

Kerala's Floral Exports: Insights on the Cut Flower trade

ABSTRACT

This study provides an in-depth analysis of Kerala's flourishing floriculture industry, with a specific focus on the production and export of cut flowers. Benefiting from diverse agro-climatic conditions, the research tracks notable increases in the area, production, and productivity of cut flowers since 2014. Despite facing logistical challenges, lack of governmental support, and infrastructural deficiencies, Kerala has successfully penetrated major markets such as the USA, Canada, and Singapore, indicative of high demand and quality acceptance. Financial barriers, including currency exchange and insurance difficulties, pose ongoing challenges. The study calls for improved support mechanisms for pre and post-shipment processes to maintain market competitiveness and support growth. By advocating for collaborative efforts between government and private sectors, the study aims to optimize the global market presence of Kerala's floriculture exports. This analysis lays a robust foundation for strategic interventions aimed at advancing Kerala's position in the international floriculture market.

KEYWORDS

Cut flower, Export challenges, Flower production, Export share, Logistics

INTRODUCTION:

Floriculture is a diverse industry that includes businesses that produce cut flowers (flowers or flower buds) as well as loose flowers and ixoras as well as cut foliage, potted plants, dry flowers, and plants that are grown for aromatic oils and natural colours. Traditional flowers (loose flowers) and cut flowers are grown under different conditions: in an open field and in a protected setting. In 2023, the market for cut flowers was estimated to be worth \$30.9 billion USD. By the end of 2031, it is anticipated to reach US \$ 52 billion after expanding at a CAGR of 6.0% between 2023 and 2031. The US, the UK, and Germany are among the nations that import cut flowers in significant quantities by Cut Flowers Market Trends, Analysis & Forecast – 2027 (2023).

Floriculture is a diverse enterprise in India. India is blessed with a variety of agro-climatic zones that are ideal for the development of delicate and sensitive floriculture goods. The floriculture industry made significant progresses in the export market during the decade that followed liberalisation (Sowmya & Harisha N, 2024). Production of commercial goods has dynamically shifted from food in this era. According to the National Horticulture Board's Database, 285 thousand hectares of land with a production of 3194 thousand MT in floriculture production in India during 2023-24 by APEDA (2024), producing 645 metric tonnes of cut flowers and 21.52 lakh metric tonnes of loose flowers (Gaddi et. al, 2024). Several states currently practise commercial floriculture, with Tamil Nadu (21.43 %), Karnataka (16.24%), Madhya Pradesh (14.60 %), West Bengal (11.29 %) and Gujarat (6.16 %) surpassing other producing states including Chhattisgarh, Maharashtra, Andhra Pradesh, Uttar Pradesh, Assam, Odisha, Telangana, Haryana, Nagaland, Jharkhand, Sikkim, Punjab, Uttarakhand, Bihar, Rajasthan, Himachal Pradesh, Tripura, Mizoram, Jammu & Kashmir, Kerala, Meghalaya, Manipur and Arunachal Pradesh in terms of production ("Area and Production of Horticulture Crops for 2023-24 by 2nd Advance Estimates (2024).

In 2021-2022, India exported floriculture products of Rs. 707.81 Crores/88.38 USD Millions. United States, Netherlands, United Arab Emirates, U.K. and Germany were the top importers. In India, there are more than 300 units focused on exports. Tamil Nadu, Karnataka, Madhya

Pradesh and West Bengal produce more than half of the products used in floriculture. The Indian floriculture industry is ready to enhance its position in global trade with the help of technical collaborations from foreign enterprises by APEDA (2024).

Kerala is selected as the focal region for this study due to its significant growth in both production and exports. The study aims to examine the increase in Kerala's production statistics in relation to India's overall production and exports. The subtropical climate of the Idukki and Wayanad districts is ideal for the commercial growth of plants like silver dollar, buxus, leather leaf fern, hosta, and numerous bulbous crops as well as flowers. Kerala boasts a favourable business environment, with four international airports and an extensive network of roadways. The specific objectives of the study are to analyse the growth trends in area, production, and productivity of cut flowers in Kerala; to understand the trends of major export destinations for Kerala's cut flowers; and to identify the major challenges faced by exporters of cut flowers in the study area.

METHODOLOGY

The research methodology used for this study was descriptive in nature to collect both primary and secondary data to achieve the objectives of the study. Data was collected through both open and closed-ended interviews with exporters in the study area, focusing on cut flower export. The interviews were supplemented with data from various web portals.

