

Review Article

Indian Floriculture in Global Perspective

ABSTRACT

The flower is the most satisfying creation on Earth and makes billions of people happy and smile. The presence of flowers is required at all stages of the human life cycle, from conception to death. Flowers represent feelings like love, beauty, purity, and passion. Growing in importance as a farming method for economic reasons is floriculture. The floriculture business has a growth potential of 25–30% and ~~has the potential to~~ generate 20–25 times more foreign exchange than grains or other agricultural ~~products~~ crops. The flower sector has recently developed into one of the most active and quickly expanding industries, with a notable pace of growth over the past several years and global reach. Despite having lots of natural resources for effective flower growing, India still accounts for a tiny (0.4–0.5%) portion of the global flower trade. In terms of area and output of conventional loose flowers, India comes in second place to China. India takes approximately 15% of the global market for traditional loose flowers. The demand for flowers is growing both domestically and internationally, which puts countries in intense competition. With the right strategy and technological use, this industry will improve, and India may end up becoming a major producer and exporter of floricultural goods globally.

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Keywords: Cut flower, floriculture, flower trade, market.

1. INTRODUCTION

The flower is the most delightful living thing on Earth and makes billions of people happy and smile. The presence of flowers is required at all stages of the human life cycle, from conception to death. Flowers represent feelings like love, beauty, purity, and passion. Like a rose imparts love, ~~a lily~~ devotion and tranquilly, ~~a lotus~~ purity, ~~a narcissus~~ egotism, and a pansy thinking. India has a long-standing custom of flower cultivation. ~~Since since~~ the beginning of time, flowers and decorative plants have been incorporated into Indian culture, history, and customs for use in celebrations, worship, religious events, and women's hair ornamentation and house and environment decorating. Flowers have been linked to human existence from the time of the *Rig Veda* and the *Ramayana*. However, the social and economic elements of flower production are just recently becoming understood. Since the last two to three decades, floriculture has been regarded as having a clear commercial and economic function. Both local and international markets are experiencing a sharp increase in demand for floricultural products. In India, there has been a noticeable development in the production of cut and loose flowers, which have

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great potential for export. ~~Growing in importance as a farming method for economic reasons is floriculture.~~ The floriculture business has a growth potential of 25–30% and ~~has the potential~~ to generate 20–25 times more foreign exchange than grains or other agricultural crops [1]. With the increased use of covered cultivation through the application of shade nets, green houses, polyhouses, etc., commercial floriculture is growing day by day. Due to better farmer returns, commercial floriculture presents a fantastic potential for rural development ~~also~~. The flower sector has recently developed into one of the most active and quickly expanding industries, with a notable pace of growth over the past several years and global reach. Despite having ample natural resources for effective flower growing, India only accounts for a meager (0.4–0.5%) proportion of global flower trade [2].

Comment [WU3]: Or rewrite the sentence as it doesn't make any sense.

2. Importance of Floriculture

Comment [WU4]: Check the data and try to give recent data.

Comment [WU5]: Try to elaborate the importance part with suitable references.

The traditional ~~flower-foriculture~~ industry in India, which is mostly carried out by small or marginal farmers, consists of cultivating loose flowers primarily for worship, ~~constructing-making~~ garlands, and decorating. The usage of cut flowers in floral arrangements, home décor, ~~and~~ wreaths, veni, and garlands on many occasions has become an essential component of human culture. Natural dye extraction for textiles, food colouring, essential oils for perfume production, and smells are all growing in popularity. Employers in the floral industry include flower producers, suppliers, consultants, nurserymen, gardeners, business owners, nursery managers, ~~interior and outdoor landscaper~~ and others. India is able to make more than 25–30 times as much money overseas from floriculture goods as it does from grains or other agro-products. India might make roughly 100 crore rupees a year from floricultural goods. Among the commercial agricultural crops, flowers are now the most significant cash crop.

3. Scope

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The scope of floriculture in India has significantly expanded in recent years, as evidenced by government initiatives, financial assistance, and increases in production area, flower output, consumer demand, and export of floricultural goods. Unprecedented growth has been achieved as a consequence of business owners' enthusiasm, the government's emphasis, and increased demand on the domestic and international markets. The domestic market has grown dramatically for both cut flowers and loose flowers as a result of expanding urbanization, shifting social attitudes, and rising income levels. Indian roses, carnations, orchid gerberas, anthuriums, and chrysanthemums are significant cut flowers in addition to potted plants. Recently, lilies and other bulbous plants have gained popularity in the cut flower ~~industry~~. Other sectors in the floriculture sector, such as those producing potted plants, seeds and planting supplies, turf grasses, and value-added goods, also contribute to the industry's total growth.

