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Paradigm of emerging floriculture and landscape industry for elegancy

Floriculture has made appreciable growth in the last three decades as commercial venture. Floriculture production in India covers 285,000 hectares with a production of 2,284,000 tonnes loose flowers and 947,000 tonnes cut flowers every year (2023-24). There is transformation in business to landscape design, contracting and maintenance services, wholesale and retail sales, development of parks and leisure places, gardens, greenhouses including various greenhouse inputs besides providing technical advices. Our country has exported 19,677.89 MT of floriculture products worth ₹ 717.83 Crores/ 86.63 Million USD in 2023-24 to the world. The USA, the Netherlands, United Arab Emirates, UK, Canada and Malaysia were major importing countries of Indian floriculture produce. New distribution structure with the aid of IT is likely to be in place, which would be emphasizing a hitech production system, virtual market, branding, cataloguing and quality assurance.

FLORICULTURE and landscape have become a part of modern lifestyle and is being utilized in floral decorations, floral craft, interior-scaping and commercial premises. Floriculture (includes cut flowers, loose flowers, bedding plants, potted plants, hedges, value added products etc.) has made appreciable growth in the last three decades as commercial venture. Now the use of floricultural produce is no longer confined to religious purposes alone. Lifestyle floriculture has now emerged as business activity involving production of ornamental plants, cut flowers, turf, foliage and delivers a range of services. There is transformation in business to landscape design, contracting and maintenance services, wholesale and retail sales, development of parks and leisure places, gardens, greenhouses including various greenhouse inputs besides providing technical advices.

Flowers are lifeline

Development of ornamental horticulture has provided not only opportunities for floriculture farming but also for improving livelihood compared to other crops. The development in this sector also provides very good business opportunities in other allied sectors like specialized transport services and production of supply of allied products, nursery bags, pots, potting media, tools, plant protection and other equipments etc. This has happened due to the vision of policy planners who were involved with various stakeholders in floriculture sector and provided the required direction that has resulted in appropriate growth in floriculture.

Status of elegant floriculture

Global status

The Floricultural crops consist of bedding plants, houseplants, house-flowers, flowering gardens, pot plants, cut cultivated greens, and cut flowers. Generally, flowers are used for decoration, aesthetics, and to exchange greetings. Flowers are connected with prosperity and well-being, resulting in benefitting the floriculture market across the globe. Globally, more than 145 countries are involved in floriculture industry and as per newly released data by Future Market Insights (FMI), the Floriculture market is estimated at USD 57.5 Billion in 2024 and is projected to reach USD ~109.1 billion by 2034. The world floriculture production is growing at a rate of 10% per year. Among top fifteen importing countries, Singapore experienced highest significant positive growth rate (14.18%) with 1% level in case of export quantity. Almost 45 to 50 countries are active in the Floriculture production on a large scale. In terms of production value, Thailand, the Netherlands, USA, UK and China are in the leading spots. The United States, Australia, Italy, the Netherlands countries have negative and significant growth rate. According to The International Association of Horticultural Producers, 702,383 ha area was under flower production in different countries of the world, of which, the total area in Europe was 48,705 ha, 21,067 ha North America, 523,829 ha Asia, 4,026 the Middle East, 7,604 ha Africa, 21,067 North America and 97,152 ha Central and South America. According to Indian Horticulture Database, India occupied a floriculture area of 285,000 ha, which is 35% of the global area during 2023-24. The global floriculture industry is experiencing rapid changes due to globalization and its effect on financial development in the different regions of the world. At the same time, competition is increasing worldwide. The Netherlands, USA, Columbia, Japan and Italy are well known as traditional growers of flowers. Some Asian countries like India, China, Bangladesh, Thailand, Vietnam, etc., are also steadily improving horticultural production. Also in Latin America and Africa, production is increasing very rapidly. Major flower consuming are countriesd in the world are concentrated in the Western Europe and North America. Germany, USA, UK, the Netherlands, France and Switzerland together consume around 80% of the total flower production. Of the world's ten largest domestic markets for cut flowers, six are in Europe, namely Germany, the UK, France, Italy, the

Pitcher Plant

Netherlands and Spain. Other important markets are the US and Japan, accounting for around 20% each. Recently, Russia and the Middle East have also become important markets demonstrating rapid market growth. World floriculture trade is mostly depending on the trade of cut flowers and buds, cut foliage, potted plants and bedding plants. Main cut flowers in world trade are rose, chrysanthemum, carnation, gerbera, and lily. The Netherlands is the world leader in the worldwide trade of cut flowers and bud export.

