

Government Policies for Development of Floriculture and its Impact in Sikkim: A Socio-Economic Study

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Abstract

The Government of a State takes policies as initiatives to develop socio-economic condition of its people by supporting them in doing special types of economic activities. In the state, there may be some professions practiced by its people which are unique and the government takes initiatives to encourage and flourish those professions. Floriculture is such a unique profession practiced by several ethnic communities in Sikkim. They are cultivating different kinds of flowers in a large quantity for commercial purposes that may be not possible without the assistance by the Sikkim government. This paper tries to explore how far the policies of the Sikkim Government are responsible for the growing interest among people of Sikkim in cultivation of flowers; consequently in developing floriculture as a commercial venture.

Keywords: Ethnicity, Floriculture, Biodiversity, Green House, Poly House, Flower Growers, Government Policies, Technology Mission.

1. Introduction

Sikkim is a biodiversity hotspot blessed with abundance flora and fauna. The climatic condition of Sikkim also has played an important role in blessing this Himalayan State with immense greenery and beautiful varieties of flowers. Sikkim has its own attraction for its beautifully grown varieties of flowers in almost every part of the state. The people of Sikkim are emotionally attached with the nature and as nature lovers they are fond of cultivating different kinds of ornamental plants (non-flowering plants that are kept inside house) and varieties of beautiful flowers. The fresh look of Rhododendrons, the scented pansies and premolars and the richness of wild orchids enhance the beauty of this small state of Sikkim. Nearly about 4500 species of flowering plants are found in Sikkim (Sikkim, India: Sanctuary to Horticulture Estate 2008, p.5). Therefore exports of flowers and the passion of growing flowers seem to have been alive among the people of Sikkim from the time immemorial. However, one cannot claim with authenticity the reasons behind the growing of flowers and the reasons behind the sudden interest of the people who have taken this to a commercial level because there is a dearth of literature in this area.

2. British Patronage for Floriculture in Sikkim: A Preview

Flowers hold an important role and are part of rituals or festivals among different ethnic communities of Sikkim. As culture and ritual are imbibed among the people of Sikkim, flower also plays a significant role in keeping the same intact. Flowers also hold a symbol in itself and it speaks for itself. Growing flowers was hobby which later, with the growing values of flowers must have developed as a means

to earn. John Claude White (1909) who came as the first Political Officer in the then small Himalayan Kingdom of Sikkim has written in his book titled '*Sikkim and Bhutan: Twenty-one years on the North East Frontier 1887-1908*' that Lepcha people who are said to have entered Sikkim from the east along the foot hills from the direction of Assam and Burma had the knowledge of the plants and flowers. And the climatic condition of Sikkim is also a boon for growing flowers that also must have acted as an enthusiasm for the people to gradually take interest in growing flowers at their home and gardens. J.C. White also mentioned that the first work to be done in this kingdom was building a house that was then called Residency presently known as Raj Bhawan. He had narrated beautifully about the garden surrounding the Residency in which flowers like Daffodils, Primroses, Polyanthus, Daisies, Pansies, etc. were grown in different seasons. He also mentions about importing some of the flowers from France. He was a nature lover and when he came to Sikkim he bought along with him different flowering and non-flowering plants so it can be said that probably that is how these flowers must have reached Sikkim. The growing of flowers eventually may have caught the interest of the people living in Sikkim because of the beauty that flowers could present. Later, people may have realized the commercial value of flowers when sold and this must then have led the people to pursue cultivation of flower on a commercial level. Chandra Nursery (Pradhan K.C 2008) named on Chandrabir Newar, who was honoured by the British for being a man of an example in the society, located at Rhenok is one of the oldest nurseries in Sikkim. The nursery was started by his two sons namely Ratna Bhadur and Durga Shamsher at Rhenock, East of Sikkim at 1910. Chandra Nursery reached its height as it had a contact and a good rapport with the British Political Officers therefore several guests from Britain visited Sikkim frequently. The nursery reached its peak during the 1930s. Traces have been found that the Chandra Nursery is one such Nursery in Sikkim which have been exporting flowers and were involved in the trading of flowers all over the world. Therefore, one can say that Chandra Nursery has definitely made its name in the history of Sikkim in terms of flower production and flower trading.

