

CHAPTER 1

INTRODUCTION

1.1 Background of the Study

Flowers form important aspects of human society. Flowers carry unspoken messages which give flowers something worth for. The use of flowers has automatically given their value and has shown their worth to people from all walks of life. With the growing importance of flowers, the demand for flowers has also increased all over the world. A good number of people earn their livelihood by growing flowers or making sure that the flowers reach the customer's hand in the form they want at reasonable prices (Kolavalli, 1991). Consequently, floriculture as an important economic pursuit has developed in the present day.

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

The Report of the International Labour Organisation (1999) entitled "*The World Cut Flower Industry: Trends and Prospects*" states that India and China have dominated the world concerning the area under cultivation for flowers though the yield per hectare is comparatively low. The major issue is that China and India have low purchasing power for imports of flowers and also the quality of flowers produced by these two countries is too low for export.

The second group of countries including Germany with sizable markets and imports satisfies the demand for flowers. The countries like Columbia, and Kenya have small home markets but with a large amount of export of flowers. Lastly, it is the Netherlands which has a large home market with the combination of a large export share. It is the world's leading exporter of flowers (*Current Status of Floriculture - Farm Nest.com*).

India's share accounts for only 1 percent of the world's business in fresh-cut flowers. However, annual domestic demands are growing at the rate of 25 percent and the international demand is Rs 90,000 crore, India's share in the international market remains very disheartening. Though India's share is less and disheartening the demand for flowers is no less. India is culturally rich and ethnically diversified. Flowers here are used among these cultured and ethnic groups on many occasions from religious to social, from birth ceremony to that death. Flowers also play the role of an ornament for women of different ages. It carries meaning in it. Therefore, the use of flowers has provided a push to floriculture industries leading it to become one of the most commercially feasible enterprises in India. It is correct to opine that growing flower is an ancient practice in Indian society but ancient floriculture was mostly of amateur type.

India is primarily an agricultural economy. Over 60 percent of its population depends on agriculture therefore agriculture is broad in nature and can be divided into food crops and non-food crops. Floriculture has become an important sector in terms of non-food crop production. Floriculture is a younger sector in agriculture but it is growing at a rapid pace. Its potentiality is felt by most of the farmers who have mostly shifted their interest from growing food crops to those flowers. Their growth potential is an important segment in domestic/national income too. Flower cultivation brings a large number of incomes per unit area in comparison to that of the ordinary crops that the farmers grow. Therefore, the production and consumption of flowers have been increasing all over the world today and

so in India. This has attracted most of the farmers and young and budding entrepreneurs. Globalization has played an important role and has made an effect on income enhancement. The rise in per capita consumption of horticultural products has also been realised in many places all over the world. Therefore, it could be said that this may be the reason for a sudden rise in the status of the floriculture industry. Though the domestic markets are flooded with new varieties of flowers, Choudhary (2008) mentions that traditional flowers like Roses, Marigolds, Tuber Roses, Jasmine, and Chrysanthemums are seen dominating the Indian markets even now.

1.2 Floriculture in Sikkim: A Study Prospect

Sikkim is located in the westernmost part of the Eastern Himalayas which became an Indian state in 1975. Before that time, monarchy prevailed in Sikkim. Sikkim shares its boundary with Nepal in the west and Bhutan in the east. The Darjeeling district of West Bengal lies on its South while in the North lies Tibet. It is the second smallest state of India after Goa. Different ethnic community people primarily like the Lepchas, Bhutias, and Nepalis reside in Sikkim and unquestionably are flower lovers. Generally, the people of Sikkim show a keen interest in growing flowers. In most of the houses, there have small garden/s where different varieties of flowers are grown. One can also notice that flowers are grown in pots or plastic bags in and around the areas of courtyards that give the houses and surroundings a very warm and beautiful look. So, it is understandable that at first flower growing was merely a hobby, an amateur type of activity. People grew flowers so that they could engage themselves in something or with the notion that flowers make a home look beautiful. They grew flowers so that they could get an environmental touch. Gradually, floriculture during the years has been paving its way in Sikkim.

In this way, floriculture as an economic pursuit has developed much these days in Sikkim as more and more people use flowers on daily basis due to the changes in their social values towards flowers and also due to their desire to get a touch of environment. Therefore, the value of flowers day by day has been increasing. This can be seen by the queue near the flower shops and also in the local markets which are flooded with varieties of flowers grown in Sikkim for instance with Anthurium, Carnation, Gerbera, Liliium, Gladioli and Cymbidium Orchids.

Flowers were used to growing as hobbies initially by the people later they found their commercial/market values. The increasing demand for flowers has played an important pull factor in bringing out their commercial value. Therefore, looking at the potentiality of flowers, floriculture in Sikkim has emerged as a new avenue ready to be open for exploration. Here it is also noteworthy that the geographical conditions such as climate, soil, vegetation and the prevailing river system etc and man's responses to them have been favourable factors for the ones who are adapting themselves to the profession of floriculture. Floriculture has now been given a chance of growth for itself as well as for the entrepreneurs who are keen on taking floriculture as a profession to making its way to the global market.

To contextualize floriculture in Sikkim, it also can be agreed that the major factor for its development in Sikkim is the prevailing Himalayan climatic conditions which bless the state with abundant flora and fauna. It is a biodiversity hotspot and one can find a large number of flowering plants and ornamental plants here. About 4,500 species of flowering plants are grown in Sikkim (Sikkim, India: Sanctuary to Horticulture Estate 2008). Premolars, Orchids, and Rhododendrons are some of the flowers which can be exemplified in particular. A brief discussion on some of the important geographical conditions of Sikkim is done below which made the way for the growth of floriculture there.

1.2.1 Climate

Sikkim owes its climatic condition to its altitudinal position in the Himalayas. The North of Sikkim usually has tundra whereas in the southern part it is sub-tropical. Sikkim's altitude is 280m (920ft) to 8585m (28000ft). Monsoon prevails from June to September in Sikkim. The state has a variety of plants from tropical to temperate to alpine and tundra. Therefore, it exhibits diversity within a small area. Pre-monsoon occurs in the month of May and monsoon continues up till early October (Yadav et al., 2018). Sikkim experiences summer in the foothills while on the high mountains it's a freezing winter. However, the trend of increase in altitude and decrease in temperature helps Sikkim to generate different types of vegetation. The climate is cold and humid through most of the year, and the chances of rainfall to occur is in each month. The area receives an average annual rainfall of 500 cm. so, it is a fact that the highly fragile mountain ecology, harsh topography and geographical location some of the people living in Sikkim are marginalised from the mainstream economy. This indeed leads to looking for a high-value horticulture option and also understanding the opportunities for growth of a sustainable economy.

1.2.2 Soil

The soil of Sikkim is highly porous, it is rocky and its capacity to hold water is low. It is also inclined to erosion. Loamy soil with dark brown to dark reddish brown in colour is found in Sikkim. The texture also varies from loamy sand to that clay loam with a considerable number of coarse fragments. The main type of soil in Sikkim is red loam and red and yellow soil. Red and yellow soil is mostly found in the non-alluvial tracts of Sikkim. Acidic rocks like granite make up the non-alluvial tracks of Sikkim. Commonly described as ferralitics soil, increased oxidized iron gives it a reddish hue.

The soil types have important roles to decide what types of crops or farming are suitable in a particular region/area. Floriculture is possible in many areas of Sikkim owing to the

existence of different types of soil there. Soil is one of the factors in Sikkim which plays a crucial role in the growth of floriculture as flowers can grow and flourish on suitable soil. Soil helps to keep up the structural stability of flowers and plants. Soil also releases water and the nutrients necessary for the growth of plants, therefore, the existence of a particular type of soil in Sikkim helps in the development of floriculture there.

1.2.3 River

Teesta and Rangeet are two important rivers in Sikkim. Gurung (2011) opined that the Teesta along with its tributaries is an important river system in the state. Teesta originates from Cholamo lake and flows through the heart of the state. It embraces many mountain streams in its fold. The Rangeet is a tributary of Teesta which originates from Kabru glaciers. It meets Teesta near Melli situated in the Darjeeling district of West Bengal. Natural springs are an alternate source of water in Sikkim. Some of the springs in Sikkim are hot springs. Water is one of the important components needed for the cultivation of flowers and most flower farmers utilize the water of these rivers and streams. Many of them also get water supplied by PWD/agricultural department/s from different sources like rivers and springs. Water helps in transporting nutrients to plants necessary for growth which they draw from soil. Plants are flourished and grow flowers when they get a sufficient amount of water because dissolved sugar and other nutrients are taken in by plants through the water. Therefore, water is an important component for the proper growth of plants and flowers. Sikkim is blessed with sufficient numbers of rivers and springs which facilitate floriculture to grow subsequently the establishment of several flower clusters there.

