Chapter – III

REVIEW OF LITERATURE

Introduction:
Various scholarly efforts have made to study the agriculture and its marketing through different angles. Studies on economics of production and marketing have attracted the attention of research workers in recent years. Economic research provides information and knowledge needed for the formulation and evolution of economic policies. The estimation of cost of production is one of the fundamental problems of agricultural economics. In India, number of research works have been attempted to study the cost and revenue baatern. It is therefore intended to review the work done by different research workers in the field. Several studies having direct or indirect bearing on the objectives of the present investigation reviewed. In this chapter, an attempt has been made to collect the reviews on different aspects of cultivation and marketing of flowers. These have been presented under different subheads.

3.1 Review of Books:
Pal B.P. (1991) in his book named “The Rose in India” has comments on marketing of rose. He referred that the government undertaking the State Trading Corporation decided to sponsor a project on the export of cut roses to the Western European market. He says many farmers around Pune and Nasik have two main centres in Maharashtra for the cultivation of roses for this trade has found it more profitable to convert their grape and sugarcane holdings in to rose farms. It is an indication of the diversification of the agriculture. Pune and Nasik both are near to Mumbai airport. Due to this, there is a developed flower market.
According to his study, the rose occupies the first position followed by chrysanthemum and carnation. It observed, that the flower trade in India is a recent one but it has immense potential of export cut rose from India to European countries during winter. He pointed roses are being exported from Pune to Middle East countries though in very limited quantities.

**Armitrage** (1992) in the book named “Introduction to Floriculture”, studied various reports and reviewed the production of specialty cut flower. He concluded that specialty flowers were economical in field but not in the greenhouse. He studied detailed guidelines concerning cost of production of field grown specialty flower. According to his observation, any businessperson has ability to make profit, depending upon keeping cost of production down and factors that affect cost included location, size, and managerial skill, and market channel, time of year and space utilization.

He concluded, overall cost might be broken down into variable costs (cost per crop) and overhead (cost per acre). The cost per crop was relatively unchanged regardless of size but cost per acre reduced as acreage increases. He mentioned that, variable cost were allocated to individual crop for material that is fertilizer, seed, plants pots, potting soils and mulch and labour cost including any benefits such as employee compensation, social security, paid holidays and sick leave, and retirement policies. Overhead costs, equipment depreciation, interest, repairs, taxes and insurance are incurred whether crop is grown or not which includes insurance, cost of land, electricity and fuel and management fee.
Sing D.K. (1998-99) carried out a research on cost of cultivation of selected flowers in his study on “Development of floriculture in Uttar-Pradesh”. For this study, four flowers namely gladiolus, tuberose, rose and marigold were selected based on their importance in Uttar Pradesh. Dehradunm Muzzaffarnagar, Harthrus and Meerut were selected for gladiolus, tuberose, rose and marigold respectively. Multistage random sampling was adopted for the selection of sample units. Then, for each district, one block covering a larger area under the flowers was selected, from each selected block; four flower-growing villages were selected as samples. The floriculturists from each selected village were choosing according to probability proportion to size of farms. He worked out the cost of cultivation of gladiolus, tuberose and marigold. He observed that gladiolus is very high profitable flower as compared to the other flower crops.

T.K Bose (1999) discussed about various aspects of floriculture in his book named “Floriculture and Landscaping”. He focused on prospect of floriculture in India. He mentioned commercial floriculture is an activity, which has assumed same importance only in the recent times. In most part of country, flower growing has carried out on smallholding, only as a part of the regular farming system. According to his study Karnataka, Tamil Nadu, West Bengal, Andhra Pradesh, Maharashtra and Rajasthan were the leading states in hi-tech floriculture. He also observed that more than two-third of present floriculture are as under cultivation of traditional flowers like marigold, jasmine aster, rose, chrysanthemum, crossandra etc. The modern day cut flowers with stem e.g. rose, carnation, gladiolus, tuberose, orchid, etc. are growing. The states important for these crops include Maharashtra, Karnataka, Delhi, Haryana,
Uttar Pradesh, Punjab, Sikkim, Himachal Pradesh and Jammu & Kashmir. He chooses flowers like tuberose, rose, etc, as loose flowers as well as cut flowers (with stem) in different region. He mentioned, the domestic flower market being highly unorganized.

Jitendra Singh (2002) in his book “Basic Horticulture” has discussed the concept of horticulture. He remarked, apart from fruits and vegetables floriculture industry in India comprising of florist trade, nursery plants, potted plants seed and bulb product has being observed as sunrise industry. There has been soaring business of flowers in almost all metro cities in India. They observed that developed flower market has been set-up various state in India. In Maharashtra, Mumbai, Pune, Nasik and Nagpur are major flower market cities. He mentioned that U.S.A is the major importer of the flowers across India. He pointed that flora-crops are high value crops. As far as employment generation is concerned, hi-tech floriculture has increased person-days p.a.

Bhattacharji and Chandra de (2003) in their book “Advanced Commercial floriculture” has given information related to traditional and modern floriculture in India. Recently, Indian Government gives incentives to floriculture industry as the part of foreign trade policy. According to this policy Pune, Bangalore, Nasik, Palanpur, Trivandrum, Ooty, Simla and other cities in India have geared-up the floriculture business. They observed that the highest number of small green house units for growing flowers was found in Maharashtra. They mention many problems had been facing flower industry e.g. lack of basic infrastructure, non-availability of pesticides, high cost of production, tax burden, import duty, high rate of loyalty, poor facilities for post harvest handling, poor market information, delay in claiming
subsidies, etc. They observed major constraints faced by traditional flower grower, such as lack of availability of good quality planting material and seeds, lack of adequate storage facilities and transportation, etc.

They suggested, for improvement of the situation of loose flowers those are to arrange supply of better quality planting materials and seed, equip the farmers with better growing technology of flowers, provide financial help to flower growers, provide cheap transport facilities, etc.