3. Objectives of the Study

The present study has the following objectives:

- (i) To study the policies undertaken by the Sikkim Government in developing floriculture as a commercial venture in the state.
- (ii) To look at the impact of those policies on the socio-economic status of the flower growers in Sikkim.

4. Methodology of the Study

In order to understand the present study both primary and secondary data have been used. In order to collect primary data, semi-structured interview schedule

which included both close and open ended questions for collection of quantitative and qualitative data respectively have been used to collect the needed information from the respondents who are flower growers in a face to face situation. Government data also have been collected as primary data. This study tries to highlight the policies of the Sikkim Government in order to develop floriculture¹ as a means to develop the economy of the state and also to analyze the impact of these policies on the socio-economic status of the flower growers in Sikkim. Whereas secondary data have been collected from periodicals, journals and magazines, published research papers in order to highlight the achievements and overall progress of floriculture in Sikkim.

4.1. Study Area and Selection of Respondents

Flower cultivation in Sikkim is spread in different areas of east, west and south Sikkim. Total 90 (ninety) flower growers/farmers, 30 flower growers from each of the three districts, are selected as respondents for collection of data by using stratified random sampling technique. These farmers are chosen from the districts of East Sikkim, South Sikkim, and West Sikkim owing to the fact that flower growers from these districts are ahead in floriculture. The selected areas for this study are Gurpesay, Kamrang, Tinzir from the South Sikkim, Daramdin in the West Sikkim and Kartok, Assam linzey and Basilakha in East Sikkim.

5. Government Policies for Development of Floriculture in Sikkim

The Sikkim Government has taken up several policies and programmes so far to encourage the farmers who are engaged in floriculture. The Floriculture Section under the then Agriculture Department of Sikkim was established during 1985-1986. This indeed acted as the blessing for the flower growers as gradually they took up cultivation of flowers not only as a hobby but as a means of earning a livelihood. Some of the colossus steps taken by the government of Sikkim have proved to be a backbone to these farmers who now are involved in floriculture. The establishment of Model Floriculture Centre, National Research Centre, two Joint Venture Companies, Tissue Culture Laboratories, Wholesale-cum-Retail Outlet in Delhi etc. all accelerated the pace of floriculture in Sikkim and changed the mindset of the flower growers in Sikkim.

After its establishment, the Horticulture Department under Floriculture Section held many mega programs. One of those programmes was the flower festival during 1990's which served as a huge occasion for Sikkim and at the same time it

¹ The term is used for the cultivation of flowers and other ornamental plant materials scientifically and commercially, and production of their by-products such as oils, scents and medicines etc. Floriculture characteristically comes under the aesthetic branch of horticulture (Roychowdhury & Mishra 2001, p.3). Growth of ornamental plants, plants breeding (to produce off springs) for the development of flowers and floristry (the production, commerce and trade of flowers) are by and large involved in floriculture.

encouraged people to grow flowers and plants. Another major step was taken by the Sikkim government to establish the Model Floriculture Centre in the state in 1992-1993 with the financial assistance of the Government of India. The establishment of the National Research Centre for Orchid in the year 1997-98 and two Joint Venture Companies along with the establishment of Tissue Culture Laboratories under Public-Private-Partnership (PPP) during 2005-06, and also the opening of Wholesale-cum-Retail Outlet in Delhi heighten the expansion of floriculture in Sikkim.

The Government of Sikkim has taken several steps to provide training for the flower cultivators so that the flower growers are aware of the climatic condition and soil of Sikkim and also to get the right method to be used in order to grow a particular flower with a particular setting under the various programs of capacity building. They are also exposed outside Sikkim to the places like Pune, Karnataka, and Delhi etc. in order to gather more experience in terms of flower cultivation. Government of Sikkim has also been providing with saplings to the families who are engaged in floriculture. Along with the saplings the Department of Horticulture also provides them with the organic spray like Rich Field, Kelbrick which are eco-friendly. Therefore, with such proactive government as a backbone for the flower growers, floriculture is definitely paving its way.