Indian status

As per National Horticulture Database, during 2023-24, the area under floriculture production in India was 285,000 hectares with a production of 2,284,000 tonnes loose flowers and 947,000 tonnes cut flowers (*Source*: Ministry of Agriculture and Farmers' Welfare, 2023-24). Floriculture is now commercially practised in several states with Tamil Nadu (21%), Karnataka (16%), Madhya Pradesh (14%) and West Bengal (12%), having gone ahead of other producing states like Mizoram, Gujarat, Andhra Pradesh, Odisha, Jharkhand, Haryana, Assam and Chhattisgarh. Indian floriculture industry comprises of flowers such as rose, tuberose, gladiolus, anthurium, carnations, and marigold etc. Cultivation is undertaken in open farm conditions as well as state-of-the-art polyhouses and greenhouses. Jammu and Kashmir could play a vital role in this field. Floricultural exports from India comprises fresh cut flowers to Europe, Japan, Australia, Middle East & USA; loose flowers to the Gulf; cut foliage to Europe; dry flowers to USA, Europe, Japan, Australia, Far East & Russia; and potted plants limited to very few countries. Dry flower and ornamentals have great export and potentiality as nearly 70% of total export of floricultural commodities from India consists of dried products.

Traditional flowers: Total 22.8 lakh tonnes of flowers which includes both loose and cut flowers are produced every year (2023-24). Growing traditional loose flowers

for worship and decorations is the mainstay of Indian Floriculture, which occupies about 2.4 lakh ha area (2023-24) with a production of 22.8 lakh metric tonnes. The flowers are grown in the open field and are marketed through highly unorganized marketing channels. The cut flowers produced during 2023-24 are 9.47 lakh metric tonnes. The area under floricultural crops is hardly 0.01% of the total area available for horticulture with a share of 0.8% in the overall production of horticultural crops.

Cut flowers under protected conditions: India produces about 9.47 lakh tonnes cut flowers (2023-24) for domestic and export markets every year. The cut flower production centers are located primarily in the southern and western part of India owing to the favourable climatic conditions. States like Maharashtra, Karnataka, Andhra Pradesh, Haryana, Tamil Nadu, Rajasthan, West Bengal have emerged as major flower producing states. North Eastern states and other Himalayan states have become major hubs for growing quality cut flowers in the recent times. The Anthuriums from Mizoram, the carnations from Himachal Pradesh, Orchids from Sikkim, gerbera from Uttarakhand made a significant impact in recent times.

With the declaration of floriculture as an 'extreme focus area' by the Ministry of Commerce and Industry, Government of India, floriculture sector has acquired a special status. India produces a wide variety of floricultural products, which *inter alia* include flowers and foliage, both fresh flowers and dried, like roses, carnations, chrysanthemums and orchids. With world's fastest growing retail market, second largest consumer base and unlimited opportunities for growth, Indian Floriculture can become a force to reckon with in the years to come to make recognize India as a 'Flower Power'. This is part of a New National Vision for Floriculture, the brainchild of former President Dr A.P.J. Abdul Kalam.