Gajanan and M. Sudha (2003) in the book named “Advanced commercial floriculture” have contributed “Production and marketing research on traditional flowers”. In this unit, authors discussed the matter of traditional flower production in India. The area and production of floriculture crops appears to have increased in recent decades. They remark that, there has been a tremendous increase in area under all the major flowers. They have classified the flowers in seasonal and perennial flower. They mentioned that jasmine and rose uses as raw materials for the preparation of perfumeries and used as raw material in dried flower industry.

Authors also commented on marketing channels of traditional flower. They mentioned after review of the studies on flower marketing indicate that more than 60 per cent of cultivators sold their flower through commission agents at the market. They remarked the commission agents play an important role in marketing of the flowers. Farmers prefer to sale with pre-harvest contractors due to high cost of marketing price, risk in the market, need for immediate cash, etc.

They also observed that in case of marigold the share of the producer in the consumer rupee to be around 53 per cent. In Maharashtra, rose cultivators get around
48 per cent of the consumer rupee. He mentioned some problems in production and marketing of traditional flowers i.e. dominance of commission agents, risk in terms of price fluctuation, high transportation cost, lack of organized markets, etc.

**Prasad and Kumar (2005)** in their book “Commercial Floriculture” have stated that each crop has its own science and technology.

Authors also discussed other aspects of floriculture, which is floriculture as a career. He remarked, floriculture has a wide and includes a great variety and diversify of job opportunities. In general, ornamental flowers classified variedly. To the commercial producer or whole-seller or the retailer or flower producer or to the manufacturer or seller or floriculture supplier it is business and to the homeowner it is a fascinating hobby. There are many career opportunities i.e. the production of flowers, the buying and selling of floriculture products, processing of floriculture products, the landscaping of private and public properties and research, teaching and extension phases of floriculture, etc.

**Sudha.M (2006)** contributed “Economics of green house cultivation of cut-rose for export” in the book named “Advances in ornamental horticulture”. Author observed hi-tech floriculture in India is synonymous with the protected cultivation of rose for export though hardly around one per cent of total area under rose was under protected cultivation. Author observed, that initiated with a very high investment of over 250 crore this export oriented production was based mainly in the four major metro polis.

Author shows the global trade in floriculture on one hand was expanding with increasing demand and scope for new entrants like Kenya and India to capture the
market. However, on the other hand Indian growers so far have not been successful in doing so because of the high cost of marketing and high technology transfer costs and failure of technology to local situation leading to low capacity utilization. Author concluded Indian horticulture is yet to be stabilized due to increased capacity utilization and appropriate marketing strategies. Hi-tech floriculture now depicts a high cost, high risk, low profit venture, adoption of suitable measure such as cost minimizing the technology option. Author found one important thing that is diversification into cut flower other than rose is the most important strategy for tapping the potential. Author suggests the changing global trade order in the form of WTO and TRIPS prescriptions have immediate impact on the industry, though the need for institutional and legislative support is yet to be felt.

**Sale and Ganvir (2006)** in the book named “Advances in ornamental horticulture” have contributed “Marketing of cut flowers and potted plants in India. In this contribution, authors discussed marketing aspect of cut flowers. They focus on export-oriented approach of government. According to their opinion, in the post liberalization era, floriculture has been identified by the government as one of the major thrust areas for export. They pointed the earnings have increased, the area has increased, the prices of flowers being remunerative, the returns in flowers are high.

They reviewed marketing channels and identified the four important types of marketing channels for the cut flower trade. First cultivator–packer-wholesaler–retailer–consumer, second is cultivator- packer-retailer–consumer, third is wholesaler–retailer–consumer, and fourth is cultivator-consumer those are various part of the India.
They analyzed market margins that showed the producer gets only 40 paisa from the consumer rupee. They recommended that the floriculture industry needs modernization and Government of India can help in creating more facilities in the form of various infrastructural facilities.

**Manohar and Igathinathane (2007)** in their book “Greenhouse Technology and Management” have discussed various aspect of greenhouse production economics, such as capital requirements, production economics and the condition influencing returns, etc. They have observed that the cost and returns of protected agriculture vary greatly, depending on the system used the location and the crop grown. They find out, that greenhouse agriculture is most intensive system. Year round greenhouse crop production is therefore much more intensive than seasonal use of mulches and raw covers.

They observed, the fixed capital cost for greenhouse clearly exceed those of other systems of protected agriculture, but vary in expense according to the type of structure and environmental control and growing system. The operating cost and fixed cost are annual expenditure and these can be substantial. Annual cost may co-relate to some extent with capital investment. They concluded greenhouse production system might be far more expensive than open field system.

They observed production economics considers the various components of fixed and variable cost. On an average basis, wages account for approximately 85 per cent of the total variable cost. Wages are in the greatest expenditure in green house production followed by amortization cost and energy costs. They suggested, the green house system economy could be improved, where labour can be more efficiently
utilized, low cost capital will available, some management and marketing skills will available.

**Somani L.L (2009)** in his book „Cut Flower Industry“ has given information regarding cut flower industry. According to his study, floriculture products have been rising all over world and traditional consumption markets in United Kingdom, Japan and Europe are becoming more critical. He pointed that commercial transaction system also expected to change with added role of information technology. He observed, after studying world floriculture challenges that need to addressed are enhanced production and flow of products, which depend upon specialized organization with efficient purchasing process and logistics backed by information technology to meet the challenges in changed economic circumstances.

He mentioned floriculture would expect to grow well but have many challenges and advantages of the growth, which can harnessed only with well-planned strategies. He noted that India has excellent infrastructure for research, only visualize the need and put all the efforts in the right direction. He says hopefully the India has no doubt with their capable scientists and entrepreneurs added with Government support, floriculture would progress dynamically.

**RituGarg and Sharma J.L. (1999)** point out that flower crops are high intensive skilled labour. This problem becomes major constraint for flower cultivation. Punjab agriculture university, Ludhiana and state Deportment of Horticulture, Punjab no doubt are arranging training courses for farmers. But farm labourers engaged in flower cultivation are also required to be trained in production technology of flower crops. KrishiVigyanKendras of state agriculture universities set
up at district level can organize short term training courses in flower cultivation for farm labourers especially in the flower growing areas of the country.