Sikkim Government has adopted several policies in the recent years for the development of floriculture in the state. The government is taking initiatives for developing more clusters and improving and strengthening the existing clusters through new and modern technology and the support of inputs. Particularly, the Department of Horticulture and Cash Crops under the Government of Sikkim has taken up a number of plans and programs to spread out floriculture in the state. The concept of 'Protected Cultivation' has proved to be one of the successful measures for cultivation of flowers in Sikkim. The government has taken initiative to establish and supply the Green Houses² to those who are interested in flower cultivation. The green house of low cost which is designed to fit the hilly landscape like Sikkim has become very popular among the flower growers. So far, 10,360 numbers of low cost Poly Houses³ have been constructed. Presently, capacity building is another important aspect by which farmers are trained within the state, in the country and also send to foreign countries like Netherland, Australia for more exposure.

² A building or room, usually made up of glass in which the temperature, humidity, light and carbon dioxide concentration in air is maintained within a desired range, used for cultivating tender plants or growing plants out of season.

³ Some of the green houses are made of plastic and bamboo which is a low cost green house often found in common use for growing flowers.

Several infrastructure facilities have also been provided by the state government in Sikkim by making available the following facilities:

- i. Cymbidium Development Centre
- ii. Model Floriculture Centre
- iii. Tissue Culture Laboratories
- iv. Integrated Pack House
- v. Cold Storage Facilities
- vi. Rose Demonstration Unit

As discussed above, the major objective of this infrastructure development is to promote floriculture up to the level of industry. Varietal screening, technology validation, imparting training and skill development of flower cultivators are also met. Model floriculture centers have been established with the aim of improving coordination of floriculture activities particularly in the South and West district of Sikkim. Tissue culture laboratories have been set up to generate Cymbidium clones. In addition, cold storage facilities are provided to the flower growers for keeping the freshness and also to maintain the quality of the cut flowers⁴ for export as well as marketing outside the state. So, many infrastructure developments such as model floriculture centre, cymbidium development centre, tissue culture laboratories, integrated pack house, and cold storage facilities have been provided in the state to promote floriculture up to the level of industries (Ibid, p.30).

An Integrated Rose Demo Unit covering 5000 sq. meters area has been set up at the Rose Valley in Daramdin, West Sikkim, for imparting training and coordinates activities to the flower growers related to quality Rose production and marketing. Two export units, one for Cymbidium and other for Anthurium have been established at Assam Linzey and Mazhitar respectively under the joint venture program. Indian Council for Agricultural Research (ICAR) has funded the establishment of the National Research Centre for Orchids at Pakyong near Gangtok for conducting research on orchids. East Sikkim has been declared as Agri Export Zone (AEZ) for cultivating Cymbidium hybrids commercially for supply in other countries. Cymbidium orchids are the ones found in the cooler areas of the world and it is one of the strength for floriculture as these are found in Sikkim. Model floriculture centers have been constructed at Namli in the East District and at Maniram in the South for the production of Rose, Gerbera, and Lilium etc.

⁴ Flowers which are cut from the main plants and is loosely made into bundles, generally use for decoration mostly sold and counted in numbers.

To promote Sikkim as an Agri Export Zone for floriculture, two Joint Venture Companies (JVCs) have been established by Sikkim Government in PPP (Public-Private-Partnership) model.

- i. Sikkim Himalayan Orchid Ltd (SHOL)
- ii. Sikkim Flora Ltd (SFL)

Sikkim Himalayan Orchid Ltd was launched during 2003-2004 through an agreement between M/s Natsyn Flora of Chennai and Government of Sikkim. Its main aim is to produce Cymbidium cut flowers for domestic and export markets. The total area for Cymbidium cultivation in Sikkim at present is 28 hectare which is highest in India, Sikkim Flora Ltd has been started on during 2004-2005 by a contract of partnership between Government of Sikkim and M/s Flora of Bangalore for production and marketing of Anthurium, Liliun, and Gerbera.