Comment [WU7]: Add reference.

4. Status of Floriculture in World trade

Global floriculture commerce is thought to be worth around ~~US\$ 70 billion~~ and involves more than 145 nations [3]. ~~According to the AIPH (2010), flowers were grown on 702,383 ha in various nations, with Asia having the largest area at 523829 ha, followed by South America at 97152 ha, Europe at 48,705 ha, North America at 21,067 ha, Africa at 7,604 ha, and India at 183,000 ha, or 26% of the world's total area, for floriculture [4].~~ The cultivation and trading of cut and loose flowers, potted plants, bedding plants,

Comment [WU8]: Check data and give latest figure.

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leaves, dried flowers, and value-added floricultural goods under open or protected environmental conditions make up the worldwide floriculture sector. In the global commerce, cut flowers and potted plants account for about 80% of the total. In accordance with international trade classification, this category includes (a) bulbs, tuberous roots, and tubers (b) other live plants (c) cut flowers and flower buds, dyed, bleached, fresh dried, impregnated, or otherwise prepared, and (d) foliage, branches, and other parts (other than flowers and buds) of bushes, mosses, trees, shrubs, and other plants, lichens, and grasses, being goods of a kind suitable for bouquets or ornament. Globalization has had a significant impact on the floriculture business, which is changing quickly and seeing an increase in competitiveness on a daily basis. The primary traditional flower-growing nations are the Netherlands, Columbia, the United States, Japan, and Italy. The output of floriculture is developing in Asian nations including India, Thailand, China, Vietnam, and Bangladesh, as well as in Africa and Latin America, where it is expanding quickly. The Netherlands, Germany, the United Kingdom, the United States, Switzerland, and France consume over 80% of the world's flower production [5]. The Netherlands, which have a 52% worldwide market share, are the main flower-producing nation, followed by Colombia (15%), Ecuador (9%), Kenya (7%), Belgium (3%), Ethiopia (2%), Malaysia (1%), Italy (1%), Germany (1%), and Israel (1% of the market) [6]. In terms of area and output value for bulbous crops, the Netherlands is in the lead with 20577 hectares and 570 million Euros, respectively. Europe, which accounts for 77% of the worldwide market, is home to the world's commercial hub for floriculture. Aalsmeer in the Netherlands is home to the biggest global flower market. The other major domestic markets for cut flowers are mostly in Europe, specifically in Germany, the United Kingdom, France, Italy, Spain, the United States, and Japan. In recent years, Russia has developed into one of the major flower marketplaces. The Netherlands accounts for 47.7% of all exports of floricultural goods internationally, with Ecuador, Colombia, Kenya, Ethiopia, and Belgium being the other major exporters. The total value of all exports of floricultural goods worldwide is USD 9,784,525,000. India is ranked 14th in the world for exporting floricultural goods. In 2016–17, India exported 22,086 MT of flowers to the world for a total of 549 crores of rupees. The Netherlands, which accounts for 54% of global market output, is the world's top producer of cut flowers. The top two countries for producing rose oil are Bulgaria and Turkey.

5. Top ornamentals in Global Trend:

In pot plants important pot plants are Kalanchoe, Hedera, Ficus, Saintpaulia, ~~Pot-pot~~ chrysanthemum, Dracaena and ~~Pot-pot~~ rose. Major cut flowers are Rose, Tulip, Chrysanthemum, Gerbera, Carnation, Freesia and Lily. Top cut foliage ornamentals are Asparagus, Fern, Banksias, Eucalyptus, Podocarpus, Cypress and Thuja.

Table 1. Major Flower Producing Countries

Western Europe	The Netherlands, Italy, Germany, UK, Spain, France
Africa	Kenya, Zimbabwe, Ivory Coast, Morocco, South Africa
Latin America	Colombia, Ecuador
Asia	Japan, Israel, India, Vietnam, Thailand, Malaysia, Korea, China, Philipines

Comment [WU11]: Reference

Comment [WU12]: Reference

Comment [WU13]: If possible add 2020-21 data.