Primary data was collected from the exporters themselves, and secondary data was collected from established web portals like DGCIS, APEDA, India stat and ITC Trade Map. The data collection was to fulfill the objectives of the project by collecting information from these primary and secondary sources. For this study a total of 30 exporters from various districts of Kerala were selected. The exporters were divided into three groups based on their years of experience in cut flower export: less than 5 years, 5 to 10 years and above 10 years. Each group had 10 exporters from districts of Alappuzha, Ernakulam, Idukki, Kasargod, Kallam, Kottayam, Palakkad, Pathanamthitta, Thiruvananthapuram and Thrissur. Judgmental sampling was used as the sampling method, selecting exporters based on their experience levels as mentioned above. The primary research instrument used was a well-designed questionnaire which had both open and closed-end questions to collect the data.

RESULTS

Growth trends in area, production and productivity of cut flowers in Kerala

Kerala is one of the leading states in India in terms of production and productivity of cut flowers. The data on table 1 demonstrates that Kerala's total flower production and acreage have increased steadily over time.

Table 1: Area, production and productivity total flowers in Kerala

Area, production and productivity of total flowers in Kerala					
Year	Area (^{'000} Ha)	Production (In ^{' 000} MT)		Productivity (In MT/Ha)	
		Loose	Cut	Loose	Cut

2011-2012	0.00	0.00	0.00	0.00	0.00
2012-2013	0.00	0.00	0.00	0.00	0.00
2013-2014	0.00	0.00	0.00	0.00	0.00
2014-2015	13.4	0.05	32.86	0.004	2.45
2015-2016	12.88	0.02	0.59	0.001	0.045
2016-2017	16.05	0.03	0.75	0.001	0.046
2017-2018	38.25	0.077	28.16	0.002	0.736
2018-2019	53.26	0.08	44.84	0.002	0.841
2019-2020	53.26	0.08	44.84	0.002	0.841
2020-2021	53.26	0.08	44.84	0.002	0.841
CAGR (%)	25.86	8.15	5.32	-10.91	-16.32

Source:

https://agriexchange.apeda.gov.in/product_profile/exp_f_india.aspx?categorycode=0101

Table 1 shows a comprehensive look at the area, production, and productivity of flower cultivation in Kerala from 2011-2012 to 2020-2021, specifically tracking both loose and cut flowers. Initially, no land was dedicated to flower farming until 2014-2015, when cultivation began to pick up significantly. By 2018-2019, the area stabilized at approximately 53.26 thousand hectares, a substantial increase that remained consistent through 2020-2021. This rapid expansion in cultivation area is reflected in a Compound Annual Growth Rate (CAGR) of 25.86% over the decade, indicating strong growth.

Regarding production, loose flowers only started being recorded in 2014-2015 and saw a gradual increase to 0.8 thousand metric tons by the end of the period. Cut flowers, however, had very minimal output, starting from virtually none and slightly increasing to a stable output of 0.002 thousand metric tons annually from 2017-18 onwards. The CAGR for loose flowers was 8.15%, showing steady progress, while cut flowers had a slower growth rate of 5.32%.

The scenario of productivity is different. While the output of loose flowers increased somewhat year over year, that of cut flowers peaked in 2014-15 at 2.45 MT/Ha before declining dramatically and stabilizing at 0.841 MT/Ha by the conclusion of the year. The productivity CAGR for cut flowers was -16.32% and for loose flowers was -10.91%, indicating a concerning decrease in efficiency per hectare. These unfavourable productivity trends may indicate possible problems like overuse of agricultural land or ineffective farming methods.

Trends of major export destinations of Kerala

The objective aims to identify export markets for cut flowers. Using time series data from past exports, trends in the market were analysed.

Trends in export of cut flowers from India

In 2022, India exported goods worth \$22 million under the category "Cut flowers and flower buds of a kind suitable for bouquets or for ornamental purposes, fresh, dried, dyed, bleached, impregnated or otherwise prepared". In 2022, the USA (\$4.91 million or 22% of the total exports of the commodity group) was India's top export destination. Other significant avenues for this commodity group's export from India in 2022 include Malaysia (\$3.29 million or

14.8%), UAE (\$2.3 million or 10.3%), Singapore (\$2.21 million or 10%), UK (\$1.77 million or 8%), Netherlands (\$1.45 million or 6.56%), Australia (3.01%), Kuwait (2.44%), Nepal (2.18%), Canada (2.04%) (TrendEconomy, 2024).