Trade opportunities in floriculture: Currently, flower trade has attracted the largest demand from an estimated 300 million middle-class flower-loving people with consumption in the cities and major towns at 40% per annum. Flower retail shops have mushroomed all over the place from major metros to market shops and flower boutiques. Further, super market/ hypermarket retail chains have fueled the growth in the consumption. Cashing in on this trend, the Minister of State for Commerce also feels that floriculture is all about creating new employment opportunities in far flung areas; rather than talking about Dollars, the focus should be on its capacity to generate a million jobs. Six Agri Export Zones on floriculture have been set up in Sikkim, Tamil Nadu, Uttarakhand, Karnataka and Maharashtra. The APEDA has also taken a number of measures to facilitate floriculture exports. Some key Indian airports like New Delhi, Mumbai, Hyderabad, Bengaluru, Chennai, Thiruvananthapuram and Cochin now have cold storage and cargo handling facilities. More airports will have these facilities in the future. Among other things, flower auction centres have come up in Bengaluru, Mumbai, Noida (near Delhi), and Kolkata. These are readymade market facilities for

Growing aster for cut flowers

trading and price discovery for a variety of flowers, both for export and domestic markets.

The increasing demand projected for both cut flowers and potted plants in Western countries will result in the production outside the traditional area, due to the pressure of escalating cost and environmental regulation. Asian countries would gain from the situation and expand further by increasing the production of existing products as well as expanding the produce range. However, post-harvest management and meeting the import standard would pose a challenge as consuming countries would make the strict regulations to safeguard the interests of local growers. In the context of development, growers would be interested to know the types of cut flowers or potted plants to meet the demand for different occasions. The latest data available from the Aalsmeer Flower Auction Centre indicates that rose, tulip and chrysanthemum rank top three positions among cut flowers. Similarly, *Kalanchoe*, *Hedera* and *Ficus* rank high among pot plants. Germany, France and UK remain top consumers of floricultural products in the world. Among species, colour of flowers is important. Since varieties in demand today may not be important tomorrow, it would require necessary change in cultivars as per the needs.

Export potential of floricultural products: India is endowed with proximity to market in Japan, Russia, South-East Asia and Middle-East countries. The Government allows subsidy on air freight for export of cut flowers and tissue-cultured plants. Freight rates are subsidized for export to Europe and West Asia, South East Asia. Import duties have been reduced on cut flowers, flower seeds and tissue-cultured plants. Floricultural exports from India comprises fresh cut flowers (to Europe, Japan, Australia, Middle East and USA), loose flowers (for expatriate Indian in the Gulf), cut foliage (to Europe), dry flowers (to USA, Europe, Japan, Australia, far East and Russia) and potted plants (limited to very few countries). Out of three components, dry flowers contribute a major share to the total export. The country made significant strides in the production of cut flowers which were either exported or consumed in the domestic markets. The floricultural exports registered a phenomenal growth during the last decade.

The country has exported 19677.89 MT of floriculture products to the world worth ₹ 717.83 Crores/ 86.63 USD Millions in 2023-24. USA, the Netherlands, United Arab Emirates, UK, Canada and Malaysia were major importing countries of Indian floriculture during the same period. If India has to achieve the ambitious export target of ₹1,000 crore per annum over the next 3 years, a paradigm shift is required. The key issues that need to be addressed in the Indian context are economics of scale, product range/latest varieties, year-round exports, quality control and certification, cold chain management. The APEDA has been addressing these issues through various forums on a concerted basis given its mandate to promote floricultural exports from India. The biggest importers of Indian flowers are United States of America (14,692.43 lacs), Netherland (7,789.14 lacs), United Kingdom (4,470.63 lacs), Germany (3,938.55 lacs), United Arab Emirates (3,434.08 lacs), Canada (2,341.81 lacs), Australia (1,607.44 lacs), Italy (1,578.90 lacs), Japan (1,574.58 lacs) and Malaysia (1,539.92 lacs). It indicates the demand

Pink Ginger

for the Indian floriculture industry in the world market.

Indian exports mostly target the major floriculturally important events like New Year, Merry Christmas, Mother's day, Valentine day and many other now. The major factors that limit the production are the unfavourable weather conditions during winter in major production centres in the Northern Hemisphere. Therefore, markets are open to produce that comes from more favourable climates from the Southern Hemisphere. India, therefore, finds itself competing with other equally favourable countries like Kenya, Ecuador, Morocco etc. during such events.