1.2.4 Land

Over the years agriculture has remained stagnant in Sikkim. The production of major food grains like wheat, and rice is low. The problem which has been identified with it is heavy

rainfall, acidic brown soil, the traditional method of farming, lack of adequate seed storage facilities, insufficient post-production storage, market and transports. Subba (2020) opined that due to Sikkim's geographical constraints, climate and development projects encroaching on agricultural lands have to now focus more on its strength which is on Horticulture and Floriculture in the form of large cardamom, ginger, oranges, vegetables, orchids, rose, tulip etc to buy rice from outside the state" (Subba, 2020). In this way, floriculture a new avenue has great potential, and there are emerging market opportunities. Further with the help of proactive government along with the favourable climate as marker floriculture in Sikkim can be an alternative source for the economy. The State Government has always shown a positive response in terms of floriculture which again is a boost in the state of Sikkim. The current data from Annual Progress Report (2021–22) mentions that the total area in which floriculture in Sikkim is being practiced is in 313.6 hectare. There has been a tremendous increase over the past few years in terms of area in which floriculture is being practiced in the state of Sikkim (HCCD, 2021-22) Sikkim has a literacy rate of about 80 percent which proves in itself that literate minds are waiting to get employed; in that case, floriculture can be an important sector where self-employment could be created. Therefore, with the advantage of the climate and pro-active government in Sikkim, enthusiastic and budding flower cultivators are ready to take this profession to the heights.

1.3 Historical Background of Floriculture in Sikkim

Sikkim's history of floriculture has long back. It has been informed that a few Pradhan (a Nepali sub-caste community) families were engaged in the trade related to flowers as a commercial venture although people of Sikkim started growing flowers as a hobby long before(www.flowersofsikkim.com). Though different species of orchids and other ornamental and flowering plants were available in abundance in Sikkim systematic commercialization of flower cultivation(floriculture) started in there since late1990s and

early 2000s (*Joint Director, FHCCD, Govt. of Sikkim, p.15*) when some farmers started practicing small scale farming of flowers as an economic activity for their sustenance or as their livelihood. Some factors are responsible for the progress of floriculture in this Himalayan State. The Sikkim kingdom (Chogyal dynasty) introduced the cymbidium hybrid in the palace during the nineteen fifties. The king introduced American hybrids in large numbers in the palace and later some of the enterprising nurserymen got engaged in introducing and also cultivating these exotic hybrids. The first flower show was hosted in North Sikkim (Kabi) in 1962 and later, the establishment of the floriculture section under the Agriculture Department of Sikkim during 1985-1986 served as a bonus for the development of floriculture in the state. And then, Sikkim Flower Festivals were organized on several occasions as mega-events during the 1990s. The establishment of the Model Floriculture Centre in 1992-93 with financial assistance from the Government of India and the plantation of elite corms of different flowers during 1994-95 have been other encouraging factors for the growth of floriculture in Sikkim. The establishment of the National Research Centre for orchid during the year 1997-98 and two joint venture companies along with the establishment of tissue culture laboratories under public and private sectors during 2005-06, and also the opening of wholesale-cum-retail outlets in Delhi was a boost in the expansion of floriculture in Sikkim. Therefore, these factors have accelerated the pace of floriculture that's why floriculture stands where it is today and is gradually making its way as an economic pursuit ultimately trying to provide sustained livelihood options and generating employment opportunities.

1.3.1 Role of Chandra Nursery

The Chandra Nursery which is well mentioned in the history of floriculture in Sikkim holds great importance whenever the growth of flowers in Sikkim is talked about. Therefore, it is worth mentioning about development in floriculture that had taken place in Sikkim during

Ratna Bahadur and Durga Shamsheer's time when they were the custodians of and contributed a lot towards Chandra Nursery.

Shri Ratna Bahadur and Shri Durga Shamsheer were sons of Shri Chandrabir Newar. He was far-sighted and had a bright vision. He was honoured by the British for being a man of example hence he was declared the chieftain of the society with the title of 'Pradhan'. He was also honoured by the British for his extraordinary dedication and effort which he used to put in whatever he took up and therefore was honoured by the name 'Bahadur Shamsheer'. This he passed on to his two sons and named them Ratna Bahadur and Durga Shamsheer.

Ratna Bahadur and Durga Shamsheer started the business of growing plants in 1910 on a huge land which extended around 80 acres at Rhenock, situated East of Sikkim. It surprised everyone how the idea of trading plants occurs to their mind. Several versions are given credit for the emergence of this brilliant idea in their head among which one is that Durga Shamsheer was the personal assistant to Sidkeong Tulku (Chogyal/ Maharaja) of Sikkim hence when he shared his desire to return to his village and start up with a business which would be related with plants, he was suggested that the plantation of tea would be an appropriate one. On the other hand, another version says that Durga Shamsheer was given an idea by an English gentleman to go for a business related to plants as he knew that the place was blessed with many floras and faunas. Shri Biren Ghose who lived in Darjeeling and also happened to be one of his classmates from school days is also given a credit for the planting business. Biren Ghose was working as the head clerk in Police Department and had contact with several British residents in Darjeeling. He had a natural talent for growing plants, especially Orchids. This played an advantage and helped in the development of a parallel business of orchids in Sikkim and Darjeeling. Biren Ghosh was stationed in that area through police personnel so he had an advantage and access to plants. Therefore, to

meet with the demand for plants made by their clients all over the world was made easier for them together.

Chandra Nursery reached its height as it had contact and good rapport with the British Political Officers. Several guests from the UK visited Chandra Nursery and Sikkim frequently. This was hence a driving force for the growth of the plant business. All of its orchids were given high prized by the British aristocracy. It is believed that the two brothers would put any botanist in embarrassment with the art they learned. The two brothers created a talent in them without even being a botanist by education or by genes. Ratna Bahadur specialized in orchids while younger brother Durga Shamsar learned to hybridize several garden plants like Bougainvilleas, Gerberas, and Dahlias etc. The plant that was hybridized was often named after the members of the royal families of Sikkim and also the Ranas of Nepal as they happened to be their big customers. Some of the plants were given the name of the family members and workers. They learned the methods of collecting orchids from the wild and also learned the technique of processing, packaging and exporting. They also learned to cultivate flower bulbs and to harvest, store, package and export them. This was done by ships which took nearly about three months to reach the destinations. These were usually exported to places like the UK, Europe, and Australia. A sum of rupees forty as the nominal fee for a licence was to be paid for collecting plants from the jungle then hence the nursery reached its peak during the 1930s.

Initially, baskets made out of bamboo were woven to send flowers and orchids/ plants as the boxes made out of cardboard were not available at that time. The bamboo baskets were made in appropriate sizes and shapes so that these baskets should be accepted by the postal system. Therefore, the post office in Rhenock was upgraded so that it could deal with the mailing and shipping of meter-long parcels. This type of well-managed commercial

floriculture created an impression of Sikkim and the name (Rhenock) of this small place surrounded by mountains and valleys reached far and wide all over the world.

Later, the administrators of Sikkim decided to ban the export of orchids during the 1950s as their depletion alarmed all of them. Most of the Pradhan families then moved to Kalimpong situated in the state of West Bengal which is several hours drives from Sikkim. It was easier to export plants and flowers from Kalimpong as it was more accessible to the outside world.

Then, Sikkim was integrated with India in 1975. So, the regulations were to be followed on the export of orchids from India. Hence tissue culture and the selling of seeds are the only ways which are permitted for commercial purposes. Orchids are therefore protected by Indian law.

1.4 The Changing Scenario in Floriculture in Sikkim

Floriculture has been bringing about changes in Sikkim through unprecedented growth in terms of area and production. This has improved the economic condition of many farmers who are encouraged to take up floriculture as an economic pursuit. Besides the existence of traditionally grown flowers like Roses, Marigolds, Chrysanthemums etc., markets in Sikkim are flooded with new varieties of flowers like Lillies, Gerbera, Carnations, Bird of Paradise etc. One can also witness markets with non-flowering plants which are often kept indoors while some are kept outdoors to give an aesthetic feel to the environment.

Floriculture in Sikkim has taken a heap over the period. Sikkim's flower farmers are equally keen on learning and adapting new and better ways of cultivating flowers. It has become a good source of income as compared to the cultivation of other crops as it involves high economic return per sq meter of land. Sikkim government is aiming to strengthen

floriculture industries by establishing new flower clusters and by strengthening the existing clusters by installing new technology and providing support for better inputs. Floriculture in Sikkim is spread over 248.1 thousand hectares area (NHB Data Base, 2014-15). The report entitled “Sikkim the Organic Leader” published by the IPR department in 2017 states that more than 50000 farmers now cultivate flowers in Sikkim. Therefore, floriculture in Sikkim has come a long way.

1.5 Cultural Significance of Flowers in Sikkimese Society

Sikkim as a state gives much importance to preserve environment and worships each tree and plant like Gods and Goddesses. Similarly, flowers too have a great significance in the life of Sikkimese people not only economically but culturally as well. Though Sikkim as a state is adorned with people who belong to different culture and background but at the same time there is a mutual respect among them due to which there is no hesitation among them to accept each other’s cultures and rituals. Regarding the same when we view the cultural significance of flowers in Sikkimese Society though different flowers have significance in different culture but as a whole the description below is in respect to the Sikkimese Society in general.

1.5.1 Rhododendron

Rhododendron/anthopogon locally known as *Sunoatey*, is used as natural incense by many especially in Buddhist community. The Rhododendron/aroboreum locally known as *laliguras*, is commonly use to prepare wine. Local communities have therefore benefited from the presence of Rhododendron plants. It also has rich ethnic as well as economic value (Basnet, 2015).

