Chapter 6

FINDINGS, CONCLUSIONS AND SUGGESTIONS
6. Findings, Conclusions and Suggestions

6.1 Introduction

This chapter, being the concluding chapter of the thesis, brings together the conceptual, theoretical and analytical strands of the preceding chapters and presents the conclusions of this investigation and the suggestions emanating the reform.

6.2 Findings

1. The primary survey showed that in Raigad district urban population is 5.34 lacs and rural population is 16.73 lacs. (Census 2011). 96% of the sampled farmers live in villages. 56% of the sampled farmers are in the age group of 41-60 years. There is less involvement of youth in Raigad mango marketing.

2. Education is a crucial factor for enhancing marketing decisions and skill development. Only 12.88% of the sampled farmers are educated up to graduation level.

3. In Raigad district largest fruit cultivation area is occupied for the mango cultivation (46418 hectar/ 65184 hectar). It has been found that largest mango cultivation in Raigad district is in Alibag Taluka which has having largest number of villages (215) in the district. Mango production is increasing in each Taluka of Raigad district.

4. In Raigad district out of 46418 hectar mango cultivation area, 21000 hector area is under Alphonso mango variety which has huge demand in Indian and Foreign markets.

5. The study regarding distribution profile of Raigad mangoes reveals that many intermediaries (pre-harvest contractors, commission agents, wholesalers, retailers etc.) are involved in Raigad mango supply chain resulting into a large gap between mango farmers and consumers. Raigad mango marketing is based on trust and relationship between mango farmers and intermediaries.

6. Findings of the study regarding marketing channels reveal that in Raigad district there are three main channels preferred by the mango farmers are as below:

   Channel – 1. For Local Market:
   Mango Grower/ Pre harvest Contractor → Consumer.
Channel - 2. For National Market:
Mango Grower → Pre-harvest Contractor → Commission Agent → Retailer → Consumer

Channel – 3. For International Market:
Mango Grower → Pre-harvest Contractor → Commission Agent → Exporter →
Foreign Channels → Foreign Consumer

7. The study brings out that still cooperative marketing is not progressed in Raigad district. Due to absence of well organized mango sale societies, mango farmers have no support of unity and they prefer indirect channel of distribution. A prominent observation of the study is 99% of the mango farmers in Raigad district prefer indirect channel of distribution for selling mangoes in national and international markets. They are of the opinion that due to more number of intermediaries in mango distribution channel, the mango farmers in Raigad district suffer from low level of profit.

8. The study further brings out that most of the mango farmers in Raigad district give mango orchards on contract basis to pre-harvest contractors. As these mango farmers do not want to face the further risks in mango marketing. They want to avoid botheration of marketing like responsibility of grading, packing, transportation, sale, risk of theft etc. They scared of uncertainties of the market. Transportation cost and cold storage cost is high which is not affordable for the mango farmers. 86% of the respondents think that the mango farmers in Raigad district are not ready to face challenges in national and international markets.

9. It is found that even some mango farmers also act as pre-harvest contractor. They take mango trees of other mango farmers in their nearby areas on contract basis. This is to enjoy the economies of large scale and to compensate the loss.

10. It has been observed that in Raigad district mostly local marketing is direct marketing which is with the help of family members. Even pre harvest contractors do local sale directly from mango sorting place without placing mangoes in local market.

11. Raigad mango local marketing suffers from certain problems like insufficient space for mango sale, lack of shed, lack of drinking water facility, lack of parking
place etc. Most of the local sale is on roadside. Mostly small size, low quality, damaged and rejected mangoes by the middlemen in local market. But local people are also surely looking for improved quality of the local mangoes. There is lack of publicity and advertising for local sale. Except mouth publicity no other element of integrated marketing communication is used to promote the local sale.

12. Investigation of Raigad mango marketing problems shows that every intermediary in Raigad mango supply chain faces certain problems like obstacles in transportation, improper warehousing, risks, uncertainties, price fluctuations, costly cold storage, costly transport, costly packing material, lack of skilled workers, high taxes, duties, and unexpected changes in weather.