Comment [WU14]: Reference

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Comment [WU17]: Delete the repeated sentence.

Comment [WU18]: Reference.

Comment [WU19]: Check trend or trade.

Comment [WU20]: Check the for top pot plants list.

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Table 2. Major Flower Auction Centers and Major Flower Producing Countries in World

Major Flowers Auction Centers Around The World		Top Ten Countries in Flower Production	
Rank	Country	Rank	Country
First	Flora Holland, Netherlands	First	Netherland
Second	Ota Floriculture Auction Co. Ltd., Japan	Second	USA
Third	Landgrad, Germany	Third	Brazil
Fourth	Veilling Holambra, Brazil	Fourth	Sweden
Fifth	International Flower Auction Bangalore, (IFAB)Ltd., Bangalore	Fifth	Denmark
Six	MB Flores, Belgium	Six	Malaysia
Seven	Taipei Flowers Auction Co. Ltd. Taiwan	Seven	India
Eight	Ontario Flower Growers Co-operative, Canada	Eight	Switzerland
Nine	FloraMax Flower Auctions, New Zealand	Nine	Cambodia
Ten	FloraBella, Italy	Ten	Australia
Eleven	Dubai Flower Centre, UAE		

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The Indian government began concentrating on the horticulture and floriculture industries in the middle of the 1980s. The Department of Agriculture Cooperation and Farmers Welfare, which is a component of the Ministry of Agriculture & Farmers Welfare, is the focal agency for growing the horticulture industry in India [7]. The National Horticulture Board (2016) [8] reported that during the years 1993 and 2015–16, the area in India dedicated to floriculture expanded from 53000 ha to 278000 ha. About 2 lakh acres of the region are added every 15–16 years. Production of loose flowers grew from 880000MT in 2006-2007 to 1729000MT in 2012-2013 [4]. The output of cut flowers also saw a significant growth, rising from 3717.6 million in 2006-2007 to 7673.2 million in 2012-2013 [9]. Indian floriculture's home business is expanding at a yearly rate of 7–10%. Indian floriculture has a total annual growth rate of 8.9. Traditional flowers like marigolds, jasmine, and roses are produced on more than two thirds of the land used for floriculture. 2.01 million tonnes of flowers were produced in 2014–15 on a 0.24 million ha area under floriculture. The floriculture sector has a considerable positive impact on the Indian economy. India exported more than Rs. 1,003 crore (about USD 134 million) worth of floriculture products during the financial year 2020–2021, according to the National Horticulture Board (NHB) [10].

Comment [WU23]: Give the data on floriculture area in India, its old data.

Comment [WU24]: Five latest data and figure. Its old data and copied.

Table 3. Area, Production and Productivity of Floriculture in India from 2001-2017

Year	Area (in 1000 HA)	Production (in 1000 MT)	Productivity
2001-02	106	535	5.0
2002-03	70	735	11.0
2003-04	101	580	5.7
2004-05	118	659	5.6

Comment [WU25]: Add latest figure.

Comment [WU26]: Give latest table

2005-06	129	654	5.1
2006-07	144	880	6.1
2007-08	166	868	5.2
2008-09	167	987	5.9
2009-10	183	1021	5.6
2010-11	191	1031	5.4
2011-12	254	1652	6.5
2012-13	233	1729	7.4
2013-14	255	2297	9.0
2014-15	249	2143	8.6
2015-16	278	2184	7.9
2016-17 (estimated)	309	2246	7.3
CAGR	8.9	11.1	

Rose, carnation, gladiolus, chrysanthemum, tuberose, orchid, anthurium, and liliun are the top cut flowers sold in domestic markets. In the domestic flower market, several annuals such china asters, gypsophilla, statice, galiardia, and annual carnations are also used as cut flowers. Jasmine, rose, chrysanthemum, crossandra, marigold, tuberose, and china aster are the primary loose flowers, while barleria, calendula, dahlia, gomphrena, zinnia, etc. are the lesser ones. In terms of area and output of conventional loose flowers, India comes in second place to China. India takes approximately 15% of the global market for traditional loose flowers. This region is covered by marigold, jasmine, rose, chrysanthemum, and tuberose in excess of two thirds. India's historic loose flower production and geographic dominance are both held by Tamilnadu. A quarter of the production of loose flower comes from Tamilnadu. Karnataka, Andhra Pradesh, Punjab, Maharastra, Haryana, Gujarat, and West Bengal are some states that are producing loose flowers. In India, a 2.44 laks ha area generated 1840000 MT of loose flowers in the 2014–15 growing season, according to ICAR–DFR.