The value of exports of commodity group ('Cut flowers and flower buds of a kind suitable for bouquets or for ornamental purposes, fresh, dried, dyed, bleached, impregnated or otherwise prepared') from India totaled $ 23 million in 2023. Sales of this commodity group from India went up by 7.71% compared to 2022. Exports of commodity group amounted to 0.005% of total exports from India (cumulative merchandise exports from India totalled $ 431 billion in 2023). The share of commodity group in total exports from India decreased compared to 2022 (it was 0.004% in 2022 and cumulative exports from India were equal to $ 452 billion). Exports of this commodity group amounted to 28% of total sales of group from India in 2023 (the value of exports of commodity group from India amounted to $84 million in 2023). The share of exports of this commodity group in sales of commodity group from India increased by 5.01% compared to 2022 (it was 23% in 2022, and exports of commodity group from India were $95 million).

Rangoon creeper

Top export destinations of commodity group from India in 2023 are USA with a share of 16.7% (4 million US$), Malaysia with a share of 15% (3.58 million US$), United Arab Emirates with a share of 12.1% (2.91 million US$), Singapore with a share of 11% (2.64 million US$), United Kingdom with a share of 9.89% (2.36 million US$), the Netherlands with a share of 5.29% (1.26 million US$), Nepal with a share of 3.54% (844 thousand US$), Australia with a share of 3.42% (817 thousand US$), New Zealand with a share of 2.65% (634 thousand US$), and Kuwait with a share of 2.55% (609 thousand US$).

Import of cut flowers: India imports a wide range of floricultural produce from different parts of the world. India's major imports are from the Netherlands followed by China, Thailand and USA. The imports to India peaked during 2005-06 with an overall import of ₹ 1,796.33 lakh, followed by ₹ 1,137.80 lakh during 2004-05 and now import is 4,768.81 MT valuing ₹11,440 lakh during 2015-16 and ₹ 38.25 crores from Thailand, the Netherlands and People's Republic of China during 2022.

The value of imports of commodity group ('Cut flowers and flower buds of a kind suitable for bouquets or for ornamental purposes, fresh, dried, dyed, bleached, impregnated or otherwise prepared') to India totaled $ 1.86 million in 2023. Sales of commodity group to India went up by 15.2% compared to 2022 while the imports of commodity group went up by $ 246,000 (the value of imports of commodity group to India was equal to $1.61 million in 2022).

Imports of commodity group reached 5.45% of total imports of commodity group to India in 2023 (imports of commodity group to India totaled $34 million in 2023). The share of purchases of commodity group in total imports of commodity group to India increased by 1.01% compared to 2022 (it was 4.44% in 2022, and imports of commodity group to India accounted for $36 million). Imports structure of commdity group to India in 2023 represented 2.43% (45 thousand US$).

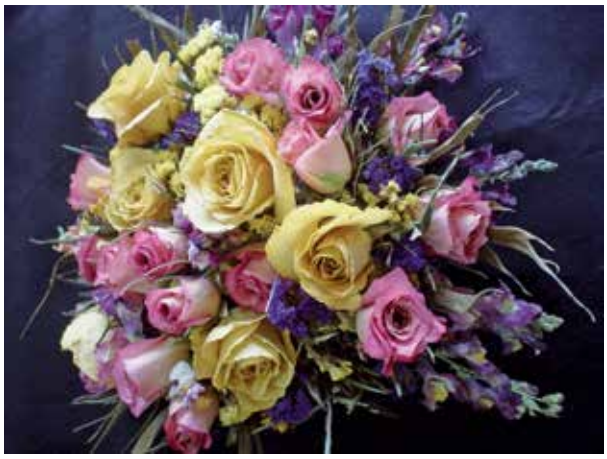
Current policy for floriculture export: The Govt. of India liberalized the economy during late 80's. During the same time, the National Seed Policy was also liberalized paving the way for the import of planting material of elite, exotic varieties from different parts of the world. The liberalized economy also favoured Foreign Direct Investment (FDI) in some of floriculture companies and some of the infrastructure and input supply industries. This has helped in the advent of state of the art greenhouse cultivation of flower crops in our country during early 90's. A large number of public issues were floated to establish 100% EOUs in different parts of the country particularly in Karnataka, Maharashtra, Tamil Nadu, Gujarat *etc.* The euphoria thus generated could not be sustained for longer since the infrastructure and logistics required for handling such volumes was not available at that juncture. However, the scenario changed in due course of time. With the proactive role played by the public and private sector organizations, infrastructure facilities and logistic network was put in place to support the floriculture sector. Establishment of cold storage facilities at airports, large fleet of reefer vans for effective transportation, commissioning of state of the art international flower auction centers at Bengaluru and Noida are some of the recent developments in this direction.