Table 2: Trends in export quantity (MT) of cut flowers from India

Importing countries	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	CAGR (%)
USA	2408.58	3302.62	2947.4	1417.75	987.03	696.37	637.97	533.2	482.05	769.96	-10.78
Malaysia	79.28	143.56	285.42	417.33	511.46	790.76	855.51	808.03	491.66	839.47	26.61
UAE	419.14	414.81	954.61	727.44	738.26	705.3	755.01	822.84	629.13	916.31	8.14
Singapore	545.05	764.48	906.68	1172.96	1335.72	1955.07	1991.27	2018.39	1391.74	1917.83	13.41
UK	971.24	1638.58	1982.5	1561.21	1629.8	1295.15	725.19	497.67	219.43	248.17	-12.75
Netherland	1280.7	1296.58	1517.96	855.46	381.65	185.41	69.26	34.65	38.01	119.23	-21.13
Australia	264.88	226.9	438.2	339.35	202.68	137.18	229.05	98.97	16.92	44.46	-16.34
Kuwait	17.69	88.84	23.26	46.18	121.04	81.33	123.33	86.31	116.55	157.36	24.43
New Zealand	69.28	140.01	103.05	101.65	150.11	260.14	196.03	135.08	31.96	46.17	-3.98
Nepal	10.59	4.93	15.96	53.91	46.85	53.1	64.05	156.82	681.17	1332.48	62.17
Canada	301.91	431.63	443.03	440.36	462.93	278.19	112.47	66.91	71.49	128.17	-8.21
Spain	100.92	182.85	156.01	50.67	61.96	71.11	146.38	25.6	37.61	8.19	-22.21
Saudi Arabia	163.7	126.83	160.19	322.69	395.47	278.28	197.67	180.65	57.56	124.21	-2.72
Philippines	13.29	20.32	6.5	14.21	14.94	5.46	8.74	24.57	11.93	19.93	4.14
Germany	1434.42	1718.68	1641.08	789.35	503.55	218.79	152.98	115.9	69.25	83.62	-24.74

Source: Researchers own compilation of data from secondary sources

The table 2 shows a comprehensive view of India's cut flower exports to various countries from 2012 to 2023, including the compound annual growth rate (CAGR) for each country. The data reveals mixed trends across different markets.

This diverse set of trends underscores the dynamic nature of the global market for Indian cut flowers. Markets like Singapore, Malaysia, and Nepal are expanding, offering opportunities for growth, whereas traditional markets like the Netherlands, UK, and Germany are facing declines. These insights are crucial for stakeholders in the floriculture sector, as they highlight the need for adaptive strategies in production and marketing to cater to the changing demands of international trade.

Trends in export of cut flowers from Kerala

The export of cut flowers from Kerala, India, has increased in recent years. The trend is especially noticeable in the United States, Canada, the United Arab Emirates, Singapore, Saudi Arabia, the Netherlands, Malaysia, and Indonesia.

Table 3: Trends in export quantity (MT) of cut flowers from Kerala

Importing Countries	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	CAGR (%)
USA	0.00	0.00	0.00	0.24	0.35	0.25	5.95	5.24	6.45	9.20	83.62

Canada	0.00	0.00	0.00	0.11	0.10	0.12	8.14	9.06	5.98	8.89	107.93
UAE	0.00	0.00	0.00	0.03	0.02	0.12	3.80	0.30	2.71	1.99	101.20
Singapore	0.00	0.00	0.00	0.07	0.02	0.09	4.0	4.07	4.3	9.27	125.77
Qatar	0.00	0.00	0.00	0.08	0.20	0.13	0.91	0	0.09	0.35	27.89
Saudi Arabia	0.00	0.00	0.00	0.06	0.08	0.01	7.98	7.25	2.21	10.40	136.31
Netherlands	0.00	0.00	0.00	0.09	0.04	0.08	0.96	6.27	1.28	11.20	123.44
Oman	0.00	0.00	0.00	0.00	0.24	0.05	1.5	2.3	0.22	0.55	18.04
Kuwait	0.00	0.00	0.00	0.00	0.36	0.01	5.1	0.16	0.58	0.60	10.76
Indonesia	0.00	0.00	0.00	0.00	0.16	0.03	0.44	0.45	0.49	0.75	36.20
Malaysia	0.00	0.00	0.00	0.00	0.00	0.01	0.64	0.72	1.26	1.53	251.70

Source: Researchers own compilation of data from secondary sources

Table 3 shows a comprehensive analysis of the expansion of Kerala's flower exports to different nations between 2011 and 2021. The data indicates the steady emergence of a market presence throughout several nations, along with noteworthy expansion in specific markets, as demonstrated by the Compound Annual Growth Rate (CAGR). Initially, exports were negligible or zero to all listed countries until around 2014-2015, when Kerala start seeing small quantities beginning to appear. This likely indicates the initial phases of market entry or the establishment of trade relationships.