Table 4. Production Trend of loose flowers in different states of India

State or Union Territory	Area (,000 ha)	Production (,000MT)
Tamilnadu	39.80	521.78
Karnataka	24.75	178.03
Andhra Pradesh	28.04	302.53
Maharastra	11.36	57.61
Haryana	5.96	72.85
Gujrat	20.50	195.86
West Bengal	29.10	77.42
Punjab	2.09	13.07
Madhya Pradesh	31.42	375.62
Uttar Pradesh	21.33	46.70
Assam	5.19	34.89
Chhatisgarh	13.06	54.94
Total	312.93	2058.72

(Source: NHB database 2018-19) [11]

From 615 million cut flowers in 1992–1993, the output of cut flowers rose year after year, reaching

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43417.46 lakh Nos flowers in 2007–2008. India's output of cut flowers is led by West Bengal, followed by Maharashtra, Karnataka, and Gujrat. Uttar Pradesh, Delhi, and other states that produce a lot of cut flowers are also included. The production of cut flowers has practically tripled or quadrupled.

Comment [WU28]: Check and give recent information.

Table 5. Production trend of cut flowers in different states (lakh numbers)

State or Union Territory	2006-07	2007-08
West Bengal	12966	19680
Maharashtra	4774	5728
Karnataka	5660	5550
Gujrat	5063	5086
Uttar Pradesh	3746	3752
Delhi	1038	1045
Total	17926	43417

Comment [WU29]: Check and give latest information. Its 15 years old.

Table 6. Major production areas of flowers in India

Flowers	Growing areas
Rose	Karnataka, Tamilnadu, Maharashtra, Bihar, West Bengal, Uttar Pradesh, Gujrat etc. but the best quality roses are grown in Delhi, Chandigarh, Patiala, Jaipur, Dehradun, Meerut, Lucknow, Deoghar.
Jasmine	Mainly Tamilnadu and Karnataka and the other growing states are West Bengal, Gujrat, Assam, Maharashtra.
Marigold	Uttar Pradesh, Bihar, Delhi, Haryana, Punjab, West Bengal
Gladiolus	West Bengal, Maharashtra, Uttar Pradesh, Punjab, Haryana and Andhra Pradesh.
Tuberose	West Bengal, Karnataka, Tamilnadu and Maharashtra.
Chrysanthemum	Maharashtra, rajasthan, Madhya Pradesh, Tamilnadu, Karnataka and Bihar.
Potted plants	Bangalore, Kolkata, Trivandrum, Hyderabad, Ahmedabad, Delhi, Kalingpong, Gangtok.

Table 7. Some Native Ornamental Plants of India

Category	Plant Name
Seasonal Flower	<i>Gomphrena globosa</i> , <i>Clematis Montana</i> , <i>Impatiens balsamina</i> , <i>Meconopsis sp.</i> , <i>Pimpinella monoica</i>
Climbers	<i>Clitoria ternatea</i> , <i>Hiptage benghalensis</i> , <i>H. madhablota</i> , <i>Ficus repens</i> , <i>Porana paniculata</i>
Shrubs	<i>Rosa moschata</i> , <i>Nyctanthes arbotristris</i> , <i>Barleria cristata</i> , <i>Daedalacanthus nervosus</i> , <i>Holmskioldia sanguine</i> , <i>Jasminum sambac</i> , <i>Jasminum pubescens</i> , <i>Bauhinia acuminata</i> , <i>Mussaenda frondosa</i> , <i>Ixora spp.</i> , <i>Hamiltonia sauveolens</i> , <i>Crossandra infendibuliformis</i> , <i>Clerodebdron inerme</i>
Trees	<i>Butea monosperma</i> , <i>Cassia fistula</i> , <i>Cassia nodosa</i> , <i>Butea frondosa</i> , <i>Bauhinia variegata</i> , <i>Erythrina blakei</i> , <i>E. indica var. parcellii</i> , <i>E. variegata var. orientalis</i> , <i>Ficus religiosa</i> , <i>F. benghalensis</i> , <i>Lagerstroemia speciosa</i> , <i>Michelia champaka</i> , <i>Rhododendron sp.</i> , <i>Saraca indica</i>
Orchids	<i>Aerides crispum</i> , <i>A. multiflorum</i> , <i>A. odoratum</i> , <i>Anaectochilus roxburghii</i> , <i>Arachnis clarkei</i> , <i>Bulbophyllum leopardinum</i> , <i>Calanthe masuca</i> , <i>Dendrobim moschatum</i> , <i>D. nobile</i> , <i>D. phylum</i> , <i>Paphiopedilum faireanum</i> , <i>P. venstum</i> , <i>Rhynchostylis retusa</i> , <i>Vanda cristata</i> , <i>V. coerulea</i>
Bulbous plants	<i>Gloriosa superb</i> , <i>Eremerus himalicus</i>
Aquatic plants	<i>Nelumbo nucifera</i> , <i>Nymphaea spp.</i>