Paradigm of smart floriculture

Hi-tech floriculture

The cut flowers, which are being exported from India, are from these hi-tech floricultural units. Protected cultivation, although is in limited area (5% of total flower crop area), its contribution to total floricultural exports is significant. At present, there are over 300 export-oriented floricultural units (EOUs) in operation, covering more than 1750 ha area. More than 50% units are in three states namely Karnataka, Andhra Pradesh and Tamil Nadu.

These units are growing mostly roses, but can be diversified into orchids, Anthurium, gladiolus and tuberose as the demand for tropical flowers is increasing worldwide. India, has several advantages and great potential to increase the acreage under intensive production and ultimately to increase the floricultural exports provided the units should be opened in ideal locations with sound technological back-up. Indigenous technology for greenhouse, irrigation, fertigation and crop management including pest management is available for most of the flower crops presently grown in the country from ICAR/CSIR and SAU research establishments.



Dried rose flowers

Dry flowers

Dry flowers constitute more than two-thirds of total floricultural exports. For making dry flowers, flowers and plant parts can be collected from wild sources of some flower crops like Dahlias, marigold, jute flowers, wood roses, wild lilies, helichrysum, lotus pods, etc. Some flowers that are air-dried and used include Dahlias (*Dahlia hortensis*), poppy seed heads (*Papavere somniferum*), roses (*Rosa*), Delphinium, larkspur (*Consolida ambigua*), lavender (*Lavandula augustifolia*), African marigold (*Tagetes erecta*), strawflower (*Helichrysum bracteatum*), cornflower (*Centaurea cyanus*), statice (*Limonium sinuatum*), globe amaranth (*Gomphrena globosa*), lotus pods etc. India exports dry flowers worth ₹ 322 crores every year. Dry flowers constitute nearly 15% of the global floriculture business and form the major share in Indian floricultural exports as well. At present, the industry is not well-organised and depends on plant material available in forests. Moreover, no systematic growing of specialized flowers exists anywhere in the country. The demand for dry flowers is increasing at an impressive rate of 8-10% and therefore there is a great scope for the Indian entrepreneurs. Technology for the dry flower making and processing is available in the country and needs to be disseminated.