Singh R.B, Prasad R.N, Nigam H.K (1997) say that flower cultivation has great potential for increasing income and employment of the farmers. It needs to be encouraged for the benefit of the farmers by providing them necessary production inputs and marketing facilities.

Gill A.P.S, Dhiman J.S, Kushal Singh (1988) point out that the cut roses are in great demand during winter and they fetch high prices. It is essential; therefore, that regular supply is maintained to meet their market.

Chahal S.S. and Amandeep Kaur (1998) view that lack of awareness among the farmers about existence and benefits of selling the produce was also a major constraint.

Pathania N.S., Subodh Chander (1998) say that government regulations for export/ import are too time consuming and not in favour of export. Indian exporters are not subsidized by the government. Absence of market surveys, lack of stream lining of quality control mechanism and poor co-ordination between government agencies involved in export/ import of potted plants. There is an acute shortage of qualified and trained staff in floriculture.

Joanna Liddle (1988), evaluate in his article that the adequacy of the data on employment activity for an understanding of women's work. It looks at how men and women are distributed in labour force in India and how far the sexes are segregated into different types of work. Finally, the article examines the particular characteristics
of women's work in India, and looks at how these differ from the distinctive patterns of women's work in the West.

Literature on street vending can be categorized into four groups. One kind of literature follows and expands the political economy perspective through an examination of the meaning of street vending, and an analysis of vending as an expression of motherhood (Babb, 1989, Horn, 1994).

**Opoku (1998)** depicts that street trade in Africa is an activity for women, men, and children. However, women dominate the trade. Most vendors are aged between 20 and 50 years, with few traders falling below 20 years or above 50 years. Children as young as ten years of age have been found vending along streets and roadside. Some of these children assist their parents and relatives, whereas in some cases they are entrepreneurs in their own right. In Ghana, child labor is estimated at 28 per cent. Accra and other urban centers were street trade is active accountant for 12 per cent of child labor.

**Charmes (1998)** stated that those dealing with street vendors are often concerned about whether street traders are doing their own businesses or are hired by others. In Kenya, the new breed of street vendors who sale expensive electrical equipment and leather products has often attracted attention. Most of these new breed of vendors are agents of formal firms and sell on commission. Charmes argues that street vendors might not be as independent as they appear. They may purchase or hire the goods they sell from the same supplier; they may be given goods by the supplier who pays more or less the equivalent of salary. However, all street vendors are informal workers and are exposed to similar problems.
According to Alila and Mitulah (1999) studied the policies applicable to street vending in most urban areas of Kenya owe their origin to colonial period and have hardly been reviewed. Most traders do not know the regulations, although officials of street vendors associations were found to be comparatively aware of the regulations. However, they observed that in many cases, the urban authorities act outside the regulations. They noted that while urban authorities require street vendors to maintain cleanliness of trading sites, they provide no service. Street vendors are not provided with services such as provision of water, storage facilities and garbage collection. They further observed that there was laxity among public health officers, and yet street vendors are able to observe the regulations.

Misra R.L and Pathania N.S. (2000) pointed out that flower consumers in India are now become quality conscious, demanding flowers grown under protected environment. Out of 160 export orient units registered; only 70 are in operation, mostly of roses, the area under protected cultivation being about 150 hectors. The average cost for one acre protected area comes to Rs.40 lakhs to 2 crores (low-tech to high-tech) under Indian condition.

Subba Rao P. (2000) viewed that Rose can be cultivated on open lands. When cultivated under controlled conditions in a greenhouse, they show the best quality attributes required for the export market. Therefore under hi-tech conditions, greenhouses are constructed with especially prepared polythene sheets.

Sharma (2000) has discussed development activities of floriculture and credit support in his article on "NABARD?s role- credit support to floriculture" He mentioned "NABARD" has sanctioned the several scheme for floricultural
development. He observed major emphasis has given to floriculture under controlled conditions. The states, which are contributing a lot of floriculture, are Maharashtra, Andhra Pradesh, Karnataka and Tamil Nadu. NABARD has much refinance to floriculture project. The bank has contributed in a very big way to improving the export earning of fresh flowers by the sanctioning of export oriented project in cut flowers.

He observed, "NABARD" has been playing very important role regarding refinance facilities to floriculture unit which are, to arrange periodical meetings with concerned research institutions or bankers, to circulate the model schemes of different types of flowers, to publishing the quarterly document entitled "Technical Digest"- Research result, holding experience and sharing dialogue with bankers. He also observed the constraint in financing floriculture project i.e. import of varieties and technologies increase the project cost, lack of cold storage facilities at airport, inadequacy of air cargo space, delay in clearance of import of exotic plant and seed materials.

Sergio Pena (2000) explained the limitations and constraints of government policy makers in the regulation of street vending. Looks at ways that street vendors in Mexico City create alternative forms of regulation that complement and challenge the state's attempt to impose a "one size fits all' form of regulation for the national economy. Cites two distinct forms of regulation and how these respond to the different needs of vendors depending on their ability to negotiate their status with the state. Covers the organizations which the vendors have formed to assist them and question the "Mafia" status applied to these by the establishment.
Stein Inge Nesvag (2000) presented findings from a case study looking at African medicine vendors in Durban, South Africa. He compares the culturally repressive apartheid period with the post-apartheid explosion of self-realization of the African population. The findings of the study shows that street vending is still seen as an eyesore and a problem but still plays an important role in the post-apartheid era as a form of resistance to simplistic African policies.

Ray Bromley (2000) provided a general contemporary overview of street vending around the world, focusing on the major issues underlying its permanence as a phenomenon, and the ambivalent attitudes displayed towards it by governments and off-street business communities. He focuses on street vendors as an occupational group and includes arguments for and against their existence, the impact of their geographical and economic location, and role of the government.