1.5.2 Oroxylum indicum (*Totola*)

Seeds of *Oroxylum indicum* (*Totola*) are used in every auspicious occasion including marriage ceremonies by Bhutias, Lepchas, Tamangs and Sherpas who follow Buddhism. Seeds of *Oroxylum indicum* (*Totola*) are used in every auspicious occasion including marriage ceremonies by Bhutias, Lepchas, Tamangs and Sherpas who follow Buddhism. Seeds of *Oroxylum indicum* (*Totola*) are used in every auspicious occasion including marriage ceremonies by Bhutias, Lepchas, Tamangs and Sherpas who follow Buddhism (Chettri, Bhujel, & Rai, 2020).

1.5.3 Marigold (*Sayapatri*) and Globe Amaranth (*Makhamali*)

Particularly during Tihar, *Makhamali* and *Sayapatri* are significant in their own right. For Bhai Tika, they are used to create garlands. According to a Hindu story, *Yama*, the god of death, once visited *Yamuna*, his sister. *Yamuna* gave her brother a warm welcome with decorations, wholesome food, a garland of *makhamali* and *sayapatri* flowers, and a blessing with tika placed on his forehead. *Yama* was overjoyed and grateful that whoever wore a tiara and a garland that day would survive beyond death. Since that time, these blossoms have become deeply ingrained in Hindu tradition (Kaini, 2018).

On either side of Sikkim's streets, rows of various kiosks filled with these flowers can be seen during Tihar. These blooms are often used as ornaments and for therapeutic purposes. *Makhamali* has a lengthy shelf life and can be kept in storage for up to a year. *Sayapatri*, on the other hand, is a priceless and stunning flower. In Tihar, garlands of *Sayapatri* are also used to adorn homes. Hindu deities, particularly Goddess Laxmi, are worshipped with the flower (Kaini, 2018).

In Central America around the 16th century, the Portuguese made the initial discovery of marigolds. The flower is used to mark off specific areas, such as pavilions, and to surround

holy fire pits or kunds where important puja rituals are held. On the Indian subcontinent, marigolds' vivid orange and red colours are ubiquitous in daily life (Kaini, 2018).

Makhamali has numerous colours, including purple, red, white, and pink, and can reach a height of up to 24 inches. The flowers can aid in the recovery from heart ailments and are also used to brew tea. It is a common misconception that *Makhamali* never wilts or withers. On Bhai Tika, sisters present *Makhamali* garlands to their brothers in an effort to wish them a long life similar to the flower. High in fiber and low in saturated fat are seeds (Kaini, 2018).

Apart from the above-mentioned flowers there is not much cultural significance of commercial flowers that is grown in Sikkim. However, flowers such as Orchid, Rose, Carnation, Anthurium, Lily etc. are used for decorative purposes during weddings, parties, various programs etc.

1.6 Conceptual and Theoretical Framework

1.6.1 Conceptual Framework

Discussion on some concepts which are used in the existing study is mentioned below:

Floriculture: The term is used for the cultivation of flowers and other ornamental plant materials scientifically and commercially, and the production of their by-products such as oils, scents and medicines etc. Floriculture characteristically comes under the aesthetic branch of horticulture (Roychowdhury and Mishra, 2001, p.3). Growth of ornamental plants, plant 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.

Floriculturists: In the present study, the term floriculturist is defined as one who is involved with the cultivation of flowers and ornamental plants either for commercial or for passion.

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

Poly House: Some of the greenhouses are made of plastic and bamboo which is a low-cost greenhouse often found in common use for growing flower plants.

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

Corm: Enlarged fleshy bulb like a base of a stem.

1.6.2 Theoretical Framework

As society moved from simple to complex, the interaction of human beings with the environment also developed in a different sense. Nature gave them so much for their survival and slowly got exploited by them whenever development works took place. From the state of hunting and food gathering, human beings started growing and producing food for self-sustenance. Likewise, many species that had been a magnificent gift of nature were used for different purposes. Some to eat, some are to use as comfort, some as medicines while others to decorate and many more to be left at their best. As the development took place in terms of culture and civilization more human needs emerged. Stability slowly became the need of an hour for them therefore house was built for shelter, food was grown for sustenance, a man covered themselves with clothes, therefore, all of these became a part of civilization. Likely, agriculture took an integral place in human life for the production of food for survival. And also, humans as cultural beings to beautify the surroundings and get an aesthetic feel started to grow plants and flowers. Flowers loot our hearts. In India, where culture is deep-rooted, flowers have special values. There is a religious attachment one finds to plants and flowers. Flowers are often offered with purity to the almighty. Flowers and plants are also placed in vases or pots for beautification. Likewise, flowers are

also seen and used as ornaments placing them in the hair of women to beautify themselves. Initially, flowers were grown as a hobby but the demand for flowers grew as time passed and because of their growing value farmers grew and sold flowers in small quantities in and around the local markets. Eventually, flowers found their place as a commercial venture.

Sikkim, the research area for the present study, located in the westernmost part of the Eastern Himalayas is at a promising stage in terms of flower cultivation. The practice of growing flowers has been a part of Sikkimese culture. As Sikkim is blessed with such a climatic condition which promotes abundant flora and fauna so attachment to Mother Nature is in the people of Sikkim. Some seasonal flowers and traditional flowers like marigolds and roses were always seen in the local markets in small quantities, especially during the festival seasons in Sikkim. Of late it has been realized that the floriculture sector has a huge export potential for which many of the marginal farmers are now turning their attention towards the cultivation of flowers. With the ray of hope that has been showing off late by the production of flowers, farmers of Sikkim have now been showing a keen interest in floriculture. As a commercial venture, it has also given rise to young and budding entrepreneurs. The existing study deals with these aspects of floriculture in Sikkim. And to deal with these aspects of floriculture in Sikkim, some sociological theories are remained as the guidelines to carry out the present research work properly. So here we are coming to that point.

Flowers carry symbolic values for human beings because of their capability of manipulating symbols. Symbolic interaction deals with that aspect of human beings who can interact through signs, shared rules, gestures etc. Many interactions take place among people in face-to-face situations but at times interaction through symbols also takes place directly/indirectly. When words fail to express many times, human beings use symbols to

communicate. They learn to attach certain meanings to symbols and they can order their lives based on these meanings. It also states that human beings alone are capable of producing culture and transmitting their history. Research strategies such as participant observation are employed which enable the researchers to gain access to these symbols and meanings as Howards S. Becker in *Art Worlds* (1982), Arlie Hochschild in *The Managed Heart* (1983) and R.S Perinbanayagam in *Signifying Acts* (1985) provide important accounts of meaning in symbolic interaction. So, it is a fact that different meanings are attached to the symbols at a particular period and situation. The meanings can be manipulated in a different situation looking at it. Likewise, flowers are used as symbols of communication many times in different situations. The significance of flowers today is not an unknown thing. We carry flowers and use them in different places and in different situations and occasions to give different meanings. Flowers in a way can arise emotional responses. Flowers are placed in pots and vases which carry different meaning whereas flowers in buckeye have a different meaning when it is given to someone. Flowers offered in temples are attached with a very holy symbolic value, likewise, when a flower is used by women as an ornament it gives a mark of beauty symbol. Therefore, in different times and situations flowers speak volumes. When flowers are cultivated and then sold owing to their symbolic values there is a regular process of interaction that takes place between the growers and the buyers. The interaction perspective looks at everyday interaction that takes place at the micro level between individuals and groups or with that one individual with another. Therefore, symbolic interaction as a theoretical framework has been applied in the present research study as flowers carry symbols for people to interact and convey messages in different situations. Talking about the society we live in we often see people use flower/s in different situations hence the meaning of flowers changes whenever they are used differently. It is also a fact that flowers have a positive impact on the emotional health of

people which can make their interaction humane. So, it is obvious that flowers can communicate giving a meaningful interaction among the persons who are using the flowers and with the ones for whom flowers are being used. It is noteworthy that Carter and Fuller(2015) mention that symbolic interaction gives significance to the way social institutions define and have their impact on individual/s, how important subjective view is for symbolic interaction, and how individuals make sense of their world by viewing it through their unique perspective. They are more concerned with subjective meanings rather than objective structures. Flower/s as an object can give itself a subjective meaning according to the situation, its use can convey different meanings in daily life as Carter and Fuller suggest in their writing. When the flower is used as an object to convey the actual emotions of the person who is using it as a means of expression, the interaction takes place and sometimes speaks a lot louder than words. Symbolic interaction theory assumes that people respond to elements of their environment according to the subjective meanings they attach to those elements. Similarly, flower/s as an element can attach any kind of meaning which can be altered through symbolic communication. It can deliver a different meaning in various situations of everyday life.