13. Contemporary mango marketing practices in Raigad district are suffered due to many constraints in market logistics. The basic constraint in transport of Raigad mangoes is Raigad topography. The general topography of Raigad district is found to be hilly terrain. District is fairly rich in forest areas (148700 hectors) and hilly regions of the Sahyadri Ranges. This topography creates obstacles in mango transportation and it has become time consuming.

14. Availability and adequacy of road is important prerequisite to link producers with markets in a reduced transaction costs. It is found that road condition in Raigad district adversely affects on smooth transportation of mangoes. Major area of Raigad district is rural area (1967 villages and only 26 cities). And most of the mango production is in villages. 57.15% villages in Raigad district are connected by Kaccha road. Some villages even not connected by roads. And where there are Pucca roads, its condition is bouncy and worst. Some villages are inaccessible in monsoon which is just after mango season.

15. Lack of proper maintenance of transport vehicles increases fuel cost and time of transportation. Overloading in mango peak season & heat in summer adversely affect on quality and durability of mango fruit. Infrastructure facilities in Raigad district are inadequate & improper. Only 20.66% sampled pre-harvest contractors have their own means of transport while most of them use hired means of transport. High rate of taxes and octroi increase marketing cost of Raigad mangoes.
16. Mangoes are perishable and cannot be stored for longer periods. Therefore infrastructural facilities like cold storage, processing industries, cheap transportation charges etc. are necessary in the marketing of mango. But it has been found that in Raigad district infrastructural facilities are not appropriate. As a result 20-40 percent of the produce goes waste and mango farmers are compelled to sell their produce at unexpected lower price. Trouble of monkeys due to forest area (148700 hectors) and adivasis is also the reason of mango wastage. 91% of the respondents are of the opinion that scale of wastage of mangoes is high in Raigad district.

17. Warehousing facility to store mangoes is not proper and adequate in Raigad district. Methods of storing mangoes are improper. Mangoes are stored in a small room of mango farmer/pre-harvest contractor where generally temperature is high due to summer and ventilation is inadequate. There is lack of public warehousing facility to store mangoes. Cold storage facility is not available as it is costly. 93% of the respondents accepted that the storing facilities in Raigad district are not proper and adequate.

18. It has been also observed that some sampled mango farmers and pre-harvest contractors yet use traditional methods of mango plucking like plucking by children by climbing on the tree, use of picking hooks, shaking of trees and knocking down fruits with wooden sticks.

19. Farmers and pre-harvest contractors in the study area hire laborers for mango plucking, cleaning, sorting, loading purposes etc. Most of the time these functions are by inexperienced and untrained workers. And they are hasty in peak season. Raigad mango farmers and pre-harvest contractors do not apply latest technology (like ‘Nutan Net’ for mango plucking’) which adversely affects on mango life and quality. 97% of the respondents agreed that proper mango marketing management is essential to improve Raigad mango marketing.

20. While collecting financial data, several sample mango farmers and pre-harvest contractors avoided to give exact figures of marketing costs, turnover, rate of commission and profits. Lack of official records & publications about Raigad mango marketing is the barrier to know mango sale, market overheads and prices.
of Raigad mangoes. There is lack of uniform pattern of Raigad mango price and quotations vary according to Pre-harvest contractor and commission agent.

21. A well managed information system enables efficient performance of the various components of logistics which are transportation, packaging, material handling etc. There is no system in place that systematically collects, analyzes and disseminates information relevant to the needs of different intermediaries in Raigad mango supply chain. For marketing intelligence mango farmers depend on pre-harvest contractors and pre-harvest contractors depend on commission agents from the cities like Pune and Mumbai.