John Cross (2000) stated that street vendors, modernity and post-modernity: conflict and compromise in the global economy explores street vending within the context of the shift from modernism to postmodernism, suggesting that the former implied crackdowns on the trade because of the ideals of public order and control whilst the latter is more open to such methods. Questions whether this new approach brings fresh dilemmas for the informal sector. He proffers the idea that the policy makers should allow deregulated sectors of informality in the economy to function as incubators for new industry.

Kehar Singh and Virendra Singh (2001) pointed out that commercial cultivation of damask rose in India dates back to Mughal times. However, its cultivation has remained restricted to some part of Uttar Pradesh, Rajasthan and
Jammu and Kashmir. In India about 4,000 hectares are presently under its cultivation; and a part of its harvest has been used for producing about 200 kg oil annually. Rose water is the major produce made from this plant. It has been found that mild temperate climate of western Himalayas, including Shivalik hills is the best for its cultivation.

**Dadlani N.K.(2002)** says that to improve our profitability, the grower also needs to relate information about consumers to their floricultural products. Flowers and plants in several markets are considered another consumer good. In order to benefit from the growing trade, we need to understand national lifestyles and consumption patterns. The flower consuming population needs to be grouped into international lifestyle segments and appropriate marketing strategies developed.

**Ashok Dhillon and Khatkar R.K. (2003)** pointed out that flower cultivation is popular in Hariyana due to fast changing social scenario. The area under commercial flower cultivation has gone up 0.6 thousand hectares in 1990-91 to 2.5 thousand hectares in 1998-99. The earning per hectare ranged between Rs. 50 thousands to 2.5 lakhs depending upon the nature, quality and yield of flowers. Glodiolus, rose, tuberose, marigold and chrysanthemum are the main flowers taken up for commercial cultivation. Keeping the above facts in mind, the study was undertaken to estimate the area and production of flowers grown in Haryana.

**Vinod Kumar and Bhattacharjee S.K. (2003)** pointed out that ornamental crop culture is fast emerging as an important and innovative dynamic global enterprise. Floriculture has become a potential money spinner for the third world countries, since it is one of the most lucrative professions, having much higher potential of return per unit area than most field, plantation and horticultural crops. The
ornamental crop industry is worth about US $ 60 billion. The world market has been growing around 12 per cent each year.

**Sindhu S.S. (2003)** viewed that the rapid commercialization in agriculture, floriculture sector has been considered as fast growing industry in India. An area of 4,000 hectare during 1962 has tremendously increased to 88,600 hectare during 1999-2000, with an annual turn over of Rs.500 crores. Cut flower industry is not only an attractive business but it is a profitable venture if approached rationally the world over.

**SatyaSundaram I. (2003)** pointed out that India is a leading grower of roses. Karnataka continues to be the leader, accounting for over 50 per cent of the natural rose production. Bangalore has around 35 floriculture units producing roses. Flowers are transported either by bus or by air. The individual companies are able to realise 20 to 25 per cent higher prices.

**Mishra A.K., Mishra L.N. (2004)** pointed out that floriculture is one of the major blooming fields of agriculture. In 21st century, this sector is posed for greater significance. The present position of our floriculture industry is not satisfactory. Lack of information and existing gap between institution and farmers to get technological know-how strike a major cause of existing setback in this industry. An effective transfer of technology calls for a close interaction among farmers, production environment, research organisations, extension system etc. There is a wide gap between production potential and actual production. The technological constraints as well as extension constraints are the reasons behind handicapped floriculture industry.
Therefore to improve this industrial sector in India, there is an urgent need of application of internet and other infotech services in this field.

Sarker, Debnarayan and Chakravorty, Sanjukta (2005) for diversification in agriculture, one of the areas that have emerged as a fast growing sector recently in West Bengal is floriculture. In an attempt to examine empirically the relative efficiency between commercial traditional floriculture and its competing main field crops - Paddy, Jute, Potato, Wheat, Groundnut, Mustard, this paper observes that the economic efficiency related to both individual flower crop farming and mixed crop farming of all categories maintain high economic efficiency for farms provided that selections of crops are made properly. This study does not imply an orderly marketing system for some categories of major commercial flower crops - rose, tuberose and bel - produced in alluvial zone in West Bengal, because the farmer - producers' interest for fair price of these flowers is not supported to their growers during lean season. While examining the efficiency of flower marketing system, this paper does not support that the flower market in alluvial zone of West Bengal is efficient in nature, but, in general, marketing efficiency decreases with the increase in number of market intermediaries in a marketing channel.

Dr. Saswati Bose, Research Officer, Niam, Jaipur (2009) Karnataka is a major floriculture State in the Country and has the highest area under modern cut flowers. The country's first flower auction centre is located in Karnataka. On the export front, its performance has been commendable. However, the growth within the state has not been uniform across the districts. Some districts/regions have been dominating in the coverage of area, production and productivity and some have lagged
behind in the cultivation of flowers. Though floriculture is flourishing both in India as well as in the State, it has not made any remarkable breakthrough in the domestic and international floriculture markets due to various constraints. Therefore, an attempt has been made to identify the underlying issues impeding the entrepreneurship development potentials, study the problems and prospects of this sector and also suggest appropriate measures for improving the floricultural industry. Since Karnataka is one of the leading States in floriculture in the Country with tremendous potential, it has been selected for the present Study.

**Garg and Sharma (2000)** worked out economics of marigold in their article “Economics of Marigold Flower Cultivation in Punjab”. For this study, they choose three major district of Punjab states i.e. Patiyala, Ludhiana and Amritsar, 12 flower growers were selected. Their result was in pooled data, gross returns from this crop in one-hectare area were Rs. 97,581.69.

Cost A was Rs. 36,989.21 and returns to this cost, i.e. returns to owner were Rs. 66,592.98. The cost B was Rs. 38,498.92, return to this cost i.e. return to family labour was Rs. 47,870.27. Cost C was Rs. 55,864.44, and return to this cost was Rs. 41,717.25, which represents the net returns to this crop in pooled data on per hectare basis. Marketing cost worked out to be Rs. 3,900 per hectare, which contributes 7.08 per cent of total cost and transportation cost contributes 0.19 per cent of the total cost.