The gender issue is also there in all societies. Nilufer Cagatay (1998) states that the analysis of gender in terms of economy is quite a recent phenomenon though economists have spoken about "women issues" in isolation during the 1930s and 1950s. However, it was only after the early 1970's the link between the economy and the concept of gender relation as a socially constructed category emerged. It was recognized that the development in terms of the economy had affected women differently than that men in developing countries. In the 1980s the experience in terms of development gave rise to Gender and Development (GAD) which was coming together with feminist ideas along with the experiences and lessons learned from the limitations of Women in Development (WID) and Women and

Development (WAD). It sees the impact on both genders and makes sure that man and women both participate and benefit from the development. It also focuses on the division of labour between men and women in society. Lately, it has been mentioned that economic development and women's empowerment are closely related to one another. The inequalities that exist between men and women can be removed through development. This viewpoint is also true for the floriculture society of Sikkim which is not an exception. The present research study has found out that many women in Sikkim who also are engaged in floriculture first have to in many cases manage their houses – to accomplish the household duties and management responsibilities assigned to them at home then they can take up other responsibilities. Most of the female respondents engaged in floriculture in Sikkim said that they fulfil household responsibilities so that they can work outside peacefully. The main motivation for women has been to earn income as that would automatically lead to enhancing one's self-respect. In this way, the term gender has come a long way from how it was seen before to what it implies. The change that has so far been in the connotation of gender is a slow and gradual process. Successively due to different factors of awareness some changes in looking at women in terms of gender are changing. Many women are now taking up responsibilities outside the domain of their homes. In the case of Sikkim, a lot of women are in the floriculture sector which gives us the picture that women equally want to contribute to their families in terms of income. They desire to remain busy and earn independently for themselves and their families. Also, during these present days' women are trying to have a positive attitude towards busy life. Before where women were only seen as doing the household chores and expected to remain busy rearing children at home but the situations are changing for them now. They have understood the right to equality is actually in terms of education, work, economy, politics and other institutions that exist in society. This awareness among women has helped them to come out of the suppression and

domination of the patriarchy. It also gives them economic independence with which confidence comes to them to move ahead. Similarly, with women's involvement in floriculture, the scenario has changed in terms of their economic status. Now they are not only sharing their labour but also earning for themselves. Most of them are also involved in selling flowers in markets or encase where flowers are given to the middleman or any nursery, they are involved in collecting the money from them on their own.

It is also a fact that one of the major objectives of sociology is to explain the relationship between economy and social life. It is worth mentioning that the early development of sociology as an academic discipline has been credited to the economic changes resulted due to industrialization in western countries in the nineteenth and early twentieth century. During that period Karl Marx and Max Weber gave their sociological explanations of the nature and consequences of particular types of economic systems. For Marx 'economics' was about 'the relations of production whereas Weber considered it as the 'negotiations of market situations. For both of them, 'economic' appears to revolve around (paid) production and (paid) work. In this way, the economy is seen as an object in classical sociology. This type of objectification of the economy (paid production and paid work) has inhibited sociological efforts to grow greater sensitivity to the subjectivity of the economy that is subjective experiences (consumption and leisure, job satisfaction) of the workers/growers which invariably promote that economy. Presently, many sociologists view the relationship between sociology and economic life from the opposite direction i.e., with a subjective orientation. So, there is some overlap between sociology which seeks to study the operation of the economy, and sociology which has been applied to improve its operation (Hamilton and Thompson (ed.), 2002, p.130-163). So, it is sure that the sociology of economic life is a vast field to study. In this context, the present research work mainly has dealt with that conception of economic life which is sensitive to the everyday economic

experiences of the flower farmers in Sikkim without ignoring the bigger picture of the economy related to floriculture in Sikkim. Thus, it includes both micro and macro levels of analysis. The research work is exploratory and analytical in nature as it intends to explore the impact/influence of floriculture on flower farmers and analytical in the sense as it intends to analyse whether their engagement with this profession has brought changes in their social situations and social structures i.e. changes in their socio-economic status, demographic and family structure, and in their inter-ethnic relationships etc. Consequently, structural-functional and historical approaches have been applied for a standard sociological analysis of the present research work. It is also intended that this study also will apply the Marxist model of base-superstructure to find out how economic activities related to floriculture (base) of the flower farmers determine their socio-cultural aspects (superstructure).

1.7 Statement of the Problem

It has been found by surveying literature that no such intensive work has been done on floriculture in Sikkim hence there is a big vacuum in this area of research. It is a fact that floriculture commercially is a late addition to the agricultural sector and is developing with all of its potential because of which many farmers in Sikkim are now depending on it for earning their livelihood. Therefore, it is important to understand the role played by floriculture in the economy and society of Sikkim. There is secondary information which is provided by governmental records, journals, magazines, reports etc mostly give a positive impact on the people engaged in floriculture, as well as on society and the economy. It becomes essential to find out the authenticity of this secondary information which informs us regarding the well-being done by this sector in uplifting the socio-economic status of people engaged in floriculture in Sikkim.

There has not been an in-depth study to understand the aspect of floriculture in Sikkim. This has however led to organising a good deal of academic research work to find out the actuality and also to find out how this profession can be made productive for the people and can bring more prosperity to the society of Sikkim. The present research work intends to study these aspects and prospects of floriculture in the state. Sikkim's literacy rate is 82.2% according to the 2011 Census which gives a picture that people in Sikkim give importance to education. Literacy rate coupled with that an unemployment rate which is higher than the national average, floriculture can be a blessing for the state in solving socio-economic problems to some extent by creating self-employment.

1.8 Justification of the Study

People of Sikkim have always been close to nature. Flowers were always grown here as a hobby, As the saying goes in Nepali '*Phulphulney Ghar ma Laxmi bash garcha*' means there is a presence of goddess Laxmi in every home where flowers bloom. Culturally, flowers have significance as it is used in different festivals and social occasions in the state.

Due to the impact of networking and globalisation, the scenario of flowers growing only at homes has changed significantly. The hobby of growing flowers has now been seen as a commercial activity which has a high economic return. Today, Sikkim witnesses drastic flourishing in the growing of varieties of new flowers.

Secondary sources inform that floriculture plays an important role in earning a living for the family it has boosted the economic and social condition of flower farmers. Sikkim witnessed a steady rise in the cultivation of flowers at the start of the 21st century. With the incentive/support from the Department of Horticulture and the Government of Sikkim, the condition of flower farmers has developed. The state government has taken a lot of significant steps towards the expansion of floriculture in the state. In this way, although, a

lot of work has been initiated by the state government a systematic study has not been conducted so far. There have been several studies about the botanical aspect of floriculture but there is no such study on the sociological aspect of floriculture.

Since the research is a sociological study, the researcher had to look into the components that are a part of flower farmer's everyday life in the society they live in. How functionalism states that each institution in society has to work in equilibrium with each other for the society as a whole to function. Likewise, the researcher felt necessary to study the factors like age, sex, educational level, marital status etc among the floriculturist in Sikkim to have an understanding of the sociological perspective. Furthermore, the researcher also wanted to see the economic impact of floriculture on the flower farmers so that the account of the flower farmer's daily life with their involvement in floriculture could be understood sociologically. The imagination of flowers in anyone's mind gives it a very female connotation. But it has been found out in the study that there is more involvement of males in floriculture than that of females. Women are mainly involved in value-added activities such as garland making. This suggests the significant gender dimension of the downturn in this sector. Moreover, the Government of India (GOI) has been promoting floriculture as a livelihood option for tribal farmers and small and marginal growers in the Northeast states (Chetan, 2020).

Sikkim saw a drastic change in the use of flowers. In modern Sikkimese society flowers and florists have become a culture. One can see people of Sikkim with flowers in hand walking from the flower market. Even if flowers were used it was traditional flowers which were often grown around the courtier that one had. However, the previous government led by Mr Pawan Chamling somehow changed the scenario of floriculture in the state. Looking at this one can realise that the policies of upliftment of floriculture in the state as envisioned by the previous government were properly implemented in the field which brought about

vivid changes in terms of floriculture. Furthermore, the extended help from the Horticulture Department towards the flower farmers in the state represents the fact that the government may have thought of floriculture as an alternative source of earning to tackle unemployment in the state. The involvement of youths would enrich floriculture even more with the skills that they may possess. Sikkimese society sees an influx of varieties of flowers ever since Pawan Chamling and his government gave their attention to the art of flower growing and the flower growers of the state of Sikkim. Several modern flowers are seen on most occasions at home. This has become a culture of having them at home or giving them out on some occasions. Therefore, to understand the place flowers hold in Sikkimese culture, to understand the impact flowers are making in the modern society of Sikkim, it becomes important to study floriculture and floriculturists in Sikkim from a sociological perspective. Therefore, the researcher has intended to bridge the gap of unmentioned information related to the development of floriculture and the upliftment of floriculturists doing the present study with a sociological orientation.

1.9 Research Objectives

1. To know the social history of floriculture in Sikkim.
2. To assess the initiatives taken by the Sikkim government for the growth of floriculture in the state.
3. To learn the demographic and social characteristics of the flower farmers in Sikkim.
4. To analyze the impact of floriculture on the social and economic life of the flower farmers in Sikkim.
5. To understand the production and marketing of flowers in Sikkim.
6. To study the impact of commercial floriculture on the environment of Sikkim.
7. To explore the problems, if any, impeding the growth of the floriculture industry in Sikkim.

1.10 Research Questions

1. How the cultivation of flowers started in Sikkim?
2. Why are people in Sikkim inspired to cultivate flowers?
3. What are the roles played by the Sikkim government to promote the cultivation of flowers commercially in Sikkim?
4. What are the demographic and social characteristics of the flower farmers of Sikkim?
5. How the production and marketing of flowers are done on a micro level in Sikkim?
6. How is the market networking of the floriculture industry on a macro level in Sikkim?
7. How the commercialization of flower cultivation brings changes in the social and economic life of the flower farmers?
8. What are the problems faced by flower farmers in their profession?
9. What are the impacts of floriculture on the economy and society in Sikkim?
10. Is flower cultivation in Sikkim hazardous to its environment?
11. What strategies are needed and requirements to fulfil for the promotion of floriculture in Sikkim?

