including reduced tax rates on certain products, support this transition. However, classification issues and higher taxation on premium products remain challenges.

## Conclusion

GST has streamlined India's tax system, improved supply chain efficiency and creating a unified market for plant-based products. Its progressive structure exempts essential goods while taxing value-added products at higher rates. While this approach supports food security and revenue generation, the absence of input tax credit in agriculture creates hidden costs and limits farmer participation in value addition. Compared to other sectors, agriculture remains partially outside the GST framework,

resulting in both benefits and disparities. The impact on stakeholders is mixed, with farmers facing structural challenges, the food processing industry benefiting from tax efficiency, and consumers enjoying affordable essentials but paying more for processed goods. As the plant-based economy grows, further improvements in classification clarity and tax rationalization are needed to ensure inclusive and sustainable development

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