The Government of Sikkim also organizes an international flower show in every five years to put an encouragement among the flower growers. It also holds an annual flower exhibition at White Hall in Sikkim. In these events prizes are often given to the best growers so that their hard work and effort are recognized. Recently held event Sikkim Organic Festival 2016 by the Department was a huge event where in Prime Minister of India Narendra Modi inaugurated the event. He had nothing but praises for Sikkim. He went on to say that he had heard a lot about organic farming and was overwhelmed to see the orchids and the beautiful and colorful flowers. He also said that Sikkim can be an exemplary state. The event was a great success in itself therefore this reflects that the Department of Floriculture with the support of Government of Sikkim is trying to take commercial floriculture to a different level all together. The impact of these innovative ideas are not only paving its way and encouraging people here but it is also helping them to gain an international exposure. Flower cultivation and the farmers of Sikkim are also being promoted outside through the international events like these flower shows.

6. Flower Growers of Sikkim: A Brief Discussion

The farmers of Sikkim have considered cultivation of flowers as a means to earn income and have however shifted from the traditional practices of growing of crops to that of the growing of flowers. The reasons are simple and clear as it gives them high economic return from per sq. meter of land which becomes a good source of income as compared to the vegetables and crops. Consequently, the farmers of Sikkim have also been encouraged to grow flowers at a large scale and take cultivation of flowers for commercial purpose. Some of them found this as a better opportunity to earn money and be self-employed. With the growth of educated youths in Sikkim every year and the level of competition increasing day by day in service sector some of the youths have also chosen to dedicate their time and effort in growing flowers. This makes them self-employed. It is amazing to

note here that about 5,000 families in Sikkim are engaged in floricultural activities like cultivation, packaging, marketing etc. (Joint Director, FHCCD, and Government of Sikkim). Thus, floriculture has created a way of self-employment in Sikkim. Flowers in Sikkim are grown in an area of about 150 sq meters to that of 1000 sq meters. The farmers earn Rs. 10,000 to Rs. 60,000 sum of money in an area of 150 sq km and the money earned, goes up to 4 to 5 Lakh per annum with the area of cultivation being as large as 1000 sq meters (Joint Director, FHCCD Govt. of Sikkim). Some of them take up cultivation of flowers as a job after retirement giving a feeling of re-employment as well as providing them with supplementary income. Therefore flower growers of Sikkim have chosen floriculture for several reasons.

7. Data Analysis and Interpretation

The existing research work has generated some interesting findings. The collected primary data has been statistically analyzed and shown through tabular representations. The Government of Sikkim has extended its helping hand by different ways and means to the flower growers. The analysis of data which have been collected through field survey confirms the availability of infrastructural facilities provided by the Sikkim government to the flower growers also highlights the impact of government policies on their social and economic lives.

Table 1
Supply of Green House

District	Yes (%)	No (%)
East Sikkim	29 (96.6)	1(3.33)
West Sikkim	30 (100.0)	-
South Sikkim	30 (100.0)	-
Total	89 (98.9)	1 (1.1)

(Source: Field Survey)

Table 1 show that green-houses have been supplied to a vast majority (98.9%) of the flower cultivators by the Horticultural Department under Floriculture Section of the State Government. Only 1.1% of the respondents mentioned that the green house was not given to them. This has been due to some errors in the beneficiary list.

Table 2
Supply of Bulbs

District	Yes (%)	No (%)
East Sikkim	30 (100.0)	-
West Sikkim	30 (100.0)	-
South Sikkim	30 (100.0)	-
Total	90 (100.0)	-

(Source: Field Survey)

Data in the Table 2 show that all the selected flower growers have got bulb supplied by the government.

Table 3
Training if any by the Government

District	Yes (%)	No (%)
East Sikkim	30 (100)	-
West Sikkim	28 (93.3)	2 (6.7)
South Sikkim	24 (80.0)	6 (20.0)
Total	82 (91.1)	8(8.9)

(Source: Field Survey)

Data in Table 3 show that in general 91.1% of the selected flower growers has under gone training which has been provided by the government. District wise, it can be observed that 100.0% of the selected flower growers in the district of East Sikkim have taken the training.