22. For local marketing, the pricing strategy followed by the sampled mango farmers is ‘Follow the Leader pricing strategy’. Price equivalent to the leading mango farmer in the village is fixed by the mango farmer. Quotations of Sampled Pre harvest contractors vary according to prevailing conditions in the market. There are other factors determining mango price which are cost, size, quality, relations with intermediaries, trust, demand, competition, rate of taxes etc.

23. 63% of the sampled mango farmers prefer to obtain finance from the Pre-harvest contractors, commission agents and money lenders. They borrow money from these intermediaries during slack seasons. This condition affects farm gate prices. Since farmers are forced to sell their produce at lower prices for their borrowers which ultimately triggered to lower returns. The commission agents/pre-harvest contractors who are one of the sources of finance to Raigad mango farmers compel mango farmers to sell mangoes through them only.

24. It has been observed that communication facility in Raigad district is getting affected especially in monsoon period which is followed by mango season. Most of the time internet connection in this season remains closed.

25. In case of product development it has been observed that some sampled mango farmers in Raigad district have bought plants of new mango varieties from Ratnagiri and Sindhudurg district.

26. Findings of the study regarding branding and brand loyalty reveal that Raigad mangoes do not have separate identity. No different brand is fixed for Raigad
mangoes. Even some sampled mango farmers and pre-harvest contractors use packing boxes which have label of Ratnagiri and Devgad mangoes.

27. Market segmentation is on the basis of geographical area which is local market, regional market, national market and international market. For local market small size, low quality, damaged and infected mangoes are mostly selected. Generally mango varieties other than Alphonso are preferred for local market. But for national and international market big size, high quality and Alphonso variety are preferred.

28. The study regarding type of competition reveals that Raigad mango marketers have to face internal competition from the mango marketers from Ratnagiri and Sindhudurg districts as both are mango marketers from Kokan region. External competition (other Indian mangoes) is from Karnataka and Gujarat mangoes which are sold by the name of Kokan mangoes.

29. The elements of Integrated Marketing Communication (IMC)/ Promotion mix are not adequately applied by the Raigad mango marketers. It has been observed that Raigad mango marketers do not undertake adequate, special and heavy sales promotional measures like publicity, advertising, participation in trade fairs, exhibitions and mango festivals etc. Ignorance of online advertising is the constraint in mango sales promotion in national and international market. 99% of the respondents agreed that advertising efforts undertaken by mango distributors in Raigad district are not sufficient to promote sale in national and international markets.

30. Several religious, historical, cultural and attractive places are in Raigad district at which Indian and foreign tourist visit in summer/ mango season. They also prefer to purchase Raigad mangoes.

31. Most of the mango farmers in Raigad district are not aware about the government assistance, incentives and schemes for them. Those who are aware about this, think that getting government assistance and benefits of schemes is time consuming and formalities are critical. They are also unknown about the insurance scheme under which mango farmers can get 50% subsidy in insurance premium and insurance protection is from Rs. 30000/- to Rs.150000/-.
32. It has been found that sampled mango farmers and pre-harvest contractors are also unknown about the international ban on Indian mangoes (European Union temporary ban on Indian Mangoes from 1st May, 2014), mango export formalities and procedure. They are not aware about the essentials of mango export like Agmark, Phytosanitary certificate, Global Gam Certification, hygiene and international quality standards etc.

33. It is observed that mango processing in Raigad district is not on large scale basis and in most of the cases processing is limited up to mango canning only. Making mango products is household/cottage business in Raigad district. And these mango products are placed in local and regional markets of Raigad for the tourist and local people.

6.3 Conclusions

The researcher presents the following conclusions which could be considered and reviewed by all engaged in the marketing of Raigad mangoes in a selective phased manner with the use of short term, medium term and long term marketing strategy.

1. It is said that Kokan houses are run on Mumbai’s salaries. Raigad youth migration rate is high. Involvement of youth in Raigad mango marketing is merely 29.33% this is because of fear of uncertainties, risks and lack of awareness about the career in mango marketing. They can earn good income by engaging in mango business and can avoid departure from their families and native places. Hence Raigad Mango marketing needs due attention.