This data reflects a diverse set of market responses, with some countries showing explosive growth in a relatively short period. It underscores the importance of targeted market strategies and the potential of specialized products like cut flowers in global trade. The growth in export quantities also suggests successful marketing strategies and growing demand in both established and emerging markets.

Problems faced by the exporters in the study area

India has significant benefits in floriculture, particularly cut flowers, due to its favourable agro-climatic conditions and low agricultural land costs. However, the industry has yet to bear fruit due to challenges such as labour, markets, supporting agencies, and credit. The government and corporate sector are taking initiatives to overcome these obstacles, such as creating an AEZ (Agri Export Zone) for flower export under EXIM POLICY 2002-07 by Ghadge et al., (2010).

Even though Kerala is a leading producer, it lags other states in exports. Kerala is also a promising export destination due to the presence of ports. The difficulties that exporters face have been identified through interviews with exporters.

Problems faced in domestic market

Cut flower exports in Kerala have seen a triumph in terms of importance to the local economy. However, the industry faces a number of challenges that have resulted in a notable hitch to its growth. The garret ranking of problems is presented in Table 4.

Table 4 Problems faced by cut flower exporters in study area

Particulars	Average score	Rank
More focus for domestic consumption	67.5	1

Lack of assistance by government	60.67	2
Lack of logistics	60.33	3
Lack of awareness for rules and policies	59.67	4
Lack of infrastructure	51	5

Source: Compiled by the researcher from primary data

Exporters say that the most prominent problem is the focus on domestic consumption having a Garette score of 67.5 hindering their desire to export more cut flowers. This situation is further compounded by the lack of government support showing that exporters are having difficulty taking advantage of government programs or schemes Tiwari et al., (2021) have also reported that government assistance is beneficial and can help in export business. Lack of government assistance ranks second with a Garette score of 60.67. In addition, there is a lack of logistics and awareness of rules and policies, which means more information and support is needed for cut flower exporters to help them understand applicable rules and policies. The lack of infrastructure with a Garette score of 51 has prevented the flower export industry from becoming a viable source of income for the state economy.

Financial problems faced by the exporters

The exporters of cut flowers in Kerala are facing significant financial challenges. The biggest challenge they face is currency exchange with a Garrett score of 62.67, indicating that currency risk and other currency-related issues remain a major barrier for cut flower exporters. They also had trouble getting marine insurance with a score of 58.83 and Ramesh et al., (2014) have also mentioned lack of insurance support for MAHAGRAPES export, which is essential to protect their shipments. Finally, they also face export finance problems with a score of 57.67, such as not having access to adequate or low-cost financing to support their business. Garrett's rankings for issues are shown below.

Table 5 Financial problems faced by cut flower exporters in study area

Particulars	Average score	Rank
Issues in currency exchange	62.67	1
Difficulties in marine insurance	58.83	2
Issues in export financing	57.67	3

Source: Compiled by the researcher from primary data

Pre-shipment problems faced by the exporters

The biggest concern in terms of pre-shipment issues faced by exporters, with a Garette score of 68.67, are strict phytosanitary measures and quality standards. The suggested phytosanitary measures are mainly concerned with plant and product certification, pest control in production areas, pollution prevention measures, pesticide residue testing, and storage and quality checks. Quality standards are set including freshness, size, colour, uniformity, pest free and other parameters. Difficulty in getting ECGC (Export Credit Guarantee Corporation) schemes came

in second with a score of 55. The Government of Kerala has taken several steps to address these issues by introducing different policies and programs. Some of these include setting up an export promotion council, developing an export facilitation centre, encouraging exporters to improve quality, diversifying markets and providing support technical support and advice. The government also provides various subsidies for export activities, such as freight subsidies, training subsidies, trade fair subsidies, and investment subsidies. The lowest ranked factor was the issue of export subsidies, with an average score of 53.17. Strict phytosanitary measures and quality standards are considered the main limitations. By addressing these issues, exporters of cut flowers from Kerala can ensure that they remain competitive in the global market. Garrett's rankings for the issues are listed below.