Table 8. Average Market Price for Major Flower Crops

Flowers	Unit	Price (US\$1 = Rs.40)Rs./kg or doz or each stem
Marigold	kg.	3-60
Jasmine	kg.	15-150
Crossandra	kg.	20-120
Chrysanthemum	kg.	5-25
Tuberose	kg.	5-30
Rose	kg.	6-60
Gladiolus	doz.	20-75
Carnation	doz.	30-75
Gerbera	doz.	36-75
Orchids	each stem	10-45
Liliums	each stem	10-45
Anthuriums	each stem	15-45

Kerala lacks any flower production yet nonetheless has a significant floral industry. East India and the peninsular contain the largest marketplaces. Coimbatore, Madras, and Madurai in Tamil Nadu; Trivandrum and Cochin in Kerala; Bombay and Pune in Maharashtra; Mysore, Bangalore, and Dharwad in Karnataka; and Hyderabad and Vijayawada in Andhra Pradesh are the largest marketplaces in peninsular India. Kolkata is located in the east and has three sizable marketplaces. The largest flower marketplaces in the North are in Lucknow and Delhi. The first and only digital flower auction hub in the nation is located in Bengaluru and is operated by the Karnataka Agro Industrial Corporation in Hebbal. The first and only online flower auction facility, www.rosebazar.com, was launched in Bengaluru in March 2000 by Karuturi Floritech.Ltd. [12]. Between 1991 and 1996, more than 170 export-focused floriculture units with a 1545 million stem capacity were established across the nation, costing more than 1500 crores to cultivate 40 different rose types on a 500ha plot of land. Fresh cut flowers, loose flowers, cut greenery, dry flowers, and potted plants are among India's floral exports. Dried flowers and plant parts account for 45% of exports, followed by blooming plants (22%), fresh foliage (13%), fresh cut foliage (9%), live plants (7%), and bulbs and tubers (3%). The floricultural industry contributed 304.69 crores of the Rs 1124342 crores in overall agricultural exports during the 2005–2006 year. The USA, Japan, the Netherlands, the United Kingdom, Italy, and France are major markets for Indian floricultural goods. Major international markets for India include Japan, The Netherlands, France, United Kingdom, and Singapore.

Table 9. Exports of Flowers from India (2016)

Sl No.	Country	Qty (in MT)	Value (Million)
1	U S A	3,765	992
2	U K	2,473	688
3	Germany	2,444	625
4	Netherland	1,811	580
5	U Arab Emts	1,441	345
6	Canada	749	179
7	Singapore	1,314	161
8	Italy	555	161
9	Japan	366	148

Comment [WU30]: Give latest figure.

10	Australia	285	138
11	China P Rp	495	127
12	Malaysia	508	118
13	Poland	329	90
14	Saudi Arab	529	75
15	Spain	186	66
Total		17,250	4493

Thailand, The Netherlands, the United Kingdom, Israel, and the United Arab Emirates are the top five countries from which India buys flowers. In 2014–15, the overall import value rose to 1134 million rupees (Table 10).

