

Floriculture Exports in Karnataka: Trends, Growth and Export Performance

¹Maheshkumar S V, ²Dr. Parvathamma G L

¹Research Scholar, ²Senior Professor

¹²Department of Economics

¹²Bangalore University, Bangalore- 560056

Abstract—The floriculture sector is vital to India's horticulture, aiding diversification, employment, and exports. Karnataka leads in production and exports due to its favourable conditions and infrastructure. This study analyses Karnataka's floriculture exports from 2015–16 to 2025-26, focusing on quantity, value, and export gateways using descriptive statistics, trend, and growth analysis. Results show fluctuating exports during COVID-19, with a recovery later. Export value grew faster than volume, indicating better market prices. Bengaluru Airport is the main export gateway. The study emphasises strengthening infrastructure, cold-chain, logistics, certification, and market diversification to boost exports.

Index Terms—Floriculture, Export Performance, APEDA, Trend Analysis, Agricultural Trade, International Market

I. Introduction

Floriculture has become one of the fastest-growing segments of Indian horticulture owing to increasing domestic demand and expanding international trade. The sector includes the cultivation and export of cut flowers, loose flowers, ornamental plants, bulbs, foliage, and planting materials. Besides generating foreign exchange, floriculture creates substantial employment opportunities, particularly for rural women and small-scale farmers. India possesses considerable comparative advantages in floriculture due to its diverse agro-climatic conditions, availability of skilled labour, and year-round production capability. Government initiatives such as export promotion through the Agricultural and Processed Food Products Export Development Authority (APEDA), establishment of floriculture parks, cold-chain infrastructure, and improved logistics have encouraged exports of fresh flowers and ornamental plants. Among Indian states, Karnataka occupies a prominent position in commercial floriculture. The Bengaluru region has developed into one of the country's leading floriculture clusters, supported by advanced greenhouse cultivation, high-quality planting materials, efficient transportation networks, and direct international air connectivity. Bengaluru International Airport functions as the principal export gateway for fresh flowers, enabling timely delivery to international markets. Despite its considerable export potential, the floriculture sector faces several challenges, including fluctuating international prices, high transportation costs, and perishability of products, inadequate cold-storage facilities, changing phytosanitary regulations, and disruptions caused by events such as the COVID-19 pandemic. These factors influence both export volume and export earnings. The APEDA export statistics indicate considerable year-to-year variations in export quantity and value. While export quantities experienced fluctuations during the study period, export earnings generally exhibited an increasing trend, suggesting improvements in value addition, product quality, and international demand. Karnataka continues to contribute significantly to India's floriculture exports, with Bengaluru Airport accounting for the majority of export shipments. Therefore, an assessment of export trends at both

the National and State levels is important for understanding the growth pattern, identifying constraints, and suggesting policy interventions for strengthening India's floriculture export competitiveness.

Sowmya and Harisha (2024) analysed the growth and export performance of Indian floriculture, recognising it as a sunrise industry with considerable export potential. They noted that India's floriculture exports reached ₹707.81 crore in 2022–23, stressing the need for improved air cargo facilities, cold-chain infrastructure, and market diversification. APEDA (2024) reported that India exported floriculture products worth USD 88.58 million, with Karnataka, Andhra Pradesh, and Tamil Nadu accounting for over half of the country's export-oriented units. The major export destinations identified were the United States, the Netherlands, the UAE, the United Kingdom, and Canada. Kumar (2023) also analysed India's floriculture exports by country, revealing that the US, the Netherlands, the UAE, the UK, and Germany are key markets, with Karnataka remaining a leading contributor due to its advanced production systems and export infrastructure. Kumarasamy and Harshavardhini (2021) studied the sector's production and export trends, noting steady growth in export earnings despite fluctuations in quantities. They recommended expanding markets, improving logistics, and adopting advanced cultivation technologies for sustainable growth. Singh, Shree, and Bhardwaj (2020) highlighted the sector's significant export potential, driven by favourable agro-climatic conditions, rising global demand, and employment opportunities, though growth is hindered by inadequate cold-chain facilities, high freight costs, and limited market access. Keshava (2010) provides a systematic discussion of fundamental economic concepts that are relevant to understanding the broader dimensions of economic development. The study covers key issues including economic growth, national income, inflation, poverty, unemployment, and public finance, thereby providing a conceptual foundation for analysing economic conditions. It also emphasizes the significance of government policies and economic institutions in addressing developmental challenges and promoting economic stability. The work is therefore useful as a theoretical reference for examining economic issues and understanding their implications within the context of the Indian economy. Agricultural growth is an essential condition for achieving inclusive growth in India because agriculture plays a crucial role in food security, price stability, income generation, employment, and rural livelihoods. The development of agriculture is therefore important for poverty reduction and overall rural development (Keshava, 2013).

