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BEHAVIOURAL AND POLICY DYNAMICS OF INDIA'S AGRICULTURAL EXPORTS: TRENDS, CONSTRAINTS, AND PATHWAYS FOR SUSTAINABLE GROWTH

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ABSTRACT

India's agricultural export sector has emerged as a critical driver of economic growth, farmer income, and global trade integration. Despite being one of the largest producers of agricultural commodities, India's share in global agricultural exports remains relatively low. This study examines the trends, composition, and growth performance of India's agricultural exports during the period 2017–18 to 2022–23, while also analysing behavioural and policy-related determinants influencing export performance. Using secondary data from sources such as FAOSTAT, WTO, APEDA, and NABARD, the study employs analytical tools including Compound Annual Growth Rate (CAGR), trend analysis, and percentage share analysis. The findings reveal strong growth in export value and volume, high commodity concentration, and significant variability across export items. Structural challenges such as policy instability, infrastructural gaps, quality standards, and small landholdings continue to hinder export competitiveness. The study concludes that a stable policy environment, diversification of the export basket, and enhanced infrastructure are essential for achieving sustainable growth in agricultural exports.

Keywords **:** Agricultural Exports, Trends, Challenges, Government Schemes

Introduction

India's agricultural sector plays a pivotal role in ensuring food security, employment generation, and foreign exchange earnings. As an agrarian economy, India contributes significantly to the global food basket due to its diverse agro-climatic conditions and rich natural resource base (Pingali, 2018). Agricultural exports have emerged as a crucial driver of farmers' income by enabling access to international markets and better price realization (Gulati, 2018). Despite being the second-largest producer of agricultural commodities globally, India accounts for only about 2.4% of global agricultural exports (WTO, 2022). This paradox highlights structural, behavioural, and policy-related inefficiencies (Chand, 2019). Export-oriented crops such as rice, sugar, spices, and marine products have shown significant growth, indicating a shift in farmers' production behaviour towards market-driven agriculture (Joshi, 2020). However, export performance is not solely determined by production capacity; it is strongly influenced by behavioural responses of farmers, institutional frameworks, policy stability, and infrastructure (Dev, 2021). Therefore, understanding the behavioural and systemic dimensions of agri-exports is essential for designing effective strategies for sustainable growth.

Material and Methods

This study is based on secondary data analysis and adopts a descriptive as well as analytical research design. Secondary data were collected from the Ministry of Agriculture and Farmers Welfare (Government of India), APEDA reports, WTO Trade Statistical Review, FAOSTAT database, NABARD reports, and published research articles and policy papers (FAO, 2023; WTO, 2022; NABARD, 2021).

The period of study is 2017–18 to 2022–23. The analytical tools used include Compound Annual Growth Rate (CAGR), trend analysis, percentage share analysis, and comparative analysis. The study focuses on trends in India's agri-exports, composition of export basket, growth performance of major commodities, behavioural and policy constraints, and government initiatives.

Results and Discussion

Trends in Agricultural Exports

India's agricultural exports have shown a consistent upward trend in both physical and monetary terms from 2017–18 to 2022–23. Export value increased from Rs. 250,743.69 crore to Rs. 426,693.20 crore, while export volume rose from 33,068.88 thousand MT to 63,887.31 thousand MT (Fig. 1).

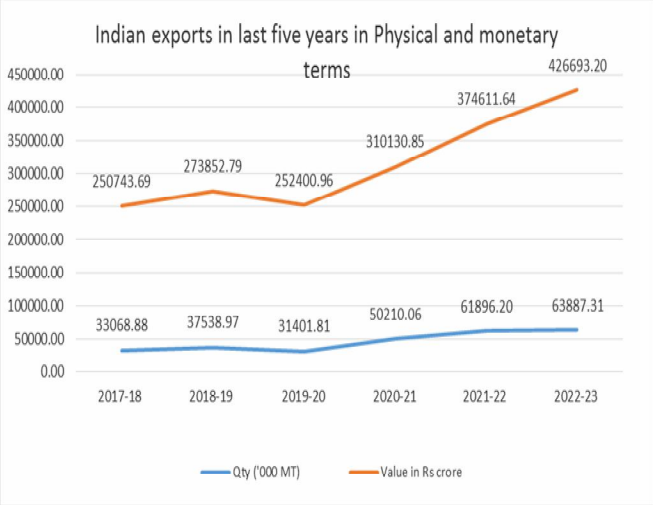

Fig. 1: Indian exports in last five years in Physical and monetary terms, source: Ministry of Agriculture and Farmers welfare

This growth reflects improved market access and rising global demand (World Bank, 2021), as well as behavioural shifts among farmers toward export-oriented production.