Table 10. Import of Flowers to India (value in million Rs)

Country	2011-12	2012-13	2013-14	2014-15
Thailand	113	218	382	456
Netherlands	302	332	371	329
China, People's Republic	63	93	82	100
Italy	11	18	32	55
United Arab Emirates	45	39	31	13
United States of America	13	17	30	22
Spain	9.7	12	29	22
United Kingdom	20	19	28	16
Israel	19	29	20	19
South Africa	2	4.7	17	5
Others	87	75	100	96
Total	686	857	1122	1134

Comment [WU31]:

Comment [WU32]: Check give latest available information.

Several Agricultural Export Zones may be found in several Indian states. There are flower exporting zones in four states: Karnataka, Tamil Nadu, and Maharashtra (Table 11).

Table 11. Agri- Export Zone of India (Flower exporting zone)

SI No	State	Districts / Area
1	Karnataka	Bangalore (Urban), Bangalore (Rural), Kolar, Tumkur, Kodagu and Belgaum
2	Uttarkand	Dehradun, Pantnagar, Udham Singh Nagar, Nainital and Uttarkashi
3	Maharashtra	Nasik, Sangli, Sholapur, Satara, Ahmednagar
4	Tamil Nadu	Dharmapuri

Comment [WU33]: Check for AEZ for flowers its not four some more added .

Table 12. Export of Floricultural Products from India (Rupees in Million)

Item	1991-92	1992-93	1993-94	1994-95	1995-96
Cut Flower Fresh	3.99	10.90	9.96	29.98	100.33
Dried Flowers	64.35	74.31	109.21	195.78	364.56
Live Plants	40.15	30.56	30.52	60.43	81.48
Dried Plants	23.99	25.45	23.72	10.35	35.83
Bulbs, Tubers etc.	12.06	7.83	14.95	11.83	19.21
Total	144.54	149.05	188.36	308.37	601.41

Comment [WU34]: Correct and mention the latest data.

Table 13. Corporate Houses of Floriculture in India:

Name	Location	Name	Location
Sanvi International	Raigad, Maharashtra	Kumar Florist (Joint venture)	Pune
Oikos Green Gold Pvt.Ltd.	Dombivli, Maharashtra	Florance Flora	Bengaluru
MGB Exim Enterprises	Chennai	Shrivardhan Bio-Tech	Maharashtra
Advanta India Limited	Hyderabad	Rise n' Shine	Maharashtra
Samartha Green Tech	Pune	Sheel Biotech Limited	New Delhi
Floret Aroma	Bhopal	Ishved Biotech	Maharashtra
Green World Nursery	Rajahmundry	Calcutta Tissue Culture Products Pvt Ltd.	Kolkata
Sanjay Nursery	Pune	North Bengal Floritech	Siliguri, West Bengal
AG Biotech	Hyderabad	Biswasundari Florist	Bengaluru
Fairview Nursery	Kalingpong	Green Valey Landscape	Bengaluru
Soma Enterprise	West Bengal	Karuturi Global Ltd.	Bengaluru

6. MAJOR FLOWER MARKETS IN INDIA

The major flower markets in India are Chalai Market in Trivandrum (Kerala), Crawford Market, Mumbai, Dadar Market in Mumbai, Deccan Flower Market (Bangalore), Flower Market in Delhi, Flower Market in Lucknow (UP), Flower Market in Madurai (TN), Ghazipur Flower market (Delhi), Gultekri Market in Pune, Himayat Nagar Flower Market (Hyderabad), Indore Flower Market (Indore), Jamalpur Flower Market (Ahmedabad), Jambagh Flower Market (Hyderabad), Jorhat Flower Market (Assam), K. R. Market (Bangalore), Koyambedu Flower Market (Chennai), Lalbagh Flower Market (Bangalore), Madurai Flower Market (Tamil Nadu), Malikghat bazaar (Kolkata), New Market Flower Market (Kolkata), Ooty Flower Market (Tamil Nadu) and Pushpa Mandi (Bengaluru) etc.

7. ONLINE FLOWER SELLING PORTALS IN INDIA

www.Flowersura.com, www.Indiamart.com, Ferns N Petals (www.fnp.com), FlowerAura (www.floweraura.com), MyFlowerTree (www.myflowertree.com), BookMyFlowers (www.bookmyflowers.com), Flowerzncakez (www.flowerzncakez.com), BloomsVilla (www.bloomsvilla.com), Arena Flowers (www.arenaflowers.co.in), Flaberry (www.flaberry.com), Indian Gifts Portal (www.igp.com), OyeGifts (www.oyegifts.com), Floraindia (www.floraindia.com), Pickupflowers (www.pickupflowers.com), IndiaFlowerMall (www.indiaflowermall.com) etc.