II. Objectives

1. To analyse the trends and growth of floriculture exports in Karnataka from 2015–16 to 2025–26.
2. To analyse Karnataka's floriculture exports focusing on export volume, value in Crores and U S Dollars
3. Evaluate how major export gateways in Karnataka impact the state's floriculture exports and recommend policy actions to boost export competitiveness.

III. Methodology

The study uses secondary data from government sources from 2015–16 to 2025-26, including APEDA, DGCI&S, and others. It examines India's floriculture export performance, focusing on Karnataka, analysing export quantities, values in INR and USD, and the main gateways. Data were compiled, classified, and summarised using descriptive statistics, trend analysis, and percentage growth measures. The comparative analysis assessed Karnataka's export trends over the years, with tables and graphs illustrating the findings. The results highlight export trends, growth patterns, and Karnataka's performance in floriculture exports.

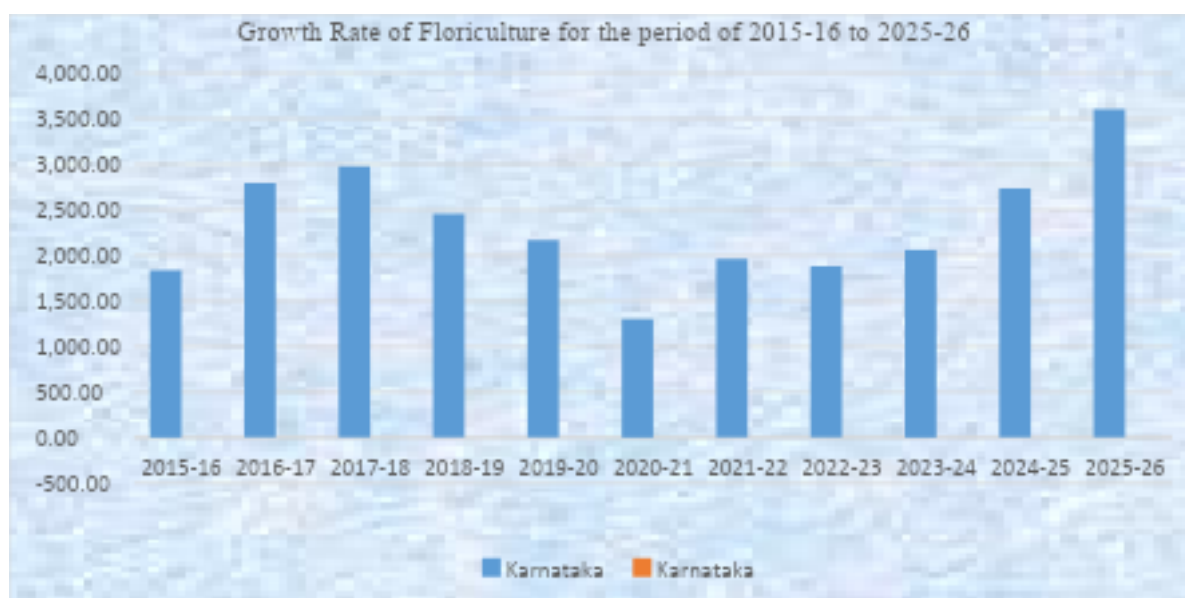
IV. Trends and growth of floriculture exports in Karnataka

The floriculture sector in Karnataka has witnessed significant growth over the years, making the state one of India's leading producers and exporters of flowers. Favourable agro-climatic conditions, advanced cultivation techniques, and increasing adoption of protected cultivation have contributed to the expansion of floriculture. Karnataka is a major producer of cut flowers such as roses, carnations, gerberas, chrysanthemums, and orchids, catering to both domestic and international markets. Bengaluru has emerged as the state's floriculture hub due to its well-developed infrastructure and proximity to international air cargo facilities. The establishment of floriculture parks and government support through various horticulture schemes have further accelerated the sector's growth. Export-oriented flower cultivation has increased, particularly for high-value cut flowers destined for Europe, the Middle East, and Southeast Asia. Although the sector experienced a temporary decline during the COVID-19 pandemic, exports recovered steadily with the reopening of international markets. Improvements in cold-chain infrastructure, logistics, and quality standards have enhanced Karnataka's competitiveness in the global floriculture trade. The growing demand for ornamental plants and flowers has also encouraged investment and employment in the sector. Overall, Karnataka continues to play a pivotal role in India's floriculture industry, with strong potential for sustained growth and export expansion.