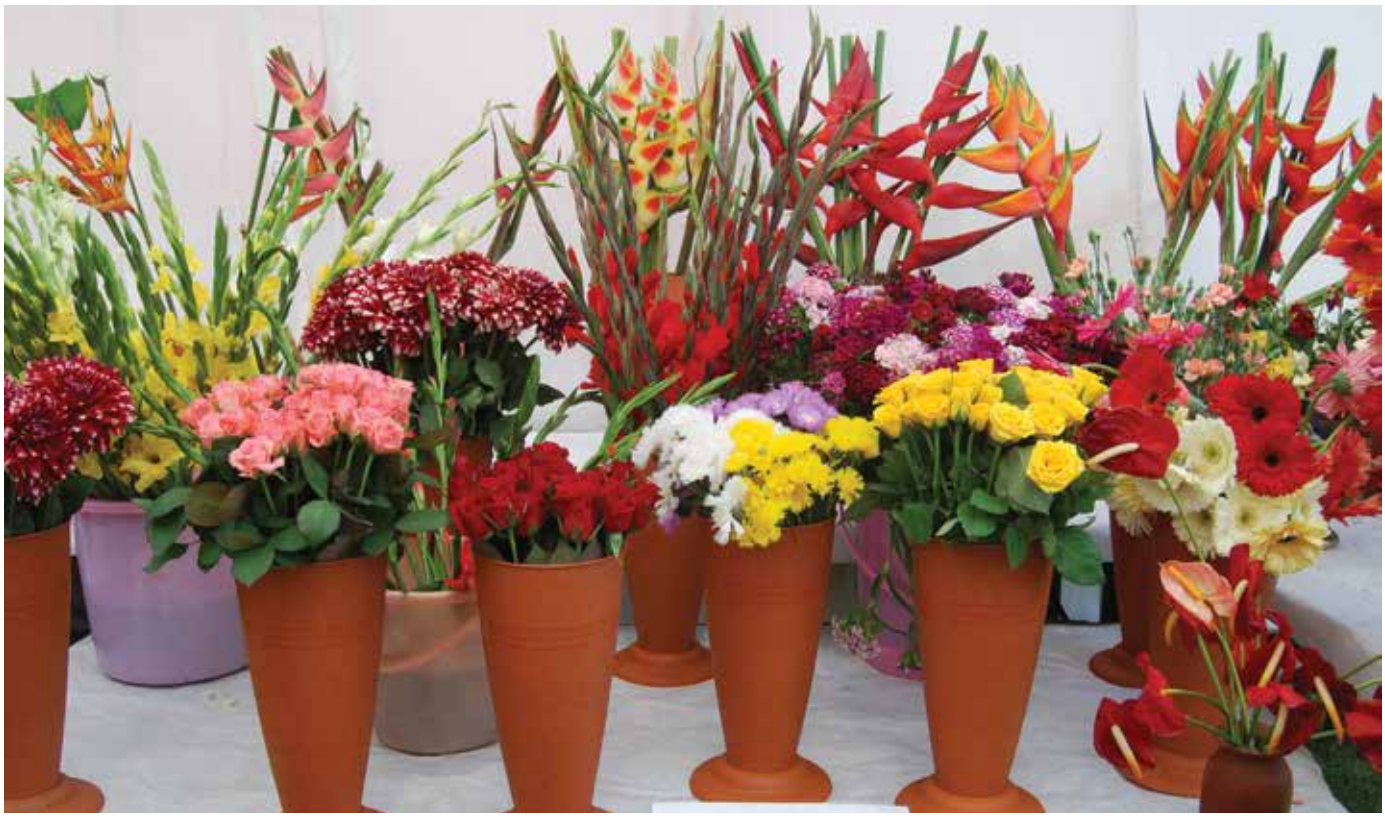
Flower seed production

Seed production of seasonal flower crops is a lucrative business and is practiced in considerable area in Punjab and Haryana. It offers higher returns per unit area. Of late, demand is increasing in domestic market also. Research work is required to develop high-yielding varieties including F_1 hybrids, agro-techniques for producing uniform seed with higher certification standards. Production of seeds of open pollinated varieties of annual flowers gained momentum in recent times to produce seeds worth ₹ 6-10 crores from more than 600 hectares area (mainly in Punjab and Karnataka). Global flower seed market size valued at 2.47 billion USD in 2023 is projected to grow to 3.96 by 2032. According to Volza's India Export data, India exported 1,846 shipments of flower seed from March 2023 to February 2024 (TTM). These exports were made by 95 Indian exporters to 150 buyers. Realizing the potential of the seed production in ornamental crops, ICAR initiated a Network Project on F_1 Hybrids in floricultural crops at IIHR, Bengaluru as the coordinating center with three sub-centers at Dr. YSPU H&F, Solan; PAU, Ludhiana and MPKV, Pune. Promising pure lines in marigold, antirrhinum, pansy, petunia were developed from a large collection of exotic and Indian germplasm. Promising male sterile lines are identified in marigold. The technology generated forms the base for the large scale development of new varieties/ hybrids in annual flower crops.

Quality planting material production

With the growth of the production and trade of planting material for ornamental crops, need for quality assurance was also realized. It was observed that nursery production facilities expanded in the country in view of the good profitability, most organizations in their quest for generating higher profits, focused more on the quantities/volumes and in the bargain, attention to quality was neglected. However, soon the appreciation for the value of quality seed and planting material was realized and quality assurance of the material started receiving attention. Diagnostic tools for disease identification and management have been developed and are in use. Disease free virus indexed planting materials are available in most crops. In tulips, bulbs are used for propagation but many viruses (TRV) affect the quality flower production. At present, 30 commercial tissue culture units are operational with annual capacity of 0.5 to 15 million plants.