Table 4
Collection of Fertilizers

District	Market	Horticulture Office
East Sikkim	-	22 (73.3)
West Sikkim	-	22 (73.3)
South Sikkim	-	25(83.3)
Total	-	69(76.7)

(Source: Field Survey)

The given data in Table 4 show that 76.7% samples/respondents in general collect fertilizers from Horticulture Department of Sikkim government. Also it is to be noted that the state has been declared as Organic so the fertilizers provided by the government are also organic. Some of the flower cultivators also use the manually made fertilizers like cow dung and urine of cow, vermin compose etc.

Table 5
Table Sex wise distribution of the Respondents

District	Male (%)	Female (%)
East Sikkim	24 (80.0)	6 (20.0)
West Sikkim	23 (76.7)	7 (23.3)
South Sikkim	20 (66.7)	10 (33.3)
Total	67 (74.4)	23 (25.6)

(Source Primary Survey)

Table 5 shows that most (74.4%) of the selected flower growers are males and 25.6% are female. So, it is evident that this profession is dominated by the males.

Table 6
Annual Income of Flower Cultivators through all sources

District	10001-15000	15001-20000	20001-25000	25001-30000	Above 30000
East Sikkim	2 (6.7)	6 (20.0)	1 (3.3)	2 (6.7)	19 (63.3)
West Sikkim	1 (3.3)	-	4 (13.3)	-	25 (83.3)
South Sikkim	1 (3.3)	1 (3.3)	1 (3.3)	3 (10.0)	24 (80.0)
Total	4 (4.4)	7 (7.8)	6 (6.7)	5 (5.5)	68 (75.6)

(Source: Field Survey)

Table 6 shows the yearly income of the flower growers/respondents. It is evident from the data in the table that 75.6% of the selected flower growers have an annual income more than Rs.30000, 12.2% of the respondents' annual income ranges between Rs. 20001 to Rs. 30000 whereas 12.2% respondents have annual income between Rs. 10001 to Rs. 20000. It is important to understand the variation in terms of the scale of flower cultivation as some have taken flower cultivation at a small scale. Also flowers are seasonal and the cost varies according to season and off season. It has also been found that some of the respondents have taken up this profession as their primary occupation whereas others have taken it as their secondary occupation.

Table 7
Availing of Loan

District	Loan
East Sikkim	6 (20.0)
West Sikkim	3 (10.0)
South Sikkim	1 (3.3)
Total	10 (11.1)

(Source: Primary Survey)

Data in Table 7 show that only 11.1% of the selected flower growers have taken loan from the government funding agencies.

Table 8
Form of Housing

District	Kachha	Pucca	Half Pucca
East Sikkim	1 (3.3)	24 (80.0)	5 (16.7)
West Sikkim	4 (13.3)	26 (86.7)	-
South Sikkim	5 (16.7)	15 (50.0)	10 (33.3)
Total	10 (11.1)	65 (72.2)	15 (16.7)

(Source: Field Survey)

Table 8 illustrates that majority (72.2%) of the respondents have pucca house, 16.7% have half pucca house which indicates that they are living in good housing conditions.

Table 9
Management of Daily Expenditures

District	Men	Women	Both	Head of the family
East Sikkim	10 (33.3)	3 (10.0)	14 (46.7)	3 (10.0)
West Sikkim	20 (66.7)	4 (13.3)	4 (13.3)	2 (6.7)
South Sikkim	17 (56.7)	8 (26.6)	3 (10.0)	2 (6.7)
Total	47 (52.2)	15 (16.7)	21 (23.3)	7 (7.8)

(Source: Field Survey)

Data in Table 9 show that male respondents are in majority (52.2%) to manage their daily family expenditures whereas 16.7% of the respondents are the females who control the management of the family expenditures.