Table1: export trends and growth rate of Karnataka floriculture

Year	Quantity in MT	Growth Rate (%)
2015-16	1,835.93	
2016-17	2,797.44	0.52
2017-18	2,979.70	0.07
2018-19	2,451.50	-0.18
2019-20	2,165.16	-0.12
2020-21	1,299.74	-0.40
2021-22	1,959.72	0.51
2022-23	1,883.17	-0.04
2023-24	2,059.61	0.09
2024-25	2,734.34	0.33
2025-26	3,604.20	0.32

Source: APEDA Statistics

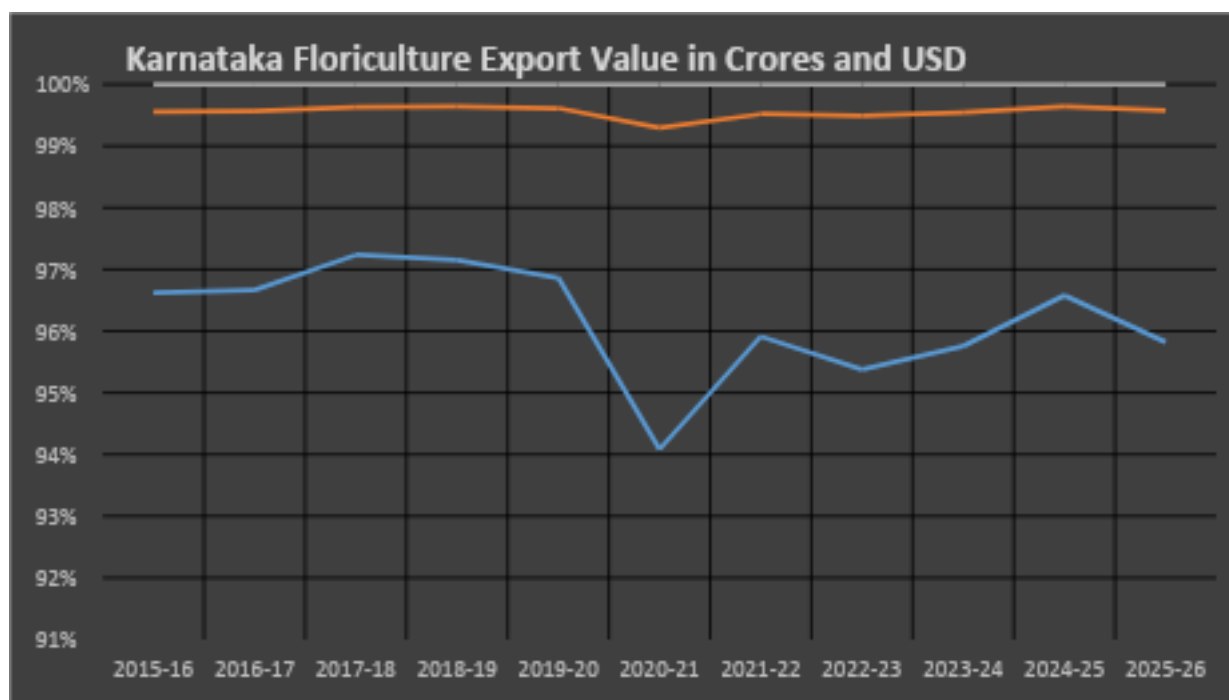


Karnataka's floriculture export growth from 2015–16 to 2025–26 fluctuated due to domestic and global factors. Export quantity rose from 1,835.93 MT in 2015–16 to 2,797.44 MT in 2016–17, with the highest growth of 0.52%. Growth slowed to 0.7% in 2017–18 but was followed by declines of 0.18% in 2018–19 and 0.12% in 2019–20. The pandemic caused a 0.40% drop in 2020–21, but exports rebounded with a 0.51% growth in 2021–22. Slight declines occurred in 2022–23 (0.04%) and 2023–24 (0.9%), while growth accelerated to 0.33% in 2024–25 and 0.32% in 2025–26, reaching 3,604.20 MT. Despite setbacks, the sector showed resilience, with post-pandemic growth reflecting increased competitiveness, efficiency, and market presence.