Ornamental crops have been produced and used in the country for ages. Besides the aesthetic value, their commercial importance is being appreciated now. A large number of varieties, particularly in rose, gladiolus, chrysanthemum, marigold, aster, hibiscus, marigold, tuberose, jasmine etc. have been evolved with their region-specific package of practices standardized. These varieties have contributed to broadening the genetic base of the material available for use in gardens and parks, as well as, commercial production farms. Protocols for the multiplication of the planting material for all these crops have been developed, enabling expansion of their production base. Of particular significance is the wide scale generation of planting material through micro-propagation in both public and private sector facilities. Licensed propagation and distribution rights awarded by several leading names in global floriculture industry, particularly for rose, carnation, gerbera, anthurium, orchids, lilium, gladiolus, calla lily *etc.* has added to the varieties in commercial production in the country. Quality planting material is constantly provided by the ICAR research institutes for the mandated crops. IIHR, Bengaluru



Speciality cut flowers on display

supplies china aster, marigold, tuberose, gladiolus, chrysanthemum, heliconia, red ginger, crossandra etc. Similarly, IARI, New Delhi provides planting material of rose, chrysanthemum, marigold, tuberose, gladiolus *etc.*

Nursery industry

Lack of quality planting material is the major hindrance for not realizing the full potential of floriculture in India. Planting material of various kinds (seedlings, budded plants, rooted cuttings, bulbs, tubers, corms, annual seed, *etc.*) is required for commercial flower production, pot plant production (and their rentals) for adding to home garden and for landscaping (corporate landscaping, bioaesthetic planting, *etc.*).

Pot pourri

Pot pourri is a mixture of dried, sweet-scented plant parts including flowers, leaves, seeds, stems and roots. The basis of a pot pourri is the aromatic oils found within the plant. A significant component of dry flower export comprises of pot pourries. In the recent past, floriculture has been considered as a viable option of diversification in agriculture. But now within floriculture itself, there are a number of options a flower grower or a floriculturist can take up. ICAR has recently initiated a Value Chain Management in flower crops through NAIP at TNAU in PPP mode to develop a complete end to end package for making value added flowers including dry flowers and pot pourries.

Essential oils

Essential oils and perfumery from natural sources are in great demand. In India, flower crops grown for essential oil production are limited and include mainly rose, jasmine, tuberose, etc. *Rosa damascene* is exclusively cultivated for e-xtraction of essential oils, rose water, attar, gulkand, etc. in certain pockets of Rajasthan and Uttar Pradesh. Research should be focused on development of varieties with higher oil content and standardizing distillation methods for higher oil recovery. Further identification of more crops and standardization of production technology needs to be included in the research agenda. Promotion of this sector encourages ancillary industries like steam distillation and use of indigenous technical knowledge (ITK) for making value-added products.

Natural dyes

Marigold pigments are widely used in the poultry industry to enhance the colour of the meat and yolk of the eggs in addition to use in food and textile industry. So far, isolation of xanthophylls from marigold has been standardized. More crops can be identified and procedures can be standardized for full exploitation. Technology development in all the areas mentioned above not only improves situation of respective sub-sector of floriculture, but these become important avenues for diversification of floriculture, sources of income generation and means of employment to the youth.

Strategies for growth

Rapid technological agri-business, international economic integration, saturated markets and free market mechanism have provided opportunity, but also the challenges. Retailing on markets will be more complex. Service, quality and reliability would be an essential factor for securing position in international market. Producers have to organize the production so as to supply the necessary quantities according to the required quality

standards. Any participants in the chain, which do not contribute to higher added value, will disappear. The advantages of large-scale market could be found for efficient purchasing process and also in terms of logistics and use of information technologies. Accordingly, our efforts have to be directed to harness the potential through strategic promotion of market. Strategies could be for policy support, infrastructural development, professionalism in market management, networking of markets and quality assurance.