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states, which are contributing a lot of floriculture, are Maharashtra, Andhra Pradesh, Karnataka and Tamil Nadu. NABARD has much refinance to floriculture project. The bank has contributed in a very big way to improving the export earning of fresh flowers by the sanctioning of export oriented project in cut flowers.

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Mahale (2002) has given information about development of floriculture in Maharashtra in his article entitled “Floriculture Development in Maharashtra”. He studied 188 projects with an area of 33.5 acres under gerbera and 40 projects with an area of 9.75 acres under carnation. He observed average size of each unit is 500 m2. According to his study, Pune, Sangli and Kolhapur are major developed district as far as concern to hi-tech floriculture. He found, the profit on gerbera cultivation (500 m2 Units) comes to Rs. 0.15 lakhs during first year and Rs. 1.44 lakhs in the second year. There was a loss of Rs. 0.56 lakh in first year in carnation, whereas there was a profit of Rs. 1.40 lakhs in second year.
He concluded that, gerbera and carnation project achieved break-even of the project during second year and project can earn profit in subsequent years. He also observed the major constraints of small greenhouse floriculture units i.e. high cost and problem of getting planting material, difficulty in getting bank loan and subsidy, genuine and timely market information, etc.

Ramkumar and Ajith (2003) in their article “Dry flower production and export” have given importance, economics and marketing. They expressed, dry flower industry is important as far as concerned to fluctuation of price level. There are flowers near natural dried, preserved and processed which is cheaper year round availability of raw material, reducing transport cost, dried arrangements are time savers and these suit the modern times, not dependable on weather.

They say second aspect of importance is labour intensive industry. India has a share of 10 per cent of the total global dry flower market. This business can run with small size. They worked out economics of dry flowers. It shows that the entrepreneurs can earn 100 per cent net profit by selling floral craft items made out of dry flowers. According to their study, if the floral craft item cost Rs. 1 it can be sold at Rs. 2 They recommended, this specialized industry needs special attention and encouragement by the government.

V. Bhanumathy and K. Sita Dev (2003) analyzes the marketing cost, margins and producers share in consumers rupee in their research project, An Economic Study of Marketing Cost, Margins and Price Spread of Jasmine in Chidambaram Taluka of Cudalove District, Tamil Nadu”. Chidambaram taluka selected purposively for the study of marketing aspects of jasmine based on the area
and production of flowers, one block was selected, and similarly five villages were selected randomly. Sixty farmers growing jasmine flowers were selected by probability proportionate method from these selected five villages. For collection of information pertaining to marketing aspects, 15 commission agents cum wholesalers and 15 retailers were selected at random. The pre-tested schedule was used to collect data through survey method. This study was related to the agricultural year 2000/01. The study analyzed that the commission agent cum wholesalers were playing very crucial role in jasmine flower marketing. The main marketing channel identified the study area were producer-commission agent cum wholesaler-retailer-consumer. In this study price spread analysis indicated that the producer received a gross price of Rs 650 per quintal. His share in the consumer’s rupee was 45.65 per cent. Marketing cost accounted for 22.80 per cent of consumer’s rupee including costs incurred by farmer and 31.55 per cent of consumers rupee was marketing margin for intermediaries. As a result, the study concluded that there is a need to regulate the activities of the intermediaries by establishing a co-operative market for flower marketing. All the growers are also of the view that there is a need for the government intervention in the form of minimizing or fixing minimum commission charge and establishing co-operative market, so that it will be more beneficial to the producers as well as consumers.

Singh (2007) in his article “Greenhouse for small farmer” has given idea about greenhouse technology. He stated that, greenhouse is capital-intensive project, hence it requires outside borrowing from banks and financial institutions. He observed the performance of some hi-tech project was not satisfactory. He found the cost of project
worked out to Rs. 160 lakhs/hectare for cut roses; these projects are not suitable for small farmers. The cost of greenhouse constructed with galvanized steel for an area of 500m² works out at 4.5 lakhs for plain area and hill area, the cost of tunnel constructed in 500m² was Rs. 5.13 lakhs inclusive of working capital.

He observed the return per unit to farmers in floriculture varies with crop, area and location. He estimated the net earnings from the permanent greenhouse of 500m² area comes to Rs. 75,000 to 80,000 after appropriating interest and depreciation, he assumed the fact that labour shall be undertaken by the farmers themselves. The problem experienced that, growers do not get back the money in time. He mentioned in case of small farmers, wholesale florist collect the flowers from household through commission agents and sale them in metro centers. Wholesalers / agents charge lucrative commission from the farmers. Author suggested that there is need to maintain record by farmers.

**H.P.Singh and R.C.Upadhya1 (2007)** in their article “Exploring Floricultural Potential” have given data concerned to Indian Floriculture. They remarked that the scope of floriculture in India has been increased tremendously which is evident from the increase in area from 53000 hectare in 1993-94 to 106,477 hectare during 2001-02. There is 100 per cent increase in area, 230 per cent increase in loose flower production, and 480 per cent increase in cut flowers production. They point out the floricultural export have taken a quantum jump in the last decade from Rs. 14.45 crores in 1991-92 to 249.50 crores in 2003-04.

They have also given data of export. The floricultural exports registered a noticeable growth during last decade. The floriculture export that stood at Rs. 63
crores during 1996-97, almost tripled to Rs. 211 crores during 2004-05. The overall exports of floricultural produce from India soared to Rs. 304.69 crores by end of 2005-06 from 180.77 crores. They have observed some export constraints i.e. non-availability of planting materials for international market, lack of technical knowledge for climatic controlled greenhouse, infrastructural problems, uneconomic size of the units, etc. They also observed that the domestic consumption of loose flowers has been increasing. They remarked protected cultivation is in limited area (5% of the total crop area) its contribution to total floricultural export is significant.