Composition of Export Basket

The lead items in agri-exports in total agri-exports in 2022-23 are Marine products, Rice other than Basmati, Sugar, Rice Basmati, Spices, Buffalo meat, oil meals, wheat, miscellaneous processed items, castor oils. In 2022-23, the marine products have highest share as 15.21 percent followed by 11.97 percent share of Rice other than basmati, 10.85 percent for sugar, 9.03 percent for rice basmati, spices (7.13%), Buffalo meat (6.01 %), 3.03 % for oil meals, wheat (2.77%, miscellaneous processed items (2.67%) and castor oils (2.37%) (Fig. 2).

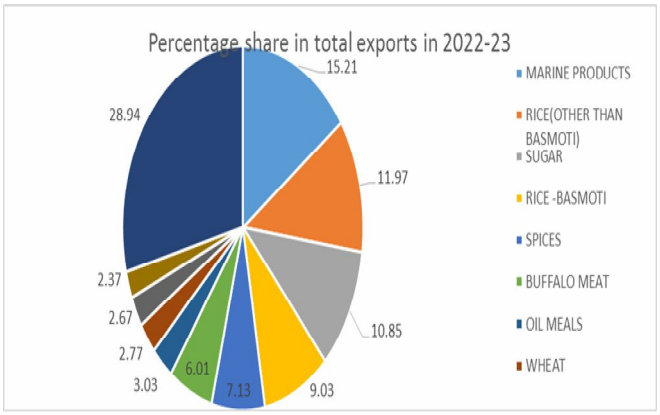

Fig. 2 : Share of lead agri-export items in Indian agri-export in 2022-23.

The major export commodities include marine products, non-basmati rice, sugar, basmati rice, spices, and buffalo meat. The top five commodities contribute more than 50% of total agricultural exports, indicating a high concentration ratio (APEDA, 2023). Such concentration increases vulnerability to global price fluctuations and demand shocks (Narayanan, 2022).

Growth Performance (CAGR Analysis)

The CAGR for lead 10 export items is presented here in both physical and monetary terms for the period 2017-18 to 2022-23. It shows that CAGR for Wheat is highest in both physical and monetary terms. It is found as 80.09 percent in monetary terms and physical terms, it is found as 70.81 percent. The second highest growth rate is found in sugar followed by miscellaneous processed items, rice other than Basmati and oil meals. The lowest growth rate is found buffalo meats in the given period.

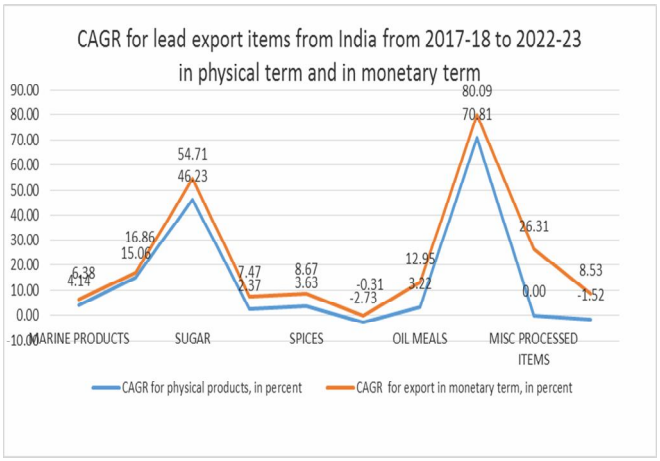

Fig. 3: CAGR for lead export items from India from 2017-18 to 2022-23 in physical term and in monetary term

The CAGR analysis shows that wheat recorded the highest growth rate (above 70–80%), followed by sugar and processed items (Fig. 3). In contrast, buffalo meat exhibited the lowest growth. This variability

suggests instability in export performance and changing market dynamics (Kumar, 2021). These trends reflect shifting production incentives and evolving market signals influencing farmer behaviour.

Trend line of lead agri-export from India

Trend analysis indicates that marine products have consistently dominated India's export basket, while rice exports have shown a steady upward trajectory (Fig. 4). Sugar exports display cyclical growth patterns, influenced by policy interventions and global price cycles (Anderson, 2021). These trends highlight commodity-specific behavioural responses of producers and exporters.