2. There is tremendous potential for improving export possibilities of mangoes in Raigad District. Climatic conditions, rainfall and soil, in the study region are well suited for horticulture development. Horticulture policies of the government are favorable especially for the rural areas like Raigad region. Kokan mangoes enjoy loyalties which have high demand in international market and Raigad is a part of Kokan.

3. Majority of mango production in Raigad district is of Alphonso variety which has demand throughout the world. It is considered to be the best quality, as it is fibreless and possesses a very delicious taste and a nice fragrance. Raigad district
is declared as Agriculture Export Zone for export of Alphonso mangoes. Raigad has coastal line (720 km length) and ports (Bagmandla, Dighi, Revdanda, Revas, Mora, Rajpuri and Navashea (J.N.P.T.)) which can be utilized for mango water transport.

4. Favorable policies of Indian Government towards horticulture sector and measures to remove the constraints in marketing of horticulture products can boost Raigad mango marketing at national and international level. These measures includes creation of infrastructural facilities, market promotion through advertisement, setting up of Quality Control Labs, Research & Development in identifying new techniques and practices including those for packaging.

5. Contemporary practices of Raigad mango marketing are not successful due to supply chain problems, market logistics problems, inadequate sales promotion measures, underutilization of available resources, high scale of mango wastage and lack of awareness about horticulture policies and assistance of government.

6. Logistics problems in Raigad mango marketing are mostly due poor conditions of roads, time consuming transport (Raigad topography), inadequate and improper warehousing facility, lack of cold storage facility, improper methods of mango plucking, sorting, handling, loading and unloading. This results into loss in mango quality and quantity. Mangoes have to send immediately after plucking. They cannot retain for longer periods to reap more benefits. Solution of these problems is in the hands of Raigad mango farmers, middlemen, concerned government and agriculture offices.

7. Rate of mango wastage is high in Raigad district as most of the spoilage occurs at the level of plucking, handling, sorting, packing into sacks, loading and transporting on the Raigad rural rough roads.

8. To give mango orchards on contract basis is the usual practice in Raigad district. This adversely affects on returns of mango farmers, their relations and contact with customers/city agents, marketing intelligence, future planning & forecasting, market expansion and standard of living. It results into overdependence of mango farmers on intermediaries.
9. Local marketing of Raigad mangoes is most preferably direct marketing because of less marketing costs, less distance, less risks and uncertainties. It is convenient to sell mangoes with the help of family members in local market. Most of the time local marketing is without placing the mangoes in local market. Mangoes are sold from mango orchards/farm gate, sorting room, storing room of mango farmer / pre-harvest contractor. Local customers prefer to purchase mangoes from the mango farmer / pre-harvest contractor with whom they have contacts and relations.

10. ‘Marketing myopia’ - that is excessive attention given to production. Raigad mango farmers produce mangoes but by ignoring customers needs and expectations. To capture markets expectations of different customers are not taken into consideration. Expectations of local customers for quality mangoes are also ignored by the Raigad mango farmers.

11. Competition from Kokan region mangoes of Ratnagiri and Sindhudurg districts is stiff due to heavy promotional measures undertaken by that district marketers; which are more publicity, participation in mango festivals, online mango marketing, own websites, brand loyalty, well organized cooperative societies, and advantages of innovations, research and developments by Dr. Balasaheb Sawant Kokan Krishi Vidyapeeth at Dapoli, in Ratnagiri district.

12. Difficulties are involved in financial data collection and hence in ascertaining actual market overheads, sales, sales turnover, market share and profits.

13. Lack of well established cooperative marketing societies in Raigad district affects on confidence and bargaining power of mango farmers.

14. Measures undertaken by the Taluka agriculture offices in Raigad district are not adequate to aware, motivate and encourage mango farmers. Apart from this low educational level of mango farmers and pre-harvest contractors keep them away from application of latest technology for mango cultivation and marketing.