Table2: Export value in crores and USD of Karnataka floriculture

Year	Qty in (Mt)	Value in Crores	Value in USD Million
2015-16	1,835.93	55.79	8.44
2016-17	2,797.44	83.88	12.52
2017-18	2,979.70	73.38	11.39
2018-19	2,451.50	62.83	8.97
2019-20	2,165.16	61.49	8.63
2020-21	1,299.74	72	9.72
2021-22	1,959.72	73.63	9.87
2022-23	1,883.17	81.15	10.07
2023-24	2,059.61	81.44	9.82
2024-25	2,734.34	86.61	10.22
2025-26	3,604.20	141.27	15.97

Source: APEDA Statistics



Export value in Karnataka outpaced export quantity, rising from ₹55.79 crore in 2015–16 to ₹141.27 crore in 2025–26 and US\$8.44 million to US\$15.97 million in the same period. This shows growth in both volume and value, driven by better quality, pricing, and demand for premium flowers. External shocks impacted the sector, with export quantity dropping to 1,299.74 MT in 2020–21, but value remained high at ₹72.00 crore, indicating resilience and a shift toward value-added products. Karnataka's role as India's top floriculture exporter strengthens, contributing to exports, rural jobs, and state income. Continued investment in cold-chain, logistics, quality, and market diversification is essential for sustained growth and global competitiveness.

V. Major floricultural export gateways in Karnataka

Karnataka's floriculture exports are primarily routed through Bengaluru International Airport, which serves as the state's principal export gateway and accounts for the overwhelming share of flower exports due to its excellent air cargo infrastructure. New Mangalore Sea Port contributes a smaller share, mainly for selected export consignments. ICD Bengaluru (Inland Container Depot) also facilitates limited exports by supporting containerised shipments. Mangalore Air Cargo handles only a marginal proportion of floriculture exports. Overall, Bengaluru Airport remains the dominant gateway because of its efficient logistics, cold-chain facilities, and direct international connectivity, making it the backbone of Karnataka's floriculture export trade.

Table3: Major Floricultural Export Gateways in Karnataka

Year	Bangalore Airport	Mangalore Air Cargo	Icd Bangalore	Newmangalore Sea	Total
2015-16	1,819.88	0	16.06	0	1,835.94
2016-17	2,056.43	0	2.74	738.27	2,797.44
2017-18	2,593.94	0	49.8	335.97	2,979.71

2018-19	2,438.03	0	13.48	0	2,451.51
2019-20	2,148.17	0	14.99	2	2,165.16
2020-21	1,296.36	0.27	2.83	0.27	1,299.73
2021-22	1,952.16	4.28	0.51	2.78	1,959.73
2022-23	1,876.78	0.37	0.09	5.94	1,883.18
2023-24	2,050.29	1.82	6.2	1.3	2,059.61
2024-25	2,714.27	13.3	6.77	0	2,734.34

APEDA: Statistics

The table shows Karnataka's floriculture exports via different gateways from 2015–16 to 2024–25. Bengaluru Airport has consistently been the main gateway, handling the largest share due to its modern facilities and international connections. Its exports increased from 1,819.88 MT in 2015–16 to 2,714.27 MT in 2024–25, with the increase dominating most years. Mangalore Sea Port contributed only in 2016–17 and 2017–18, then declined due to the perishable nature of the products and shipping delays. ICD Bengaluru and Mangalore Air Cargo handled minimal shipments, mainly post-2020. The total exports dropped sharply in 2020–21 due to COVID-19 but recovered to 2,734.34 MT in 2024–25. Bengaluru Airport's ongoing dominance highlights its strategic importance. Overall, the reliance on air transport underlines the need to improve logistics, cold-chain infrastructure, and alternative gateways for sustainable growth.

VI. Findings

1. Karnataka's floriculture export quantity increased from 1,835.93 MT in 2015–16 to 3,604.20 MT in 2025–26, indicating substantial long-term growth despite annual fluctuations.
2. The highest annual export growth (52%) was recorded in 2016–17, while the sharpest decline (40%) occurred in 2020–21 due to the COVID-19 pandemic.
3. Export earnings in US dollars almost doubled during the study period, increasing from US\$8.44 million to US\$15.97 million, reflecting improved international demand and better price realization.
4. During **2020–21**, although export quantity declined sharply, export value remained relatively stable, indicating higher unit prices and increased exports of premium-quality flowers.
5. Bengaluru International Airport remained the dominant export gateway, accounting for almost all floriculture exports from Karnataka because of its superior air cargo facilities and international connectivity.
6. New Mangalore Sea Port, ICD Bengaluru, and Mangalore Air Cargo contributed only marginally to floriculture exports, in

VII. Policy Suggestions

1. Strengthen Export Infrastructure and Logistics: The government should enhance cold-chain facilities, air cargo capacity, packaging infrastructure, and transportation networks, particularly at

Bengaluru Airport and other potential export gateways, to reduce post-harvest losses and ensure the timely delivery of high-quality floriculture products to international markets.