**Barreto and Jagtap (2009)** in their article, “Get quality bloom of gerbera in greenhouse” has given information about cultivation of gerbera. They observed a well drained, rich natural or slightly acidic soil is most suitable. The temperature in greenhouse should maintain at 12-32 0 C. The cultivation of gerbera in pots is more economical than in beds. If plants are, infested whole pot will be replacing. They suggested that the N.P.K dose should give at initial stage with 15:15:15: and in second stage with 19:19:19. They also given idea about application interval, quantity of water, fertilizer etc., they recommended intervened pest management and one spray of neem.

They observed, the malformation in gerbera flowers like bull”s head, incomplete opening of petals and stem break are most common problems faced by its growers. They hunger signs in gerbera help keep a proper check various growth stages and supervise change in fertilizer dosage. They remarked timely intervention is crucial for successful production of gerbera in open ventilated green house.
Singh A.K (2009) has given information regarding construction of green house in respect of rose production in his article, “Greenhouse Technology for Production”. He mentioned that Pune and Bangalore where climatic conditions are mild throughout the year, green house with natural ventilation suits very well. He observed in Delhi and Hyderabad where summer temperatures are above 42 0C cooling mechanism is essential. A sealed green house with a fan and pad system of cooling is very appropriate in winter there is low temperature in New Delhi. Hence, the cost of construction per unit area is higher in Delhi and Hyderabad. Besides initial investments, maintenance cost for such structure is also high due to high-energy input.

He has also given the information of types of greenhouse. There are several types of greenhouses, namely gable, tunnel, gothic arc, flat arc, gambrel, etc. each type has its own merit. The selection of particular design is governed by climate and cost. He suggested the green house should be constructed with due consideration to adequate structural design confirming to the given locations and guidelines for selection and installation of different greenhouses need to be consulted. He has given the details regarding rose production in greenhouse. He also comments on harvesting and post harvesting management.

Singh H.P. (2009) in his article, “Prospects of diversification in floriculture” has discussed about traditional and hi-tech flower cultivation. He says the domestic consumption of loose flowers especially of marigold, China aster, jasmine, crossanadra ballerina etc., has increased tremendously. According to his study, area under traditional flowers has increased significantly (790%) of total flower crop. He recommended there is requirement of research development i.e. high yielding
varieties, year round production and promotion of crops etc. He remarked that protected cultivation of flowers is in limited area that is only 5 per cent of total crop area. The major hi-tech units are growing roses, but can be diversified into orchids, antherium, gladiolus and tuberose.

**Tomar and Sing (2009)** in their article “Marigold for year round livelihood” give importance of marigold as loose flower. This is highly suitable for cultivation under different agro climatic conditions. It is free flowering, short duration, and providing attractive colored flowers in good shape, size and keeping quality. They mentioned that to get maximum return from its cultivation its scientific cultivation needs selection of suitable varieties, quality seed, health nursery raising, adequate plant population and other cultural practices.

They suggested selection of variety should be according to climatic conditions, field should be leveled, free from seasonal weeds, normal fertility and adequate facility of drainage is essential. They suggested 6-8 beds of 3 meters length and 60 cm width are sufficient for raising nursery for an acre. They also gave idea about manures, fertilizers, weed control, pinching, spacing, irrigation, etc. Authors have informed about management of diseases and insects. They estimated the net return (per hectare) from winter, early winter and summer crops comes to Rs. 40,000, 60,000 and 90,000 respectively.

### 3.3. Review of Government Reports:

Central Government appointed some committees while some study group appointed by agricultural universities as policy matter of State Government. These committees and study groups appointed with the purpose to study the problems and
prospects of floriculture. These committees and study groups submitted their reports with recommendations and facts which given as below.


- Establish floriculture development areas for domestic use and export.
- Strengthen and establish infrastructure for research, training, extension, production and propagation and post harvest management.
- Intensify need-based research on protected cultivation of flowers;
- Import Germ-plasma of improved varieties of commercial flowering crops.
- Generate planting materials through tissue culture.
- Organic training on advance research and production of commercial flowers.
- Relax the import policy and customs duties for imports required for green houses production.
- Establish National council of floriculture and state floriculture committees as policy formation bodies and
- Increase the budget allocation for floriculture by both Central and State Government.

**Kausar and Haider Study Report (2000)** In this report, “Floriculture sector—“Maharashtra Scenario” has given information of development of floriculture in Maharashtra. This report says Pune, Nasik, Satara, Sangli and Kolhapur are the major floriculture unit district of Maharashtra. Around Pune and Nasik, there are situated corporate units, which are capital intensive and large scale as well as export oriented. Pune and Nasik both are only 200 km away from Mumbai having international air and
seaport. Both districts have good natural resources and available technical, skilled labour for horticulture. Pune is also good inter-state market. Due to this factor, there is much diversification in agriculture.

Report says Sangli, Satara and Kolhapur are hi-tech flower growing districts with small floriculture units. There is good population of greenhouse units. Most of flower growers have small greenhouses about 5000 Square fit area in size. There are also set-up co-operatives for floriculture development. They observed that flower growers face biggest problems in transporting and marketing, less of transport facilities is the main problem. Reporters have suggested that for open cultivation of flowers, availability of good sunshine fertile soil, water, cheap and skilled labour provides many opportunities to cultivate flowers on the open land.

Mrs. Poonawala Committee Report (2001) The report entitled “Floriculture current status, vision and action plan “prepared by a subcommittee set up by scientific advisory committee to the cabinet. Mrs. L.F.Poonawala was the chairperson of the subcommittee. The report says looking at the challenges ahead, it is necessary to encourage a national level development agency exclusively for floriculture. Such agency should promote growth of domestic as well as international market, scientific cultivation, and organic farming co-ordinate research and regulate marketing. Report says India”s share in the international market was only 0.2 per cent. However, during the last ten years taking advantage of incentives offered by the government, a number of floriculture units were established in India, for producing and exporting flowers to the developed countries. However, several of the units are at present not working. The
major reasons for their failure were lack of experience, inadequate research support, inadequate market knowledge and infrastructure and procedural problems.