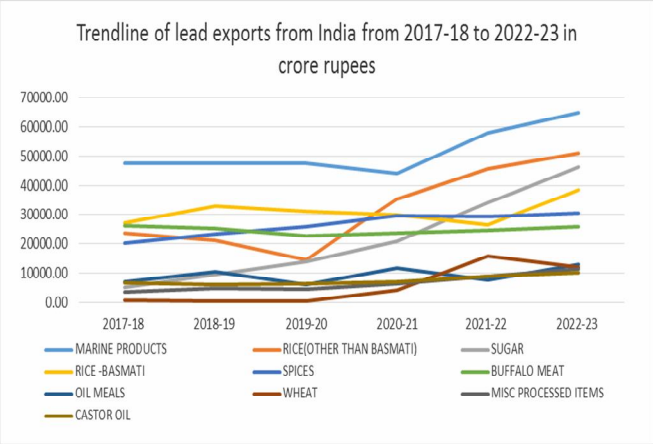

Fig. 4: Trend line of lead exports from India from 2017-18 to 2022-23 in crore rupees

It is found that marine products maintain consistent dominance, rice exports show steady upward trend and sugar shows cyclical growth pattern. It indicates commodity-specific behavioural response as farmers shift production based on price signals and exporters respond to global demand cycles.

Challenges for agri export in India

There are many challenges that different agricultural item face during export. Some important of them are given here.

Limited Agri-Export Basket: According to the Global Trade Research Initiative (GTRI), India's agri-export basket is dependent on just five commodities making the sector vulnerable to fluctuations in global prices and demand.

Export Policy for benefits of both farmers and consumers: In India, the export policy is such which benefits our farmers or consumers. The export duties or relaxation is made primarily to benefit our consumers or farmers and not for boosting exports or achieving export targets. Public stockholding (PSH) is a policy tool used by governments to procure, stockpile and distribute food when needed. Ex: MSP scheme. India's large public stockholding for food security is a contentious issue and the US dragged India to the WTO, challenging Indian export subsidy programs as trade distorting and WTO non-compliant (Roy, 2020).

Limited Agri-Export Basket: According to the Global Trade Research Initiative (GTRI), India's agri-export basket is dependent on just five commodities making the sector vulnerable to fluctuations in global prices and demand. These five products – Basmati Rice, Non-basmati Rice, Sugar, Spices, and Oil Meals– account for 51.5 percent of India's total agriculture exports. Heavy dependence on a few commodities increases vulnerability to market risks (Narayanan, 2022).

Restrictive Trade Policy: Ban on Wheat and rice: In May 2022, the government banned exports of wheat, and broken rice in September 2022, and levied a 20% duty on all white (non-parboiled) non-basmati grain shipments. In August 2023, a 20% duty was levied on exports of parboiled non-basmati rice, while basmati shipments were subjected to minimum export price (MEP) curbs. Ban on Sugar Export: Besides wheat and rice, the government, in May 2022, moved sugar exports from the "free" to "restricted" category and capped the total quantity of the sweetener that could go out during any year.

Uncertain Trade Policies: India has banned exports of those products in which it has held a leadership position in the world market for several years. For example, India imposed a ban on the export of rice which contributes to over 40 percent of worldwide rice exports. Imposing restrictions not only affects global food security, particularly for less affluent nations in the Global South but also undermines India's reputation as a dependable food supplier.

Insufficient investment in research: The investment in research is very low in India. This reduces the edge in competition in export market.

Standards and Quality of produce: Following the set international standards for different nations and products is uphill task. Many times, due to these high standards, our agri- products donot receive good price in international markets.

Inadequate Infrastructure: The required infrastructure is lacking as high speed transport network, processing unit, cold chain, cost effective electricity, efficient managerial staff and skilled labour etc. The sector is hindered by inadequate cold chain infrastructure (CCI) and inefficient logistics and there is little awareness of the need for farmgate packhouses (pre-cooling units with cold rooms) or other CCI components. This leads to spoilage and export

competitiveness issues, including problems related to the quality of products. According to the APEDA, approximately 40% of the country's food is spoiled due to this impacts the farmer's income.

Small and Fragmented Landholdings: Small and marginal landholdings, coupled with a lack of access to credit present challenges in transitioning to commercial production. Small and marginal farmers with less than two hectares of land account for 86.2% of all farmers in India.

Geopolitical Conflicts: India's agricultural exports have faced the logistical challenges arising from the Red Sea crisis which resulted in high freight rates and container shortages. About 15 percent of global shipping traffic transits through the Suez Canal, the shortest shipping route between Europe and Asia, connecting the Red Sea and the Mediterranean. Iran-aligned Yemen Houthi militant group recently launched a drone attack on a cargo vessel in response to Israel's assault on the Gaza Strip. India's exports to Europe through the Suez Canal (in the Red Sea) include food products, apparel, and electronics, among others, and its imports include crude oil.

Over exploitation of resources: In maintain the export demand at given standards, sometimes leads to environment hazards and poses long-term consequences on society.

It is found that there is high Export concentration (>50% in top 5 items), high post harvest losses (40% wastage), majority landholdings are small landholdings (86 % farmers) and high infrastructural gaps as (Low cold chain coverage). This high wastage reduces effective export supply, small farmers limit economies of scale and infrastructure gaps reduce competitiveness index.

