



**RESEARCH ARTICLE :** **Entrepreneurship development in Ladakh (J&K) under DST programme**

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**SUMMARY :** The agro-climatic condition of the Ladakh is suitable for bulb production and it is rising day by day to meet the domestic demand as well as the demand of the entrepreneurs of the state. Now floriculture is absolutely meant for commercial purpose where small and medium entrepreneurs depend on this farming activity. Ladakh region has a rich potentiality for flower farming and marketing. Floriculture is a fast emerging and highly competitive industry in the Ladakh region. With the continuous introduction of new cultivars and new crops, cultural techniques are changing and hence new products are developing. The government of Jammu and Kashmir has also made some policy for floriculture under the Department of Floriculture. Floriculture provides ample opportunity not only for farming benefit but also vast employment to the people of the Ladakh. Flowers like liliun, tulip, gladiolus, rose and marigold are some of the flowers which have a large demand over the years and now it has been meant for export purpose.

**KEY WORDS :**

Entrepreneurship, DST, bulb production, liliun, protected cultivation, Ladakh

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**BACKGROUND AND OBJECTIVES**

Floriculture has emerged as an economically viable diversification option in the Indian agribusiness and has captured the interests of many new entrepreneurs into agricultural sector in recent times. Flower cultivation has been practiced in India since times immemorial but it is only in the recent years that floriculture has blossomed into a viable business sector (Ahmed *et al.*, 2011). A growing market as a result of improvement in the general level of well being in the country and increased affluence, particularly among the middle class, has led to transformation of

the activity of flower growing into a burgeoning industry. Availability of diverse agro-climatic conditions facilitates the production of all major flowers throughout the year in some or the other part of the country. With perception on floriculture business potential rapidly changing, the corporate have increasingly forayed into the sector. In recent decades there has been increasing demand of floriculture products with increasing income. It is a souring industry in Asian countries including India with ever increasing area. India has inherited floriculture from ancient past, yet the social and economic

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aspect of flower growing was recognized later. It was only in the last two three decades that floriculture got a boost due the adoption of new economic policy during 1991 in our country with the main objective of solving foreign currency crisis and removing the stagnancy through liberal economy. Later the Union Government provided incentives for the promotion of agriculture export through the certain policies and agencies including NHB, APEDA, NABARD etc. Today the area under floriculture has increased to more than 255 thousand ha with a production of 1754 and 542 MT of loose and cut flowers (Mishra and Mishra, 2016).

The state of Jammu and Kashmir though having great potential for commercialization of floriculture and to its diversity of climate has still not received the focus commensurate with its potential. However, due to the effects of SKUAST-K and the Government of J&K, the area under floriculture in the state has increased to 0.75 thousand ha with a production of 0.42 thousand MT of loose flower and 1.82 thousand MT of cut flower (Anonymous, 2014). Jammu and Kashmir is the most colorful state in India and is located between 32°.17 and 37°.06 North latitude and 73°.26 and 80°.36 East longitude, falling in Western Himalayan region of the country. The terrain of the state is greatly dissected and has an average altitude between 500 to 3500 meter amsl with an annual rainfall of 1069 mm in subtropical Jammu, 660 mm in temperate valley and 80-90 mm in arid Ladakh region. Average temperatures also vary within the three regions of the state having 24.5, 13.3 and 5.3 °C in Jammu, Kashmir and Ladakh regions. The area and production of loose and cut flowers in the state of J&K during 2013-14 is given in Fig. 1.

The state is endowed with ample natural resources including soil, water, diversity in topography, climatic conditions, rich natural flora facilitating the cultivation of a wide range of flowers. Floriculture or flower farming as it is popularly called is a discipline of Horticulture, and is the study of growing and marketing flowers and foliage plants. Floriculture includes cultivation of flowering and ornamental plants for sales or for use as raw materials in cosmetic and perfume industry and the pharmaceutical sector.