The committee has recommended unnecessary procedures hampering export business should be removed, assistance for market development, provision of infrastructure, reduction in interest rates by banks, focused research on key area. Report says the units for branding, grading, packaging, transporting, quality control, supply assurance development, would adopt such an approach. Report says, there are many mistakes committed in the past for the promotion of floriculture activity, a number of units made a false start and have become liability. Report suggest, the challenges now are to consolidate these lessons, remove obstacles, take critical policy decisions and let the floriculture activity forge ahead.

3.4 Review of Theses and Dissertation:

Barawkar (1998) studied “Marketing of cut flowers in the Mumbai market.” The main objective of his study was to estimate cost of marketing. He concluded that in the cost of marketing, share of transportation cost was the maximum followed by commission of intermediaries (15%). In the winter season, all flowers fetched highest prices due to higher demand. In gerbera flowers only one channel was active in distribution of flowers, namely producer–wholesaler cum commission agent–retailer–consumer, whereas for rose, gladiolus and aster three channels in trade of flowers.

Tilekar (2000) studied “Price analysis of cut flowers produced around urban areas of Western Maharashtra” . To estimate cost of marketing and cost of cultivation were objective of his study. He estimated the cost of cultivation of roses, gladioli, aster, daisy, and tuberose which shows in table 2.4. He estimated that the
average cost of marketing of rose as cut flowers produced in open cultivation was Rs. 1.41 lakh per hectare. Among the several items of costs, commission of the traders got the maximum share of 48 per cent. The cost of transport formed 39 per cent, which was around Rs. 55,000 per hectare. Cost of packaging and producers other expenses were comparatively very low. The cost of marketing of tuberose cut flowers produced in open cultivation was very high Rs. 1.01 lakh per hectare, gladiolus, aster and daisy was comparatively very low costs. In all the flowers, the cost on account of commission of traders was more than 60 per cent of the total marketing cost, except for rose.

The cost of marketing of gerbera cut flowers produced under green house of 0.05 hectare, 0.10 hectare and 0.40 hectare was Rs. 0.50 lakh, Rs. 0.93 lakh and Rs. 37.2 lakhs respectively. The various items of cost of marketing, commission of agents share nearly 50 per cent while grading, packaging, and transportation formed equally. The cost of marketing of carnation as cut flowers produced under green house of 0.05 hectare, 0.10 hectare, and 0.40 hectare was Rs. 0.56 lakhs, Rs. 1.17 lakh and Rs. 4.87 lakh respectively. Due to high risk, the share of commission agents is comparatively very high that is 66 per cent of total marketing in comparison of gerbera, the average cost of marketing were higher for carnation.

**Bhegde (2002)** carried out „Economic analysis of production and marketing of selected cut flowers grown under small size green houses in Pune district.” Main objective of his study was, to estimate cost of production of cut flowers.

He estimated that the average per green house cost of production for 0.05 hectare sized green house in case of gerbera, carnation and rose cut flowers was Rs. 106.
2,00,450 Rs. 2,23,820 and 1,85,666 respectively while for a 0.10 hectare size greenhouse, the corresponding cost was Rs. 3,78,497, 4,38,460 and Rs. 3,59,210 respectively.

The cost of marketing found maximum in the case of gerbera cut flower producing farms Rs. 60,000 and Rs. 1,00,000 for 0.05 hectare and 0.10 hectare sized greenhouse respectively as compared to that of carnation and rose cut flower producing farms. In case of all the cut flowers, the average prices received during the monsoon season were the lowest, while in winter they were the highest.

**Ghatage L.N. (2002)** carried out the “Economics of greenhouse in Kolhapur region”.

He mentioned Kolhapur and Pune is the most developed region in the sense of greenhouse culture. He also tried to express the views of greenhouse beneficiaries in various aspects. That is general information of the respondent, information regarding greenhouse scheme, management of greenhouse of beneficiaries, production cost of greenhouse holder in Kolhapur region, information in respect of subsidy given by the government, production and marketing of greenhouse produce and various problems faced by the greenhouse beneficiaries in the study region. He conducted a survey of 45 greenhouses. He remarked that there are most of small size beneficiaries.

He observed that, greenhouse growers used both type of fertilizer that is organic and inorganic. He also calculated the construction cost of greenhouse and observed that there is high cost of construction. As regard to earning, he calculated the income from gerbera is more than the other cut flowers.
He analyzed the benefit cost ratio of greenhouse produce and finds out, majority of greenhouse grown the flowers in the study region and beneficiaries has select mostly GH-I type greenhouse. He observed various problems which facing by green house holders i.e. lack of technical information, lack of marketing information, price fluctuation, transport facilities, less availability of skilled labours, etc. Finally, he recommended various types of solutions. He suggests there is need to establish co-operative societies by greenhouse holders. He expected from government to reduce the tax on green house material. He suggested it is necessary to provide them proper information of guidance.


For this study, he used the survey method to covers the cost of production, marketing functions, etc. He selected the area as per higher proportion of marigold production in Pune district. He classified the cultivators based on holding size. For each class equal numbers of marigold growers were selected from selected six villages. Thus, the number of Marigold growers was comprised of 90 sample cultivators. Each class having thirty samples He also selected the marketing components and given interview as well as discussion with them and collect the information regarding activities. He used the standard cost concept for analyzing the data; he adopted functional analysis method of Cobb-Douglas function. Cost of cultivation in different size group of holding of marigold were observed, at the overall level the per hectare cost of cultivation of cost “C” worked out to Rs. 15,960.78. The
cost “A” contributed above 50 per cent of the total. He observed the share of rental value of land in the total cost was about 20 per cent at overall.

He concluded that marigold was highly labour intensive crop. The packing of flowers need to be carried out early in the morning and evening hours. Therefore, it needed practice of using possible family members for operations. In terms of producers share in consumer’s rupee, producer had a share to the extent of 66 per cent in the consumer’s price and other 34 per cent share was marketing components. This research on marigold should be strengthened to evolve high yielding varieties and technological knowhow contributing to enhancing productivity of the crop.

Shinde K.B. (2004) studied cost and revenue approach in his thesis entitled, “Economics of production and marketing of tuberose in Pune district”. To estimate cost of production and to recommend suggestion for improvement of cost of cultivation were objectives of his study.