Table 6 Pre-shipment problems faced by cut flower exporters in study area

Particulars	Average score	Rank
Stringent phytosanitary measures and quality standards	68.67	1
Difficulty in obtaining ECGC schemes	55	2
Problems for subsidies for exporters	53.17	3

Source: Compiled by the researcher from primary data

Post-shipment problems faced by the exporters

Cut flower exporters from India are facing many post shipment issues. The table 7 below outlines garret rankings for post-shipment problems.

Table 7 post-shipment problems faced by cut flower exporters in study area

Particulars	Average score	Rank
Increase in freight and container costs	72.83	1
Lack of trust for Indian quality	65.17	2
Brand awareness issues	55.33	3
Difficulties in handling the storage farm to overseas	50.50	4
Issues in post-handling formalities	47.50	5

Source: Compiled by the researcher from primary data

The post-delivery problems experienced by cut flower exporters in the study area were mainly due to increased shipping and container costs as they scored a Garrett score of 72.83. Rising freight and container shipping costs can be attributed to many reasons such as rising fuel prices, regulatory issues and economic flows in international markets. This was followed by lack of trust for Indian quality, which scored an average of 65.17, and brand awareness issues, which scored 55.33. This may be due to the perception that Indian flowers are of lower quality than the competitors in the global market. Thanh et al., (2012) also mentioned and agreed on difficulties in handling from farm to overseas with a score of 50.50 was also reported. Post-

delivery handling was the least problematic, with an average score of 47.50. Among all these difficulties, the increasing cost of freight and containers is considered the most important challenge.

DISCUSSION

The results of this study underscore the significant growth and potential of the floriculture industry in Kerala, particularly in the realm of cut flower exports. The increasing area, production, and productivity of cut flowers, as highlighted in the findings, represent a dynamic shift from a nascent stage in 2014 to substantial growth by 2023. The study's revelation of Kerala's major export destinations reflects a strong alignment with the trends reported by APEDA (2024) where these nations are prominent consumers of Indian floricultural products. The Compound Annual Growth Rate (CAGR) observed in the exports to these countries points to a responsive market that values the quality and variety offered by Kerala's floriculture sector. Such trends are supportive of the findings by Sowmya & Harisha (2024), which emphasized India's evolving floriculture landscape post-liberalization.

However, despite the positive export trends, the study also brings attention to several challenges hindering optimal growth. The discussion around logistical challenges, insufficient government support, and infrastructural deficits resonates with findings from similar studies in other Indian states (Ghadge et al., 2010; Tiwari et al., 2021). These studies underline the critical need for enhanced infrastructural and governmental backing to support floriculture exports, suggesting a common bottleneck across different regions in India. Interestingly, the findings on the productivity trends of cut flowers in Kerala indicate a significant concern. The negative productivity growth rate suggests potential issues such as over-utilization of land or inefficient farming practices, which is a divergence from the positive trends noted in previous studies like that of Gaddi et al. (2024). This discrepancy highlights the unique challenges faced by Kerala's floriculture sector.

The study's observations on financial challenges, including currency exchange and insurance coverage issues, reflect broader economic constraints impacting Indian exporters. These findings align with Ramesh et al. (2014), who noted similar financial impediments in other agricultural export sectors, suggesting a systemic issue that transcends individual agricultural domains.

CONCLUSION

The study effectively despite its late entry in 2014, Kerala is becoming more and more prominent in the floriculture export market, especially in cut flowers. With a notable expansion in foreign markets like the USA, Canada, and Singapore, the state has shown notable improvements in production and export volumes over the years. The rising Compound Annual Growth Rate (CAGR) in these nations suggests that Kerala's floriculture goods are in high demand worldwide. Nonetheless, several obstacles still stand in the way of ideal growth. Infrastructure limitations, a lack of government assistance, and logistical inefficiencies have become major obstacles. The competitiveness of Kerala's floriculture industry is further restricted by financial concerns, such as currency exchange risks and challenges obtaining export financing. The study also raises concerns about decreasing productivity, pointing to the

necessity of sustainable practices and better farming methods. Enhancing pre-shipment and post-shipment processes, especially through improved compliance with phytosanitary standards and lowering freight costs, is essential for long-term success. Government and private sector collaboration can further boost Kerala's export potential, ensuring sustained growth and increased competitiveness in the global floriculture industry. By strategically addressing these challenges, Kerala's cut flower industry can emerge as a key player in the international market, maximizing its export potential

HIGHLIGHTS

- Growth trends in area, production, and productivity of cut flowers in Kerala
- Trends of major export destinations for Kerala's cut flowers
- Challenges faced by exporters of cut flowers

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