All these developments provide opportunity for production and marketing. This would need strategic marketing approach having backward and forward linkages coupled with horizontal and vertical integration. By providing sufficient attention and support, attaining the goal of reliable production of high-quality product consistent in quantities could be attained. Consequently, Asian flower sector would soon become a major player in the region as well as in European flower market. Moreover, given the rapidly increasing rate of spending among Asian consumers for cut flowers, it is also reasonable to expect that the Asian flower industry will soon surpass consumption rates for cut flowers compared to other regions.

Cooperation and commitment, in terms of education, research, funding and communication in Asia would be a driving force to become a leader of commercial floriculture worldwide, in years to come. The strategies have been chalked out to meet the challenges and to make floriculture a most viable activity in Asia to ensure employment with enhanced farm income. The challenges are to capture emerging trend in marketing through innovation and skilled professional management. Therefore, strategies to promote effective marketing should include, quality assurance, transportation, hub development for effective delivery, institutional support for information and training, specialty production, reducing cost and widening products, developing domestic market, promoting indigenous plants and flowers, developing professional skill and knowledge management, promoting uses of flowers and providing policy support product and delivery. Moreover, there is a need for quality products and delivery system, and to develop quality certification system, as developed in Holland, which ensures the quality for the brand.

Government efforts for promotion of floriculture

Government of India has identified floriculture as a sunrise industry and accorded it 100% export-oriented status. Owing to steady increase in demand of flower, floriculture has become one of the important Commercial trades in Agriculture. Hence commercial floriculture has emerged as hi-tech activity-taking place under controlled climatic conditions inside greenhouse. Floriculture in India, is being viewed as a high growth Industry. Commercial floriculture is becoming important from the export angle. The liberalization of industrial and trade policies paved the way for development of export-oriented production of cut flowers. The new seed policy had already made it feasible to import planting material of international varieties. It has been found that commercial floriculture has higher potential per unit area than most of the field crops and is therefore a lucrative business. Indian floriculture industry has been shifting from traditional flowers to cut flowers for export purposes. The liberalized economy has given an impetus to the Indian entrepreneurs for establishing export oriented floriculture units under controlled climatic conditions.

The Government of India has initiated many developmental programmes mainly through the schemes of Mission for Integrated Development of Horticulture (National Horticulture Mission, Horticulture Mission for North East & Himalayan States and National Horticulture Board) and Ministry of Commerce (APEDA). National Bank for Agricultural Rural Development (NABARD) is providing financial assistance to the farmers to adopt protected cultivation and precision farming. Research activities on floriculture are being carried out at several research institutions under the Indian Council of Agricultural Research (ICAR), Council of Scientific and Industrial Research (CSIR) and in the horticulture departments of state agriculture universities and under the All-India Co-ordinated Floriculture Improvement Project. To meet the demand of flower seeds, several seed companies have developed production units in major flower growing states. India Government have introduced various training programmes for farmers and entrepreneurs. The Government offers a range of concession on seeds, planting materials, various types of equipment and airfreight for export. It is anticipated that improved policies would enhance floriculture in world trade.

CONCLUSION

Floriculture has provided opportunities for improving livelihood of farmers as compared to other crops. There is tremendous scope to expand cultivation of floriculture in non-traditional areas and emphasis is needed to develop Integrated Cold Chain for flowers right from production to consumption to meet the growing needs of both domestic and international market. With increasing flower demand, production centres have expanded from traditional centres (USA, Japan, the Netherlands and Columbia) to new ones (Latin America, Africa and Asia). In Asian continent, India, China, Vietnam and Sri Lanka are moving in direction of intensive floriculture. New consumption centres are also emerging in South-east Asia, Middle-East and Eastern Europe. The scenario provides opportunity to capitalize on the strength and convert weaknesses into opportunity. However, in the consumer-driven market, quality of service and delivery system will play a significant role. Marketing is no more a meeting of buyers and sellers, but it is complex, which is driven by quantity of products and reliability of delivery. New distribution structure with the aid of IT is likely to be in place, which would emphasize hi-tech production system, virtual market, branding, cataloguing and quality assurance.

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