In India, floriculture industry comprises of flower trade, production of nursery plants and potted plants, seed and bulb production, micro propagation and extraction of essential oils. India has a blooming future as far as

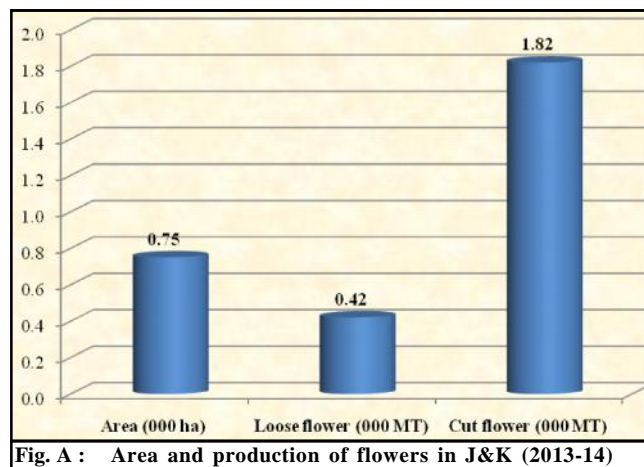


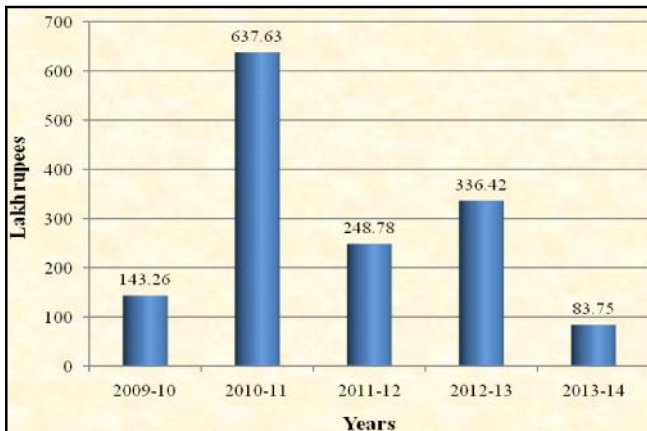
Fig. A : Area and production of flowers in J&K (2013-14)

floriculture is concerned. Enormous genetic diversity, varied agro climatic conditions, versatile human resources etc offer India a unique scope for judicious employment of existing resources and exploration of avenues yet untouched India with a population of over a billion is a big market. Domestic industry is growing at an annual growth rate of 15-20% per annum. Flower consumption in the cities and major town is reportedly growing at 40% per annum. The total business of floricultural products in India in 2005 increased from Rs 8,174 lakh to Rs 14,117 lakh in April 2009 (Sudhagar, 2013). The research will provide in-depth knowledge and opportunities in this field for the management graduate and contribute to economic development In order to encourage floriculture business both central and state government has accorded export-oriented status. In India floriculture is considered as an industrial activity comprises flower trade, production of nursery plants, potted plants, seed and bulb production, micropropagation and extraction of essential oil. Hence floriculture business is one of the profitable entrepreneurial opportunities of our country.

### Steps taken by the government to promote floriculture :

In order to meet the domestic demand of flowers in the state the government is making continuous effort for promotion of floriculture in Ladakh region. Several promotional schemes are introduced in the state for facilitating the farmers to grow more and more flower in the state. At the same time financial assistance in form of subsidy has been provided to flower farmers of the state from time to time for promotion of floriculture. Assistance provided by government under centrally

sponsored schemes to growers has propped the fledgling commercial flower production in J&K with the help of subsidies from centrally sponsored schemes like Horticulture Technology Mini Mission, RKVY etc. Department of Floriculture that was previously known as Department of Gardens and Parks entrusted with the upkeep of gardens and public recreational spaces underwent a radical revamp in 2007. Government was able to create a primary extension and development apparatus in the districts that was instrumental in kick-starting floriculture in different districts of J&K.