1.11 Review of Literature

Many books and articles in journals and magazines on floriculture have been reviewed to gain knowledge on how to carry out the present research work. Much of this literature which has already been published has helped the existing research study to make it more informative and authentic. Ridley (2012) defines a literature review as a systematic examination of the body of information already available that identifies, assesses, and synthesizes for clear presentation.

However, there are very few studies which throw light on floriculture in Sikkim and the vast majority of these studies are official reports. Most of the reports have a statistical background related to the production of flowers and say very little about the flower farmers and the realities and problems they face in their daily lives and their profession. Research work at the micro level analysing the actual social and economic conditions of the flower farmers in Sikkim is non-existent. Not a single research work has been done on this subject with a sociological orientation. The relevant issues of their life are still unexplored. Thus, there seems to be a big gap in this sphere of social science research which the present research work intends to bridge. As mentioned above, major and intensive work with regards to sociological perspective has not been done on floriculture in Sikkim and there are a few different departmental publications and unpublished papers by the Horticultural and Cash Crops Department of Sikkim Government which provides us with an insight into floriculture in Sikkim. A review of some books and articles is taken into consideration for a general understanding of floriculture in Sikkim which is as follows:

Annual Progress Report (2004-05) gives us an insight into the Agri Export Zone in Sikkim. It discusses how floriculture could be commercially cultivated to prettify income per unit area. Farmers can make use of the small land holdings with the help of family labour so that there is self-employment and it can help them to earn extra income. All this information is highlighted in the report. The report tells us about the awareness camp cum training on floriculture which is held by the department of floriculture. It also gives us information about the commercial flowers that can be grown in Sikkim. It tells us about different types of Green Houses. Most importantly it talks about the mission which the state has adopted which is organic farming along with the importance of the two joint venture companies in Sikkim and the role of capacity building.

Annual Progress Report (2009-10) informs the importance of flowers and their contribution to extra income. The report says that during the year 2009-2010 more than 2.5ha area has been added to rose cultivation, taking the total area to 14.00 ha. The area for cultivation of cymbidium has crossed 20ha which is a record in the country. And the production of other flowers too is increasing as there is an increase in the area of cultivation. The annual report gives us information about what protected cultivation means. It also tells us about automated Green Houses which have been constructed at Majitar (East Sikkim) and Birding (West Sikkim). The report also contains information about tissue culture laboratories in Sikkim. It says that four tissue culture laboratories have been set up by the private sector and two by the public sector which has been adequately strengthened to produce the materials for meeting up with the immediate needs related to floriculture.

Annual Report (2010-11) provides a horticulture profile of Sikkim. It gives information on what horticulture comprises. It tells us about the production of different fruits, vegetables, tuber crops and flowers. It informs about the new diversification in horticulture sectors like beekeeping and cultivation of mushrooms, bamboo and medicinal plants, and how has it helped in widening this sector. Floriculture in Sikkim has been able to change the concept of horticulture by transforming it from a hobby to that an economic venture. It gives information on district-wise physical achievements in floriculture during 2010-11.

Annual Report (2011 –12) focuses on NRCO profile. It has highlighted on the collaboration and links NRCO with different institute of research and development. It also informs about the initial years of establishment and it focus on different schemes of development like hybridization, production quality, post-harvest management, tissue culture etc. It also informs how the research work is carried out under the project of 12 institutes. It shows the organisational set up of ICAR. The report mainly focuses on Cymbidium Orchids and other floricultural crops.

Belwal and Chala (2008) have done a case study on the rise of floriculture industries in Ethiopia. They also have tried to understand the success of floriculture by environmental assessment of the floriculture industry in Ethiopia. The authors have also looked into the different promotional efforts that have been made by the government to boost floriculture export in Ethiopia. The findings of the study reveal that foreign investment, government support, and the formation of the Horticulture Producers and Exporters Association (HPEA) are the major factors for the flourishing of floriculture in Ethiopia. There are some problems which are faced by the floriculture industry in terms of infrastructural facilities, agricultural inputs, and narrow product range. But irrespective of these hurdles, Ethiopia has been able to attract both domestic and foreign investors in its floriculture industry.

Burman and Others (2013) in ‘Production Technology of *Aeridesodoratum*, *Coelogynenitidam*, *Zygopetalumintermedium*,’ (Technical Bulletin) have given the details of production technology for the cultivation of *Aeridesodoratum* (cat’s-tail orchids), *coelogynenitida* (the shining orchids) and *Zygopetalumintermedium*. The journal describes plants and gives information about the amount of water, light, fertilizers, pests, potting etc to be used for the cultivation and production of the orchids. One gets a clear idea of growing these orchids properly by reading the bulletin.

The Report entitled “**Commercial Cultivation of Cymbidium Orchids in Sikkim**” (2011-12) gives detailed information about the project for the commercial cultivation of cymbidium orchids in Sikkim. It informs us about the historical background of Sikkim, its climatic condition, the history of orchids in Sikkim, project preparation and objectives of project/s, weaknesses, opportunities, and technical details of cultivation of Cymbidium orchids. It also gives detailed information about approximately the number of cultivators of flowers are there, what type of climate is appropriate for the growth of cymbidium. It

also tells us about the main domestic markets. It says that countries like Bangladesh, Myanmar, Malaysia, Thailand and Singapore can be explored as markets for the export of Cymbidium orchids.

Chakraborty (2018) the author focuses on floriculture and its importance in Darjeeling hills of West Bengal. It also highlights on different flowers like Orchids, Carnation, Gerberas etc. It also talks about the quality check. Because of decrease in quality, production of flowers have been affecting to such an extent that it affects both domestic and foreign market. The author also highlights on how Darjeeling hills have been important in terms of development of floriculture in India. It has also focused on the system of farming that existed in Darjeeling hills of West Bengal.

Datta (2019) states that irrespective of technological advancement, some of the way of working or experimenting has not changed. It is like a routine. Datta mentions that a need based planning is necessary. It can consider areas like on – going and on – coming research areas in floriculture. The activities could be done by diversifying according to the needs of the modern developments. Also need of applying modern technology for further floriculture studies has been realised.

The Journal titled “**Floriculture Today**” (2011) provides information on many flowers which are under threat. Likewise, it talks about some orchids which are exotic and are found in Northeast India but are now in depletion due to deforestation and reckless smuggling. 70 out of a total of 800 species grown for this reason are on the verge of extinction. Other factors which are affecting the loss of orchids include improper use of land, unscientific cultivation (Jhuming), and the exploitation of natural resources which cause damage to Northeast India’s wealth of biodiversity.

The Journal entitled “**Floriculture Today**” (2012) informs about the technical visit of a delegation to the Netherlands. The Netherlands’ inspection service for horticulture is known as Nakutuïnbouw which is a self-governing body regulated by the Ministry of Economic Affairs, Agriculture and Innovation. Nakutuïnbouw is the only organization in the Netherlands to assess varieties of floriculture, arboriculture and vegetable crops for distinctness, uniformity and stability for registration purposes and to grant Plants Breeders the right to inspect seed and planting materials. It inspects and then ensures that the materials are of good quality. If the materials are not of good quality, then Nakutuïnbouw stops them from entering the trade channels. Hence, the supply of high and standard-quality materials is maintained.

Getu (2009) highlights the fact that floriculture is one of the booming sectors in Ethiopia. The study brings out that factors like suitable climate, availability of natural resources, support from the government, favourable investment laws and incentives, proximity to the global market, the efficiency of the transport system and availability of abundant and cheap labour etc have helped in the growth of floriculture in Ethiopia. Floriculture industries have also formed an association in Ethiopia known as the “Ethiopian Horticulture Producers and Exporters Association” which has been helping this sector in many ways. However, it points out that floriculture is growing there as an industry but at the same time, environmental concerns are growing there too. Environmentalists have been questioning the uses of chemical fertilizers, disposal of waste materials and protection of water bodies. So, they are concerned regarding the damage to the environment. The article has looked at the impact of floriculture industries on the environment, and the threat. It also focuses on the national policies and laws on floriculture in Ethiopia.

Ghosh and Gupta (2019) in their study have mentioned the influences of social factors on floriculture. Apart from the social set-up, the study also talks about the economic structure

wherein landholding size, occupational structure, and income of cultivators are focused in detail. It discusses how floriculture is practised alongside agriculture but as the growth of floriculture has strengthened the economic base quality of the cultivators so they have now been attracted towards floriculture. It shows how the land holding size of the farmers is related to a large investment in floriculture with the rise in the net value of flowers per acre of gross flower cultivated area.

Hall, Lopez and Others (2010) have mentioned that the commercial greenhouse industry has started to implement sustainable production practices. They also mentioned that most of the floricultural crops were produced in 76 million sq. meters (7617 ha) in controlled greenhouse environments or other protected structures (USDA, 2008, 2009). This is how sustainable floriculture aims to reduce the degradation of the environment and maintain agricultural productivity. It also helps in promoting economic viability, conserving resources and energy, recycling biological control and using alternative energy sources.