2. **Promote Market Diversification and Export Incentives:** Efforts should be made to expand floriculture exports to new international markets through trade promotion activities, export incentives, quality certification support, and participation in global flower exhibitions. This will increase export competitiveness, reduce dependence on a few markets, and promote sustainable growth in Karnataka's floriculture exports.
3. **Promote Quality Certification and International Standards:** Encourage growers and exporters to obtain international certifications such as Global G.A.P., and quality assurance standards to improve market access and competitiveness in global markets.

VIII. Discussion & Conclusion

The findings indicate that Karnataka has established itself as the leading floriculture-exporting state in India, supported by favourable agro-climatic conditions, modern greenhouse cultivation, and well-developed export infrastructure. The upward trend in export quantity and value demonstrates the sector's growing contribution to agricultural exports and rural employment. Although the COVID-19 pandemic caused a temporary decline in export volume during 2020–21, the rapid recovery in subsequent years reflects the resilience of the sector and the revival of international demand. A notable finding is that export value increased more rapidly than export quantity, suggesting improvements in product quality, value addition, and favourable international prices. The overwhelming dependence on Bengaluru International Airport confirms its strategic role in Karnataka's floriculture export supply chain, while the limited contribution of other gateways highlights the need for infrastructure diversification. These findings are consistent with earlier studies that emphasized the importance of export logistics, cold-chain facilities, quality certification, and market expansion in improving floriculture export performance. Therefore, strengthening institutional support, improving logistics, and exploring new international markets will be essential for sustaining long-term growth and enhancing Karnataka's competitiveness in the global floriculture industry.

The study concludes that Karnataka plays a pivotal role in India's floriculture export sector and has recorded steady progress in export performance during 2015–16 to 2025–26. Despite temporary setbacks caused by the COVID-19 pandemic, the sector demonstrated remarkable resilience and achieved record export quantity and value in the later years of the study. The consistent increase in export earnings indicates improvements in product quality, market demand, and export competitiveness. Bengaluru International Airport continues to be the backbone of Karnataka's floriculture exports because of its advanced air cargo and cold-chain infrastructure. However, dependence on a single export gateway and challenges related to logistics, post-harvest management, and market access require policy attention. Strengthening export infrastructure, expanding cold-chain facilities, promoting quality certification, and diversifying international markets will be crucial for sustaining future growth. Overall, Karnataka's floriculture sector has significant potential to increase foreign exchange earnings, generate rural employment, and contribute further to India's horticultural export development.

References

- [1] Agricultural and Processed Food Products Export Development Authority. (2024). APEDA export statistics: Floriculture exports. <https://apeda.gov.in>
- [2] Agricultural and Processed Food Products Export Development Authority. (2025). *Agri exchange statistics database*. <https://agriexchange.apeda.gov.in>
- [3] Kumar, S. (2023). Export performance of Indian floriculture products: Trends and destination-wise analysis. *International Journal of Agricultural Economics*, 8(3), 145–154.
- [4] Kumarasamy, N., & Harshavardhini, R. (2021). Growth and export performance of the floriculture industry in India. *International Journal of Agricultural Sciences*, 13(2), 102–110.
- [5] Keshava, S. R. (2013). Socio-economic exclusion of Indian farmers in the economic growth: Policy intervention for inclusion. *International Academic Journal of Applied Economics*, 4.
- [6] Keshava, S. R. (2010). *Economics: For UPSC-IAS, IPS, State Civil Service preliminary exams and UGC-JRF/NET, SLET & other competitive exams*. New Age International (P) Limited, Publishers.
- [7] Singh, R., Shree, S., & Bhardwaj, A. (2020). Floriculture in India: Opportunities, challenges, and export potential. *Indian Journal of Economics and Development*, 16(4), 567–575.
- [8] Sowmya, M., & Harisha, M. (2024). Growth and export performance of Indian floriculture: An analytical study. *International Journal of Research in Commerce, Economics and Management*, 14(1), 25–33.
- [9] **Additional Data Sources (if used in the study)**
- [10] Directorate General of Commercial Intelligence and Statistics. (2025). Export-import data bank. Ministry of Commerce and Industry, Government of India. <https://www.dgcis.gov.in>
- [11] Department of Horticulture, Government of Karnataka. (2024). Annual report 2023–24. <https://horticulture.karnataka.gov.in>
- [12] Ministry of Commerce and Industry. (2025). Foreign trade statistics. Government of India. <https://commerce.gov.in>