**Fig. B :** Availability of funds under RKVY in floriculture (Kashmir Division)

The area under commercial floriculture has witnessed a quantum jump during the last 6 years. Government has also created a significant market side logistics /infrastructure in the form of cold storage facilities and refrigerated vans at district level. 15 walk-in-cold chambers at the cost of 182.00 lakhs have been established at various district headquarters in the Kashmir Valley and a provision of 9.00 lakhs has been kept for operational cost of these Walk-in Cold rooms. This has been further augmented by the creation of state of the art auction centre at centrally located Srinagar district.

At the end of the last five year plan, Government has put in place the requisite level of investment in infrastructure and logistics that need to be further built upon and strengthened in the current financial plan. There is a need to consolidate the gains made so far by investing in critical areas to make further sustainable long term growth.

**Floriculture in Ladakh :**

Ladakh region (Kargil and Leh) is largely high



**Fig. C :** Availability of funds under Horticulture Mission for North East and Himalayan states (Kashmir Division)

altitude cold arid zone located at 2400 to 8500 meters above mean sea level with average annual rainfall and temperature of 83 mm and -4.0 to 17 °C, respectively. The soils are sandy in texture. The climate is arctic and desert type which is ideal for bulbous flower cultivation. Floriculture has emerged as an important sector for diversification of agriculture. Generally in Ladakh region the crop cultivation remains active for 7-8 month because of severe cold during the winter months. A farmer is not able to earn his livelihood throughout the year and they are resource poor and marginal; the land holdings are very small. It will not be a wise thing for these farmers to continue with the conventional agricultural practices. Cultivation of flowering crops under protected conditions will improve the economic conditions of the farmers and entrepreneurs. Keeping in view the above facts a research project entitled “Entrepreneurship development of flowering bulbous crops in Ladakh regions of J&K state” was approved by the Department of Science and Technology for implementation in the Ladakh region. This Project emphasis on entrepreneurial options and challenges of floriculture business in the Ladakh region. At the same time, the project covers the policy of the Department of Science and Technology promotion of floriculture in recent years as a revenue earning and employment device of the state.

**RESOURCES AND METHODS**

A survey was made in the project area to identify the progressive farmers for adoption of the technology regarding cultivation of flowers under protected cultivation. The beneficiaries were identified from

particular areas and imparted with training regarding flower cultivation.

Objectives of the study

The following were the objectives of the project

- Construction of low cost polyhouses
- Forming group of farmers at block level
- Crop production imparted to the identified group of farmers
- Training on flowering bulbous
- To emphasise the prospects of floriculture in Ladakh.
- To highlight the policy of the state government towards the encouragement of floriculture entrepreneurs.
- To examine various challenges of floriculture business in the Ladakh Region.

### **DST Coder Programme :**

Under this programme the farmers of different villages of the region were motivated to cultivate and produce flowers. As per the programme the farmers were provided with polyhouses and planting materials of liliun, tulip and gladiolus with free of cost. At the same time the input cost was also provided to small and marginal farmers for production of flowers. This situation attracted the prospective entrepreneurs towards floriculture business in Ladakh.

### **Entrepreneurial opportunity :**

Ladakh region has a huge potential for development of floriculture. In order to attract large number of small and medium entrepreneurs in floriculture business of the state, the government has identified different production areas for different category of flowers. The scarcity of flower production and the growing demand of the same in the state encourage the entrepreneurs to nurture the business of flower in Ladakh. Under the current project, the Department of Science and Technology, Government of India has made a budgetary provision for polyhouses in order to promote floriculture business and to meet the growing demand of flowers. This initiative will increase the flower production in the ladakh region which will boost the entrepreneurial opportunity too. This trend indicates that floriculture is flourishing in the Ladakh region which can attract the entrepreneurs for floriculture business in near future.

### **Challenges of floriculture in Ladakh :**

As there is ample opportunity for flower cultivation in the Ladakh, but its commercialization is a recent development by the SKUAST-Kashmir. Various problems which are faced by the flower growers in this area are given below:

#### *Lack of infrastructural facility :*

Despite increasing demand of flowers day by day in the Ladakh one of the major drawbacks is a requisite infrastructural facility. The scope of infrastructure like flower mandi, cold storage, facility of an auction sale, are some of the requirement which is not available in the Ladakh for development of floriculture.