The Report titled “**Implementation Plan for Mission: Poverty Free Sikkim (2013)**” focuses on different missions implemented and applied in Sikkim to overcome poverty. It discusses the strategies adopted for poverty alleviation like food security, rural connectivity, wage employment program, energy and power etc in Sikkim. It talks about different schemes for floriculture that have been identified as one of the ways of income generating for the people in Sikkim. It tells us about the different areas to be focused on like crop diversification, area expansion, infrastructural development etc for the promotion of floriculture in the state. It discusses different flowers which have the potential to grow in Sikkim owing to the suitability of climatic conditions. It reports that flowers like cymbidium orchids, rose, anthurium etc need more care, technological back-up, infrastructural support and greater marginal skills whereas flowers like gladiolus, liliun,

gerbera, Zantedeschia do not need so much care and investments but these flowers have equal commercial significance.

Kolavalli and Others (1991) in their book entitled “Floriculture Industries in India” provide basic information on the floriculture industry in India. Their study aims to identify the requirements which are to be fulfilled to promote the floriculture industry. Their study deals with the geographical distribution of flower production, marketing of flowers in India, different uses of flowers, flower farmers, international trade of flowers, India’s share in the world trade of flowers and the reasons for India's poor performance in exporting floricultural products, and, lastly, what requirements need to be fulfilled to develop the floriculture sector together with the expansion of exports of flowers.

Koranne (1997) the article focuses on two channels in terms of floriculture. One is producer – retailer – consumer, other is producer – consumer. The study is based on the cultivation of rose in the state of Maharashtra. It mainly focuses on tuberose and rose. The study shows how the flowers that are marketed through the channel of producer – retailer – consumer increases in the share of producer.

Kalita (2019) in his study worked on the problems in the floriculture business in Assam. He confirms floriculture as a profitable business in many regions of the world. His study gives information that floriculture is growing also in some parts of India. Assam which is part of Northeast India has a favourable climate for floriculture. The study confirms that floriculture is becoming one of the main occupations for the families residing in Hajo Circle of Assam. Furthermore, it highlights that the floriculture business faces many problems in different stages. The study also highlights the fact that if these problems are tackled properly there is a chance for floriculture to develop as a good source of income. It also

says that floriculture can help to cope with the problem of unemployment faced by flower farmers and sellers of flowers and flower products.

Lahiri and Others (2001) in “*Sikkim: The People’s Vision*” have discussed that Sikkim is trying to put itself on the eco-friendly sustainable developmental path. The aim of it is actually to leave behind the centuries of under-development with the sincere use of modern technology. The vision is of prosperous Sikkim with abundant trade, hydroelectric power, tourism, floriculture etc. It also says that for the vision to come true, the government has to plan a strategy and come out from the usual business.

Manmohan (2008) has discussed the major floras and faunas of Sikkim. She has also briefly explained how the growers in Sikkim are close to nature and how Sikkim is trying to position itself as “Scientific and Organic”. Her study discusses the cultivation of vegetables, fruits, roots and tuber crops in Sikkim. She tells us how flowers have to give a competition with the attractions like chocolates, jewellery, wine, etc and survive in the market where they can have a chance of getting replaced by the same. How floriculture can grow into an industry provided it overcomes the fact of land space and gradient as a constraint. However, she says that the quality of its climate and water is a boon for the state. She also talks about different nurseries which are there in Sikkim.

Medhi and Others (2013) in their article entitled “Production Technology of Dendrobium” (Technical Bulletin) have given a detailed and in-depth insight into the dendrobium orchid. Their study covers botanical description to cultivation technique, post-harvest management to packaging, storage and value addition for this orchid. This is a reference book for farmers, orchid entrepreneurs, exports, extension workers and also for students who have an interest to know the cultivation of dendrobium.

Mitra and Others (2022) in their study show how the floriculture sector has boosted up \$4220 million on a global level in terms of export revenue. The study also talks about how the floriculture sector has given rise to employment opportunities. It also focuses on how floriculture has promoted livelihood options and the well-being of farmers by reducing poverty and inequality. The study also states that floriculture sectors were threatened by the Covid-19 pandemic like any other sectors were affected. There were disturbances in chain supply as transportation was restricted. It also informs how initially there were different types of fear that crossed the mind of people like the sudden loss of jobs, fear of infection from flowers etc. There were restrictions on the opening timings of markets, and a lack of online sales facilities. Demand for flowers decreased by 50 percent instantly. There was no demand for flowers as all types of events were kept on halt which in turn led to problems like a reduction in farm income for flower growers, a drop in the income of daily wage labourers, and unemployment etc.

Pradhan (2008) in his book “The life and times of Plantsman in the Sikkim Himalayas” illustrates the history of the Pradhan clans in Sikkim who have created miracles in terms of commercial floriculture during the monarch rule in Sikkim. He has written every bit of important facts which give the reader an idea that cultivation of flowers in Sikkim is not a new phenomenon but has been carried out even when Sikkim was not a state of India. He also has discussed bridging the gap between the past of flower cultivation to that of today. He has written about the history of Chandra Nursery in Renock, Sikkim which is an important aspect for any researcher who wants to know and understand floriculture in Sikkim.

Prasad and Kumar (2010) in their book “Commercial Floriculture” have dealt with the marketing, cultivating and arranging of flowers. The book also talks about the various

world scenarios where the Netherlands has dominated the floriculture industries with 70 percent of its contribution in the flower trade and is the biggest exporter. Indian contribution at present in the annual global trade is about \$ 0.36 million. It says that most of the floricultural zones are located in South India with few pockets in the North and very less numbers in the West. The book mentions that India has to go a long way in terms of the production, marketing and export of flowers.

Randhava and Mukhopadhyaya (1986) in their book entitled '*Floriculture in India*' confirm the fact that floriculture is a developing subject in India and it faces a lot of problems which can be solved. They highlight the fact that despite being rich in plant resources, India wastes its resources for a reason like urbanization, industrialization and an unscrupulous collection of plants for their medicinal properties. Their book talks about the solution as the establishment of the Indian Council of Agricultural Research (ICAR) has come up intends to protect the rare species of Orchids by establishing some orchid sanctuaries. They have provided information about the income per acre generated by floriculture seeming to be much higher than any other agricultural product provided it is done by following the scientific way. They also have highlighted the aesthetic value of flowers in our daily life, giving the importance of the proper method of adaption for packaging for the prolonged life of the cut flowers to reach its domestic as well as foreign markets. The book can be a guide to understanding floriculture and also knowing the skills needed for flower cultivation.

Roychowdhury and Mishra (2001) in their book titled "Fundamentals of Garden Designing" discuss the roles played by ornamental plants in the environmental planning of urban and rural areas for overcoming pollution, social and rural forestry, wasteland development, outdoor and indoor landscaping etc. They also discuss the by-products of flowers and also the application of biotechnological approaches like micropropagation,

somatic hybridization and genetic engineering for getting new flowers of superior quality. They talk about the domestic marketing and export of those new varieties of flowers.

Roy and Others (2012) in 'Floriculture Today' discuss the impact and the importance of floriculture for those places where the use of flowers has been put up. The article also informs that the popularity that the flower had grown is all because of the result of the planned programme undertaken by the Government to India in many Indian states through different channels. It also talks about the history of the first flower show organized in 1830 by the then (ROYAL) Horticulture Society at Alipore, Calcutta. This marked a good beginning which later popularized and became a big event in India. Several central and state government departments are involved in promoting and organizing several activities related to the same.

Rajnikant and Others (2022) have informed in their study regarding the "Prospect of Floriculture in Lucknow District". He also discussed the current status of floriculture in the world with a diagrammatic representation wherein the Netherlands is shown as the highest global producer in terms of cut flowers with 57 percent while countries like Italy, Germany and Israel have a representation of 1.0 percent each. It highlights the fact that if floriculture is scientifically established as an industry, it can generate sufficient revenue and employment. The authors have mentioned that major challenges faced by floriculture in Lucknow are related to the issues of decreasing margins, environmental problems, pesticides usages, farmers do not collect market information prior, and inadequacies in the policies of the government in terms of floriculture. The study concludes by mentioning that varieties of opportunities exist in floriculture as it can create employment and consequently can boost the rural economy.

Sanchez (2002) highlights the floriculture industries in Colombia which emerged there in 1965. The author informs that fifty types of flowers are cultivated in Columbia among which roses, gerberas, lilies, pompons etc are exported to many countries like the United States, Germany, and Canada. 95 percent of these flowers are shipped to these countries. It also informs that more than two third of the flowers that are sold in the markets of the United States are imported from Colombia (De Palma 2001). The author gives interesting and factual information that women constitute 70 percent of the workforce associated with floriculture in Colombia. It is mentioned how floriculture has brought an impact on women by giving individual identity to them and by bringing change in household dynamics. Furthermore, the study finds that the flower industry in Colombia has bought social change and gender equity.

The Report “**Sikkim towards Fully Organic State by 2015**” (2012) discusses how floriculture has played a major role in Sikkim by changing the concept of growing flowers on a commercial basis. It talks about different infrastructural developments in Sikkim like the establishment of the Cymbidium development centre, Model floriculture centre, Ginger processing unit, automated greenhouses, Tissue culture laboratories, integrated pack house, cold storage facilities, wholesale cum retail outlets etc.

Sharma (2020) in the Journal of Management Science has focused on “floriculture and its demand and scope in India”. Floriculture has been seen as having a great economic potential. Though, traditionally flowers were grown in India. The author writes that it has the capacity to generate revenue. It has also contributed on employment among the farming community. The author also highlights on the status of floricultural Industries at present. It also highlights on the potentiality and challenges that floriculture Industries come across.