8. Discussion and Concluding Remarks

In this study we found that the practice of floriculture is made easier in the state due to the policies of the government that encourage the flower growers every now and then providing infrastructural facilities and by recognizing the efforts by prizes given during mega flower festivals held on several occasions. Farmers in Sikkim are all set to take up floriculture at a different level with energy and the hard work all put together. Also there has been an encouragement from the government to accelerate the pace. The flower growers of Sikkim, majority of them are males along with few women have found a new source of earning at present. They have shifted from growing crops to growing of flowers. This is simply because there is a high economic return. Cultivation of flowers at one point of time was seen as a laborious and time consuming work and people were not keen to take up cultivation of flowers as a profession. But, with times the very notion of farming flowers has changed. People grow flowers not only for home gardens but to export outside and sell them off. It also has been observed that most of the financial transactions are done by the male flower growers. Along with the enthusiastic and hard-working farmers, the Department of Floriculture under the Government of Sikkim has taken keen initiatives for the development of flower cultivation. The idea of protected cultivation has been playing an effective role for cultivation of flowers. The farmers are also getting training so that they can use their practical knowledge for cultivation of flowers. They get training not only within the state but at many times they also are sent to other states even to other countries to get better knowledge for cultivation of flowers. Tissue culture laboratories, integrated package house along with cold storage facilities has also been provided in various regions of the state. The farmers also get infrastructural facilities for exporting flowers outside the state of Sikkim as flowers are

perishable and needs to be handled with care. Flower cultivation has opened new rays of hope to the flower cultivators in different regions/districts in Sikkim.

It has also been found through this study that there is a gap in coordination among the cultivators and the floriculture department which makes the existence of floriculture as a large scale industry little difficult. Along with that, also the maintenance of green house is a major problem that most of the farmers face as the cost of it is high therefore once a green house is destroyed due to any reason then it becomes difficult for the farmer/s to bring it back to use because of its high cost. It is also realized that in some of the areas flower cultivators to some extent lack the dedication and patience which is very much needed for growing of flowers. So, it can be concluded that the infrastructural and other facilities exist for the flower growers but how much of it is availed by them is a fact to be found out. If incase they are not using the opportunity and the facility then what could be the reason, is an interesting fact to be figured out. However reasons like lack of awareness among the farmers about the trainings, the distance of the place, minimum market place within state are some of the reasons to be known. Also declaration of Sikkim as an organic state has to some extent discouraged the flower growers for growing flowers. According to them it is difficult to protect flowers without the use of insecticides and pesticides. Also the flower growers are of the opinion that it becomes difficult to treat those plants and save them with the organic fertilizers and pesticides which has already been treated with non-organic pesticides and fertilizers. For a large scale flower growers to make use of the facilities like cold storage, packaging etc. becomes a little difficult because of the distance to where these facilities are provided. Hence, it is important to understand the various visible and invisible difficulties faced by these flower growers of Sikkim and act accordingly to solve their problems.

9. Recommendations

It has been realized during the field survey that the flower growers in Sikkim are facing a major problem in marketing their flowers. The flower growers either have to send flowers to Gangtok or Namchi for sell. It is a long distance to cover for many of the flower growers. Particularly for those farmers who are engaged in small scale farming this distance becomes a problem. They have to pay for the transport. Many times, they have to pay the middle man also. Sikkim State Co-operative Supply and Marketing Federation Ltd (SIMFED) should intervene to solve these issues by arranging pick-up vans which will collect cut flowers from different pick-up points close to the flower farming areas so that flowers can be sent to the market.

Flower cultivators are also of the opinion that Government should take initiative to improve the packaging, storage and export of flowers and also to provide training to them. This could be done by giving them training every month by the departmental experts. More of practical training could be given by taking them to

the places where the packaging is done so that they get well acquainted with the idea of packaging.

It is also recommended that government should find a way out to remove the middle man when it comes to marketing so that the flower cultivators can get the genuine price of the flowers. This could be either done by the Floriculture Department or Sikkim State Co-operative Supply and Marketing Federation Ltd (SIMFED) by collecting or by purchasing flowers directly from the flower growers.

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