Farmers have been forming groups to profit without middlemen's meddling in order to address various issues with the selling of floricultural goods. Some of the major associations are viz. Horticulture and Floriculture Association (Belgaum), Surat Region Flower Grower Association, South India Floriculture Association (SIFA), Maharashtra Flower Grower Association, Gujarat Floriculture Association. Around 5000 acres of land are used for protected flower farming, according to Chawla *et al* (2016) [13]. The main flowers grown in polyhouses are roses, gerbera daisies, carnations, orchids, and lilies. Gujarat, Maharashtra, Uttarakhand, and Karnataka are important states. In net houses, anthurium and orchids are also grown in Sikkim, Arunachal Pradesh, Goa, and Kerala. High-value flower crops, such as protea, Asiatic ginger lily, heliconia, bird of paradise, orchids, etc., are currently grown in a relatively narrower

region, mostly in the southern states of our nation. In Haldighati (Rajasthan), some areas of Kanaouj (UP), and Himalchal Pradesh, Rosa damsцена is only grown for the production of essential oils, rose water, attar, gulkand, etc. 10% of the whole worldwide dried flower market is accounted for by India. The United States, Israel, Hong Kong, Japan, and Singapore import the dried flowers. The centres for dried flower production are Kolkata and Tutikorin in Tamil Nadu. Some of the top exporters include Ramesh Flowers Pvt. Ltd. in Tutikorin and Natural Products Export Corporation Ltd. Lotus pods, camellia, dahlia, bell, cups, marigolds, jute flowers, wood roses, wild lilies, paper flowers, and other dried ornaments are among the most popular exports from India.

8. GOVERNMENT SCHEMES FOR DEVELOPMENT OF FLORICULTURE INDUSTRY IN INDIA

Govt. of India runs a numbers of schemes for nourishment of floriculture sector in India. Different agencies also give funding for this purpose. Some of the important schemes are National Horticulture Mission (NHM), Technology Mission for Integrated Development of Horticulture (MIDH), Rashtriya Krishi Vikas Yojana (RKVY), Pradhan Mantri Krishi Sinchai Yojana (PMKSY), National Agricultural Market (e-NAM), Export Promotion Schemes, National Mission on Medicinal Plants (NMMP), Technology Mission for Integrated Development of Horticulture in North-Eastern States (TMNE), Subsidies for Polyhouse Cultivation where the government provides subsidies for the construction of polyhouses, Pradhan Mantri Fasal Bima Yojana (PMFBY), Agricultural and Processed Food Products Export Development Authority (APEDA under the Ministry of Commerce and Industry, provides financial assistance and support for the development of infrastructure related to the export of floriculture products. It offers various schemes to enhance the quality and market competitiveness of Indian floriculture products.) etc.

9. FUTURE POTENTIAL OF FLORICULTURE IN INDIA

The main advantages of floriculture in India are a wide range of agro-climatic conditions, affordable labour, and an abundance of agricultural land. Despite having a very small percentage of the global flower market, India offers more opportunities due to its enormous diversity. The demand for flowers is growing both domestically and internationally, which puts countries in intense competition. India presently leads the world in terms of output area for floriculture thanks to decades of steadily increasing production and commerce. India's position in the global floriculture industry is quite little because of the extremely poor yield of floricultural goods. If the right steps are made to promote the floriculture industry, India might make a significant amount of foreign profit, which would lead to the creation of numerous jobs. The Indian government has launched a number of projects, including the National Horticulture Mission, the National Horticulture Board, and the Horticulture Mission for North East & Himalayan States, to grow the horticulture and floriculture industries. With the right strategy and technological use, this industry will improve, and India may end up becoming a major producer and exporter of floricultural goods globally.

COMPETING INTERESTS DISCLAIMER:

Authors have declared that they have no known competing financial interests OR non-financial interests OR personal relationships that could have appeared to influence the work reported in this paper.

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Comment [WU35]: Add more recent reference related to global trade in floriculture as per the title of review.