Sharma and Kumar (2019) have highlighted the global scenario of floriculture. They have mentioned that India is an agrarian state but has a history of growing flowers for a

long back. Globalization has been playing a vital role to grow flowers in large numbers from traditional flowers to those new varieties. Likewise, they have mentioned how floriculture in Sikkim has been given importance and how has it been growing up to be one of the biggest industries in Sikkim. Their study also has highlighted how Sikkim as an Indian state is recognised on the international front in terms of floriculture. They have talked about how educated florists have been showing risk-taking tendencies and are also practically aware which helps them to understand the flower market better. Their paper has discussed how gender, age, and education level have important roles in terms of choosing floriculture as a profession.

The Journal **“The Organic Sikkim Wave: Sikkim Today”** (2017) is worth reading in which a lot of information regarding sustainability, organic farming, floriculture, and rural tourism is included. The journal tells us how organic farming is not merely about not using pesticides but also comprises harvesting and composting. It also discusses beekeeping, biogas production etc. The magazine also highlights the aim of sustainability wherein the management of resources of agriculture along with maintenance of the quality of the environment and conservation of natural resources is a holistic aim. It mentions the benefits of organic farming - how it helps in maintaining soil fertility also making water less polluted protecting flora and fauna with higher biodiversity as well as to provide better product quality etc. It discusses how floriculture is slowly and eventually growing at its pace, and the humongous progress in the floriculture sector has been a ray of hope for the farmers forming the base of their village economy. It also informs how Sikkim being the only state producing highly valuable Cymbidium Orchids fetches an attractive market rate. Cut flowers are mainly sent to the national capital, Delhi. 25 percent to 30 percent of cut flowers are marketed outside while the rest are sold in local markets. Sikkim being the only “organic state” in the country has drawn everyone’s attention.

Tootell (1963) in her book entitled “Floristry the Theory and Practice of the Care of Flowers” discusses the symbolic utility of flowers to make our daily life socially meaningful. She mentions that meaning has been given to almost every flower so that the presentation of a particular flower can suit a particular social occasion.

Whitaker and Kolavali (2006) have written in the book titled “**Technology, Adaption and Exports**” how some developing countries got the right way to produce cut flowers. Kenya can be taken as an example where flower and tea cultivation along with tourism are the three most important sources of foreign exchange. Floriculture produces about 14 percent of the export earnings of Kenya. It can be understood by the fact that 60 percent of the African flower trade is done in Kenya. Floriculture has removed poverty by generating employment for semi-skilled labourers. It is factual that 40,000 to 50,000 farm workers are employed in the flower industry. The book also describes how much flowers are fragile and perishable therefore utmost care has to be taken till the flowers reach the hands of customers as it is when the prices of flowers are determined. The book also informs us that the flower markets are flooded with sophisticated consumers who are willing to pay good prices for good quality flower products having unusual varieties.

Yadav and Others (2018) have discussed in their article how horticulture is getting important in the country and how there has been a record production of horticultural crops during the years 2017 and 2018. They have also discussed the principles of organic farming and how organic products are in demand and healthy food has become necessary as people are now more health conscious. Their article talks about how the market for organic products is on increase these days. Nowadays, natural and environmentally friendly methods and materials are used in horticulture aiming at a healthy environment, healthy food and healthy consumers which have a broader meaning in a market situation.

1.12 Research Gap

The above review of literature emphasises that not many detailed studies have been done on floriculture in Sikkim. The studies that exist are general and are not carried out from a sociological perspective. The literatures currently available mostly are records, reports and journals published by the government. In addition, some of the literatures surveyed by the researcher are unpublished governmental records. Furthermore, some studies on floriculture in India in general and in Sikkim, in particular, have been done with economic and statistical perspectives. So, the present study which is an intensive study on floriculture in Sikkim and its socio-economic impact on the farmers who are engaged in this profession as part-time or full-time farmers surely will be useful because the existing gap can be filled up if the subject of floriculture and floriculturists in Sikkim is studied in details with a sociological perspective that can contribute in the field of the academy for further research in near future.

1.13 Methodology of the Study

Research is the search for knowledge. It is refining the existing knowledge with the addition of new information available on it. It also means a systematic and scientific search for information on a specific topic or area. Many times, it is considered the art of new information through the process of investigation with facts and knowledge acquired through detailed study from which a conclusion could be drawn. Shank (2002) has defined research as "a form of systematic empirical inquiry into meaning". By systematic, he means well-planned and in order by following the rules which are agreed upon by members who are part of the research community. Empirical means information gathers through the world of experience. Inquiry means how is the researcher trying to understand how others make sense of their experiences. Therefore, research is an original contribution to the knowledge

that already exists making it more proper and advanced through the method of observation, experiment, and comparison to proceed with the facts finding and studies.

1.13.1 Research Design

Research design can be considered as the plan of the purposed research work. It can also be considered as the structure of research. In a specific term, it can be referred to as the procedures for the collection of data and analysing of it. Research design is a projection of the framework for the research process and analyses of data guided by the research questions (Bryman & Bell, 2007).

The present research study is mixed method research which involves both quantitative and qualitative forms. The quantitative method is used in testing objectives by measuring (numerically or statistically) relationships between variables whereas qualitative research is based on exploring, analysing and understanding human behaviour. Mixing of both forms is done in the study to gain overall strength which is considered to be greater than either quantitative or qualitative research. The core objective of mixed-method research is to provide a complete understanding of the issues and problems related to the research subject.

It is important to apply research approach/es in a research study to serve the objective/s of the study. In the present research study, both exploratory and analytical research approaches have been applied. Exploratory and analytical research approaches explore and analyse the issues and problems of a research subject by doing a detailed study. It is noteworthy that a research study applying mixed methods along with exploratory and analytical approaches has not been done previously on floriculture in Sikkim.

In brief, it can be said from the above discussion that research design deals with the collection of data collection by using suitable approaches and methods. And then the collected data are analysed and interpreted to give valid conclusions. As mentioned above,

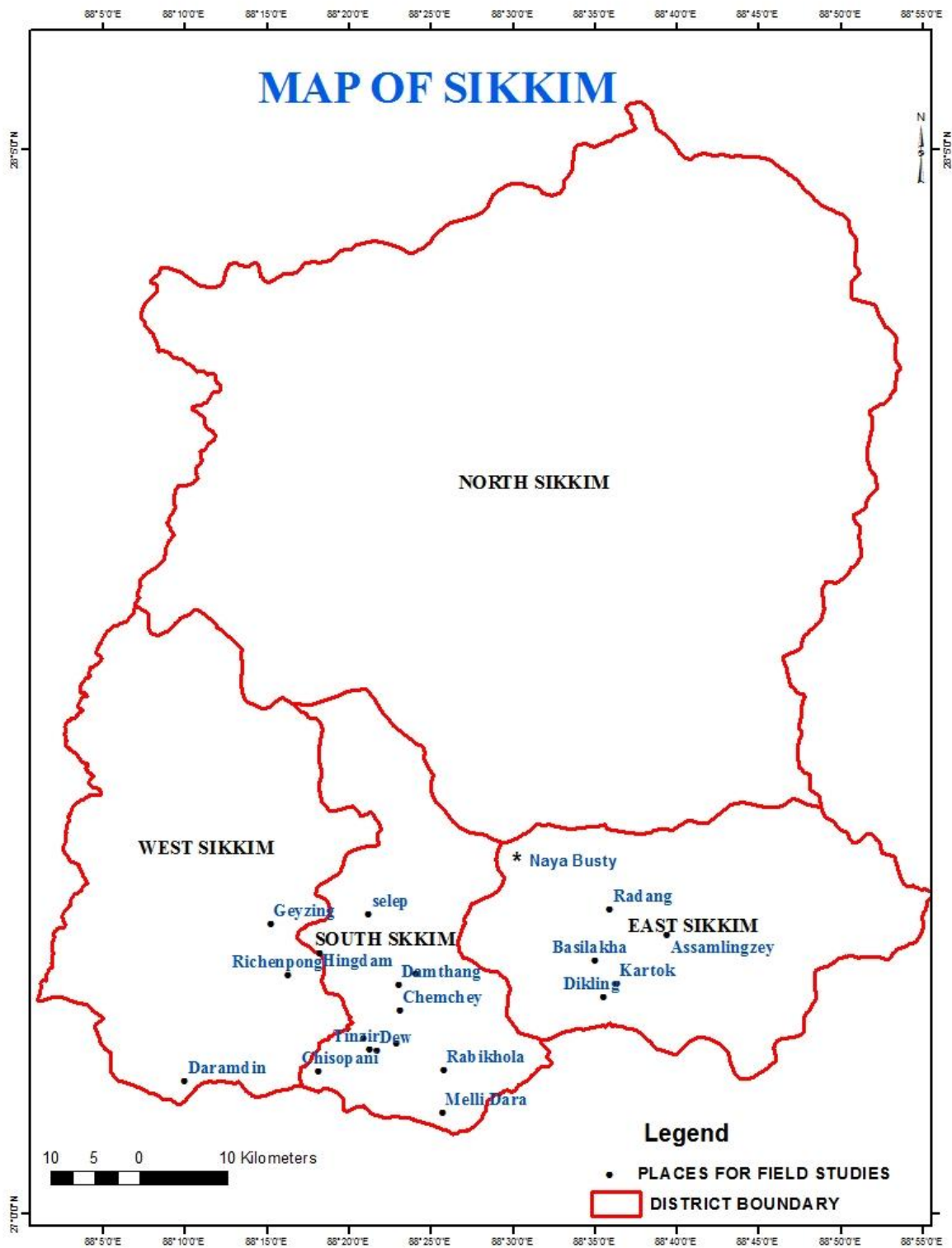
both the quantitative and qualitative research approaches have been applied to collect data and analyse the collected data in the present study. Data have been collected from the selected respondents by doing field surveys and interviews along with observation, case studies were used. Furthermore, both exploratory and analytical approaches have been used in the present study due to the nature of the study. Exploratory in the sense as it intends to explore the impact, influence and consequences of floriculture on the flower growers in Sikkim. It is analytical in the sense as it intends to analyse whether their engagement with this profession has brought changes in their social situations, social structure, economic status, demographic features etc. To realize this analytical work, the needful primary data has been collected by doing intensive fieldwork/field survey in the selected areas by interviewing the selected flower farmers who are the respondents in the face-to-face situation by using a semi-structured interview schedule. The method of observation, one of the oldest techniques which help in studying events, objects or any problem is used, case study a technique through which intensive information is collected from a limited sample has also been incorporated and sampling as a technique for selecting samples (respondents) from the population have also been used to carry out and to understand every aspect of the research study.