#### *Poor scientific knowledge :*

The Traditional practice of plantation of the flower is one of the major problems for the farmers of the Ladakh. The farmers should be provided update scientific method of the plantation of the flower so that the flower production will increase both in quality and quantity.

#### *Post harvesting situation :*

Marketing is one of the important situations for floriculture business. At the time of harvesting, the farmers have to either depend on traditional sale or they have to depend on govt. agency to get the right price of the product. There is no formal agency either in govt. sector or in the private sector for selling of the product after harvesting.

#### *Middleman exploitation :*

This is another problem which poses a serious challenge for the entrepreneurs of the flower. Most of the farmers fall into the trap of middle man as they have no idea or knowledge regarding the demand and the right price of the flower. In such a situation the middle man gets the opportunity to exploit the genuine farmer.

## **OBSERVATIONS AND ANALYSIS**

Five low cost polyhouses were constructed as per the required specification. A survey was undertaken to identify the interested farmers for cultivation of bulbous flowers under protected conditions. During the survey an important consideration was taken into account *i.e.*, knowhow of farmers in cultivation of flowers. Five self help groups each constituting of 8-12 members from



different blocks of Kargil area were identified and selected. The production of bulbulous flowers under protected conditions in selected blocks of Kargil gave the fruitful results. As this is a new technology for cultivation of bulbulous flowers under protected conditions in Ladakh region, the cultivation operations carried right from preparation of field have been in a joint venture with farmer groups thereby the farmer groups have been well acquainted with the technologies used in the cultivation process. Nine training camps with three each in 2014, 2015 and 2016 were held during the period wherein the groups have been imparted with the knowhow for cultivation of the crop under protected conditions. Besides giving importance of the bulbulous flower production in cold arid zone of Ladakh it was also highlighted the importance of crop in fetching the good profits as Ladakh being a tourist hub. During the lectures emphasis was laid to point out the ways and means for marketing of the produce through the existing channels. An assured market for the flowers was also identified in Leh district of Ladakh wherein numerous hoteliers have thirsty demand for these flowers. Besides, the army camps in the close vicinity of project area have shown great interest to buy the flowers for decoration of their camps.



### Innovation/achievements :

The project was started with the primary aim of producing cut flowers for entrepreneurship development of the farmers particularly the women folk of the area. Under the project almost all the objectives were achieved successfully. The project covered 52 farming families which were actively involved in the project when only 5 polyhouses were distributed amongst them. By seeing good achievements of the project, most of the farmers started cultivation of these bulbulous crops under the open conditions after seeing the successful results of the project. There arose a great demand of more polyhouses but unfortunately it was not possible to allot the expenditure for it from the project budget. There was a big innovation from the project results that the bulb production per unit area exceeded much higher from the normal yield per unit area in terms of both number and size. As a normal routine an average of 10-15 bulbs are produced per plant out of which 1-2 bulbs are of matured size to be plant in the next current season. However, under the project results, 25-30 bulbs were produced per



plant with 4-5 matured bulbs to be planted during the current coming season. Thus, the results in term of bulb yield is so high and so important that the farmers earning the money from cultivation of flowers as well as bulbs could be compensated only by bulb yield and the flower part would be the extra benefit thereby would lead much better livelihood of the farmers.



Furthermore, it was also observed during the study that bulbs stored in vermicompost pits proved cost effective (less expensive) and Viability of bulbs was high as compared to normal storage in plastic trays.

### Conclusion :

There is no doubt that Ladakh has a huge potentiality for floriculture business. But till today it is in an evolutionary stage. Though agroclimatic condition is suitable for flower cultivation and there is a growing demand for flowers in the Ladakh, it is seen that neither



the farmer nor the entrepreneurs of this business can able to get the advantage of the situation. It is a highly profitable business because of higher productivity per unit of land. In comparison to other crops it gives higher profit. With such initiatives and subsidies by central and state government, floriculture could well be the next big boom after Information Technology.

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