For this study, he chooses one tahsil of Pune district. According to stratified random sampling, he classified villages and cultivators. He got the average size of holding was 10.47 hectare. He found average per farm value of investment in various farm assets owned by the tuberose cultivators was Rs. 1,47,633, Rs. 3,98,208 and Rs. 500,055 in small, medium and large size holding, respectively. He found per hectare use of human labour was 141.99 days. He observed per hectare overall cost and cost C worked out to Rs. 12,334.27 and Rs. 27,958.23 respectively. He found the major item of cost was the planting material (13.92%). According to his study, the total cost of cultivation in different size group of holdings was Rs. 26,890 Rs. 20,046. Rs. 28,760 in small, medium and large size groups of holding, respectively. He concluded, the
overall level the cost of production was Rs. 27,958.23 cost A was 35.80 per cent and cost B was about 82.85 per cent. He remarked that cost of production was highest in large sized farms followed by medium and small size group of holding. He suggested for improvement of tube rose cultivation that is government should fix the support prices as well as ceiling prices and second one government take steps to regularize the transport charges.

**Jethendra B.K. (2007)** carried out comparative analysis of both type of cultivation of rose that is open and protected condition in his thesis entitled, “Comparative study of Hi-tech and field rose cultivation around Bangalore city”. To estimate cost of cultivation of cut rose flower under green house and open field, to estimate the marketing cost and to study the constraints, were the objectives of his study. In this study, purpose of analysis cultivators selected from villages of hi-tech and field rose and grouped into three categories based on their operational holdings. For hi-tech, grouping was done as small farmers (holding up to 0.05 hectare) medium farmers (0.05 to 0.10 hectare) and large farmers (above 0.10 hectare). For field rose, groups made as small, medium and large, i.e. up to 2.00 hectare, 2.01 hectare to 4.00 hectare, above 4.01 hectare respectively. Thus, total sample of 60 rose growers were selected randomly. The sample under hi-tech rose cultivation was made homogeneous by removing some of the more different samples.

In this study, he observed in hi-tech cultivation as the overall level, the average size of farm was 3.24 hectare. It was 1.65 hectare in small, 2.52 hectare in medium and 5.56 hectare in large size groups. The overall per hectare use of human labour in hi-tech was 5778.66 person-days. In field rose, it was 645.00 person-days. For the hi-
tech per hectare use of fertilizer worked out to 1797.33, 3087 kg 2514.33 kg N.P.K respectively. He also observed labour utilization for hi-tech in different size groups of farms revealed that about 60.98 per cent of male and 52.34 per cent of female labour of total labour force was hired and about 39.32 per cent of male and 47.66 per cent of female labour of total labour force were from their own families.

He determined the cost of establishing hi-tech rose garden was Rs. 5963.38 thousands, building and green house structures constituted 57.50 per cent of the total establishment cost. He observed that use of planting material and plant protection increased with increase in the size of farm. For hi-tech, per hectare overall cost “A” , “B” and “C” worked out to Rs. 2501.91 thousand, Rs. 4456.55 thousand and Rs. 4579.16 thousands, respectively.

Per-hectare yield of rose flowers in hi-tech was the highest (2764900 number) in large groups of farm, followed by medium (2200864 number) and small (1664122 number) size groups of farm respectively.

He observed the major production problems faced by the hi-tech rose growers were depreciation of greenhouse, restrictions in improving plant protection, chemicals, high cost of planting materials etc. He concluded the use of resources found to be more in case of hi-tech rose cultivation than field rose because of its high intensive of land; secondly, he remarked under hi-tech rose, cost of production was more because of high investment.

Jagtap P.V. (2008) has studied “Production and marketing management of hi-tech floriculture” “A case study of Chintamani Floriculture Project in Pune district.” Under this study, he analyzed green house floriculture especially cost of production
and marketing management of selected cut flowers. His study undertook with the following specific objectives. To study the costs and returns structure in cut flower production under green house, to study the marketing cost and price spread of cut flower production under green house, to examine the problems in production and marketing of cut flower.

According to his analysis, the most important factor that determines the cost of construction is the type of green houses, which is whether it is naturally ventilated, partly controlled or fully controlled.

He remarked that, high cost of packaging material, lack of storage facilities, lack of good transportation facilities and mal practices followed in the market those are major market constraint of the selected cut flowers. He concluded the average cost of construction of a green house was found to be more on carnation. The major items of cost of cultivation were human labour in terms of absolute net returns; carnation cut flower gave the highest net returns of Rs. 7,96,235. The season, market place and grade of cut flower influenced the market price.

Kale M.S. (2008) investigated cost of production of hi-tech rose in her dissertation entitled “Gulab Phulache Utpadana–Ek Vyasti Adhayan (Professional Agro–Tech, Talegaon Sandarbh). She worked out the cost of production of rose per hectare Rs.147.23 lakh. Among this, cost Rs.58.87 lakh on green house establishment and 41.25 lakh on cultivation of rose and Rs.20.45 lakh on input. She estimated per flower cost which shown Rs.0.76 on cost “A” Rs.0.78 on cost “B” and Rs.0.78 for cost “C” she has grouping 40 cm, 50 cm and 60 cm type of rose. According to this classification, cost “C” shows Rs. 4.58, Rs.4.93 and Rs.5.63 respectively. She worked
out per flower net return which shown Rs.1.46, Rs.2.46 and Rs.4.46 for 40 cm, 50 cm and 60 cm respectively. She concluded the net returns of project were Rs.51.49 lakh.

3.5 Concluding Observations:

After review of some books, articles and theses which of several books are related to economic aspect of floriculture. However, most of them related to greenhouse floriculture and few of them related to field cultivation of flower.

3.5.1 General Observations:

Though there are many number of study on the production side, the distribution side of the flower industry has not been adequately documented. Show, the present research is undertaken to carry out the economic study of flower market in Tiruvarur District which is situated in Tamilnadu, the state that holds first place in floriculture.