1.13.2 Research Area of the Study

Sikkim has been chosen as the field of research for the present study because floriculture is much developed there. The research area includes those regions of Sikkim where the cultivation of flowers is done adequately. The flower clusters situated in Sikkim are also taken into consideration for the study. As floriculture in Sikkim is expanded in a large number of areas in different districts, three out of four districts of Sikkim, East Sikkim, West Sikkim and South Sikkim have been selected. North Sikkim as a district was not considered for some reasons like not many households in the district are involved in

floriculture on a full-time or part-time basis. Data from the Floriculture Department of the Sikkim Government show that no flower clusters are there in the North Sikkim district. The climatic conditions and rough terrain of North Sikkim are also the other reasons why floriculture did not develop there. The Districts of East, West, and South have flower clusters and the geographical/climatic conditions are favourable for growing varieties of flowers for the farmers. Several cluster areas were selected across the three districts of Sikkim which include Assamlinzey, Basilakha, Kartok, Dikling, Naya Busty, Radong from East Sikkim while Chisopani, Gurpisey, Melli Dara, Kamrang, Ravi Khola, Damthang, Tinjeer, Chemchey, Dew, Hingdam, Salep, Simkharka were selected from South Sikkim and Daramdin Valley Geyzing and Rinchyenpong were chosen from West Sikkim where fieldwork was organized. The selection of these areas was done because farming flowers is done in these places extensively. Adding to their advantage these areas are the ones where plenty of water and a suitable climate is available. Also, the availability of local markets is an advantage for the flowers produced in the East, West and South districts of Sikkim. The production rate is much higher in these districts which give the flower growers an advantage in finding markets outside the state too. It is to be noted that the availability of the markets also depends upon the production of the flowers, the higher the production more the chances of marketing in and outside the state.

Fig. 1.1 Location Map Showing Study Areas



1.13.3 Population Size and Sampling Technique

Right now, more than 50000 flower farmers are involved in floriculture in Sikkim. Respondents have been selected from this population. Stratified random sampling (both proportionate and disproportionate) has been used to select the needed number of respondents so that flower growers from each ethnic community get adequate representation in the sample. Different steps are involved in the process of selecting samples which starts with the identification of the population, specifying the sample frame, determining a sampling technique and fixing the sample size.

1.13.4 Sampling Size

A total of 300 flower growers from Sikkim were selected as samples (respondents). 100 numbers of respondents were selected from flower clusters situated in each district of Sikkim namely East, West and South Sikkim by using an appropriate sampling technique.

1.13.5 Collection of Data

Primary data (field data) have been collected through family/household surveys by using a semi-structured interview schedule. The schedule includes both closed and open-ended questions through which quantitative and qualitative data have been collected. The respondents were asked to share their viewpoints on different aspects of floriculture. Some village panchayat members and officials related to floriculture in Sikkim were selected as the informants for the study. Several nursery staff have also been interviewed to collect data to understand every aspect of floriculture in Sikkim.

Secondary data have been collected from secondary sources i.e., official records, periodicals, reports, journals and magazines, published research papers etc. Various secondary data also have been collected from the Department of Horticulture and Cash Crops, Government of Sikkim to get an idea of the status of floriculture in the state. Different books published by the different departments related to floriculture have been

reviewed and necessary data have been collected. Some of the papers or documents by the respective department were unpublished too which also have been considered as the source of secondary data as these have given a lot of valuable information for the present research work.

1.13.6 Analysis of Data

Both quantitative and qualitative methods have been used to analyse the collected data. Statistical analysis is done of the collected quantitative data by doing fieldwork. Analysed data has been shown in tabular and graphical representations. Quantitative methods have been applied in measuring relationships among variables. The data reduction process is used for qualitative data and they have been analysed inductively. A few case studies are also provided to show the perception of floriculturists.

1.14 Significance of the Study

The flower industries seem to have been blooming day by day which has provided the farmers with a ray of hope. Nowadays traditional farming which is considered a labour-intensive profession with less economic return has lessened the interest of the farmers to practice traditional type farming. But with the initiation and development of floriculture in Sikkim owing to the government's initiatives encouraging many of the farmers to shift from traditional farming to commercial flower farming. This may have ignited the interest and passion of flower growers. The present study tries to show the growth of floriculture in Sikkim and its impact on the people, particularly on the flower growers in the state.

Since floriculture, which is a new branch of horticulture provides and creates new opportunities for employment generation and has also emerged as a farmer-centric livelihood. The findings of the study obviously will contribute to the benefit of society through the various policies and incentives implemented and given by the Government.

Although a lot of work has been initiated by the state government, systematic studies on floriculture have not been conducted so far. The proposed study will highlight the present situation of floriculture and floriculturists from a sociological perspective. It will also help the policy framers and the floriculture department of Sikkim to look into the issues and problems pointed out by the flower farmers which create a hurdle/s in the smooth development of floriculture in the state. The study will also uncover these critical areas hampering floriculture in Sikkim which previous studies were not able to explore and need immediate attention.

1.15 Limitations of the Study

- Availability of data was very limited as floriculture is a new avenue in Sikkim.
- The district of North Sikkim has been set aside for the research study as no flower clusters exist there.
- In some of the areas it was a tough task to even take 15 minutes of their time as they were very busy with their household works together with floriculture.
- It was difficult for the researcher to come up with the actual annual income of some of the farmers(respondents) through floriculture as they were hesitant to answer questions related to their income but the issue was solved by making them feel easy by rapport establishment and by mentioning how much it is important to know their income for bringing a better prospect for floriculture in Sikkim. In this way, it was possible to collect needed information systematically with sincerity and within the ethics of research.

1.16 Research Ethics

Ethics is said to be something that is considered to be the moral principle, it also governs the behaviour of a human being. Ethics is considered to be legally and morally right. These are the norms that distinguish between something that is considered to be right or wrong or

acceptable and unacceptable behaviour. Ethics are core to any research process. "There reality is there can be ethical concerns at every step of the research process (Bickman& Rog, 2009). It becomes the primary duty of the researcher to take care of the research ethics at every stage of the research process. "The privacy, anonymity and confidentiality of the participants and data must be given due consideration (Jensen, 2002). Therefore, because ethics are a central part of any research, the present study has been done considering all the ethics that are necessary to be followed by the researcher during the process of conducting research.

1.17 Overview of Chapters

To understand the present study in depth, to have clarity on it, and also to understand its analytical presentation, the study has been divided into six chapters.

Chapter 1: The first chapter includes the general introduction of the research subject wherein an overview of floriculture on the global and Indian levels is highlighted. It then focuses on the research area for the present study, which is Sikkim. The first chapter also includes research objectives, research questions, a review of the literature section, conceptual and theoretical framework, research methodology, limitation, scope/significance of the study, research ethics, characterization etc.

Chapter2: Chapter second designates the demographic and social characteristics of flower farmers. It shows that people from different community have been practising floriculture in different regions of Sikkim. Tabular representations and discussions on the rural and urban divide, age, gender, religion, ethnic community membership etc of the flower farmers have been done in this chapter.

Chapter 3: The third chapter mainly deals with the production and marketing of flowers produced by flower farmers in Sikkim. It highlights some necessities that are required for

floriculture to expand and also talks about flower productivity-related issues. This chapter also discusses the post-harvest management of flowers and the market-related hardships the flower farmers go through.

Chapter 4: The fourth chapter deals with the governmental initiatives (plans and programmes) to promote floriculture in Sikkim. It discusses the various measures and steps that the state government has taken to develop and establish floriculture as a profession in the state to give chances to people who are engaged in this profession to earn and uplift them. The state government through its respective department/s has taken some major steps to develop floriculture as an alternative source of livelihood.

Chapter 5: Chapter five highlights the social and economic impact of floriculture on the flower farmers of Sikkim.

Chapter 6: Sixth chapter is the concluding chapter. It highlights the major findings of the present study and with the help of the findings; some suggestions/recommendations are made to promote floriculture more extensively in Sikkim.