Government schemes to promote agri-Export

In order to provide, big push to agri-export, Government of India has started number of schemes to increase the competitiveness of Indian exports.

APEDA support: APEDA (Agricultural and Processed Food Products Export Development Authority) It is a statutory body under the Ministry of Commerce and Industry responsible for promoting export of agricultural and processed food products from India. It also provides financial assistance under FAS to exporting firms. APEDA has developed, in-house, a platform for organising virtual trade fairs (VTF) to establish contact between Indian exporters and importers. Two VTFs namely 'India Rice and Agro Commodity Show' and India Fruits, Vegetables & Floriculture Show have organised recently.

Agri Export Zones (AEZs) scheme: AEZs are established in different parts of the country to promote the export of specific agricultural commodities. These zones provide a conducive environment for sustainable agri exports through infrastructure development and technology adoption.

SAMPADA support: SAMPADA (Scheme for Agro-Marine Processing and Development of Agro-Processing Clusters) aims to modernise infrastructure for agro-processing clusters, which helps reduce post-harvest losses, increase the shelf life of agricultural products, and enhance the export competitiveness of Indian agri-products.

E-NAM support: E-NAM (National Agriculture Market) is a pan-India electronic trading portal for agricultural commodities. It enables farmers to sell their produce directly to buyers, reducing intermediaries, ensuring fair prices, and enhancing sustainability.

MAI support: MAI (Market Access Initiative) is a program that supports export promotion activities, including participation in international trade fairs, capacity building, and market research. It helps Indian agricultural exporters explore new markets and gain market access.

NHM scheme: NHM (National Horticulture Mission) focuses on promoting sustainable horticulture practices, including organic farming, precision farming, and water-use efficiency. It supports the production of high-value horticultural products for export (Gohain *et al*., 2020).

Export-oriented agricultural produce processing and storage facility: State-owned Jawaharlal Nehru Port Authority (JNPA) plans to build it in Maharashtra. The proposed facility aims to enhance processing efficiency, reduce multiple handling, and address infrastructure deficiencies, thereby curbing avoidable wastage in export and import.

Agri Infrastructure Fund with an amount of Rs.1,00,000 crore has been initiated to provide funding for agriculture infrastructure projects at farm-gate & aggregation points (Primary Agricultural Cooperative Societies, Farmers Producer Organisations, Agriculture entrepreneurs, Start-ups, etc.). This will provide the necessary impetus for development of farm-gate and aggregation point, affordable and financially viable post-harvest management infrastructure (NABARD, 2021).

TIES support: Trade Infrastructure for Export scheme (TIES) is started under Ministry of Commerce and Industry to support the export.

GI Tag to Agri-Food Items: 158 food and agri Geographical Indications (GIs) and the identification of 708 unique food items across districts under the One District One Product (ODOP) initiative.

Agri-Cells: Agri-cells in Indian embassies across 13 countries have also been set up to provide inputs on a real time basis to improve Indian exports at these destinations. Ex- Vietnam, USA, Bangladesh, Nepal, UAE, Iran, Saudi Arabia, Malaysia, Indonesia, Singapore, China, Japan and Argentina.

Sea Protocols for Agricultural Exports: India is developing sea protocols for various fresh fruits and vegetables like bananas, mangoes, pomegranates and jackfruit to promote their exports through ocean routes. The protocol includes understanding voyage time, scientifically understanding the ripening of these commodities, their harvest time, and the training of farmers.

One District One Focus Product (ODOFP) programme under Pradhan Mantri Formalisation of Micro Food Processing Enterprises Scheme cover products of agriculture and allied sectors for 728 districts of the country to reap the benefits of scale in terms of procurement of inputs, availing common services and marketing of products.

Krishi Udan and Krishi Rail schemes launched to ease out pressure of high freight rates resulting in smooth movement of perishables to the important Middle East, European Union and South East Asian markets.

Operation Greens Scheme has been extended from 3 TOP crops (tomato, onion and potato) to 22 horticultural and perishable crops. This will lead to better price realisation to farmers, reduced wastages, and affordability of products for consumers.

Thus, we have found that policies are shifting farmers from subsistence to Commercial farming and from local markets to global markets. However, impact depends on implementation efficiency.

Summary and Conclusion

India's agricultural exports have demonstrated significant growth over the past five years, driven by favourable policies, global demand, and increasing farmer participation in export markets. However, the sector faces critical challenges such as limited diversification, policy unpredictability, infrastructural bottlenecks, and quality compliance issues. From a behavioural perspective, farmers and exporters respond strongly to price signals, policy incentives, and market access. Therefore, creating a stable, transparent, and supportive ecosystem is essential to sustain export growth.

In conclusion, India has immense potential to become a global leader in agricultural exports, provided it adopts a holistic approach integrating behavioural insights, policy reforms, and infrastructural development.

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