15. Threats for Raigad mango marketing are, increasing competition from Ratnagiri, Sindhudurg, Karnataka and Gujarat mangoes as well as migration of youth to cities and international bans on Indian mangoes.
16. Therefore, a number of actions need to be undertaken in order to promote the development of mango market chain. This particularly includes, capacity building, technological applications, improved extension and plant breeding activities. Infrastructural development is also a key to support the sub-sector. In this arena, emphasis should be given to improved storage and transportation system and offering credit and other services to improve effective production and marketing of mangoes in Raigad district.

17. Adhering international standards of hygiene and quality is the need of today to promote Raigad mango sale at international level. It is also essential to prevent international bans on import of Indian mangoes. In May, 2014 the European Union imposed temporary ban on Indian mangoes after it found flies in a significantly high number of fruits. It has been observed that mango marketers in Raigad district are not aware about the mango quality requirements at international level.

18. It is necessary to set up mango processing units at intensive mango cultivation areas of Raigad district in order to generate employment opportunities throughout the year. As Raigad district is facing the unemployment problem.

19. Increasing mango production and marketing can contribute commercialization of the Raigad economy and can create many off-farm jobs.

20. It may, thus can be concluded from the foregoing analysis that due to unawareness and lack of employment opportunities in Raigad district young people migrate to cities especially to Mumbai and Pune. But there are lots of opportunities in nearly all areas of mango business including farming, transportation, packing, storage and retail. Mango production and marketing are labor intensive hence promotion of it will allow productive employment in Raigad district.

6.4 Suggestions

The researcher has to put forward certain suggestions based on this study. Following suggestions were reported to overcome supply chain and market logistics constraints in Raigad mango marketing and to promote and enhance the sale of Raigad mangoes.
1. Raigad mango marketing requires immediate and urgent attention of the concerned government. Government with the help of agriculture offices should take lead to develop adequate facilities in Raigad district to enhance mango trade. Priority should be given to improve worst condition of Raigad roads. Packing material should be provided at subsidized rates to minimize packing cost. Public warehousing facility should be made available in Raigad district to reap benefits of increased mango prices and to maintain quality of mangoes.

2. Mango selling societies at Vengurla, Malva and Devgad in Ratnagiri district are performing satisfactory. Raigad mango farmers should take lead to set up such societies and see that it functions effectively. The network of mango marketing on cooperative basis will facilitate to minimize mango marketing cost, reduce number of intermediaries, apply direct distribution channel, increase farmers share in consumer price, improve bargaining power and to develop spirit of self confidence. It will also bring Raigad mango farmers one step closer to mango customers for fair price to them and customers. And this would be a step towards improving the existing marketing system of Raigad mangoes.

3. Raigad mango farmers should focus on introduction of improved mango varieties like ‘Kokan Raja’- sweet at the raw mango stage and ‘Suvarna’-yearly bearing crop developed by KKV. Application of chemical fertilizers, use of modern technologies, controlling disease and pest practices should be promoted for proper pre-harvest management. Mango cultivation area in Raigad district can be increased by planting mango plants on slopes of the mountains. Young mango farmers should take lead for this.

4. As Raigad mango product range covers many varieties it can be utilized for the specific and suitable purposes such as Alphonso and Kesar variety for export (demanded at global level), Raiwal variety for making mango pickle (it is not generally used for direct consumption and less costly) and other varieties for processing.

5. To minimize high scale of mango wastage, traditional methods of mango plucking should be avoided. Mango farmers should use ‘Nutan Net’ developed by KKV to avoid mango harm and waste. Mango plucking, handling, sorting, packing, loading and unloading should be done by trained and experienced workers. There
should be proper maintenance of vehicles which are used for mango transportation. And overloading in peak season must be avoided. These all measures will avoid pre and post harvest loss of mangoes.

6. Municipal corporations and *Grampanchayats* in Raigad district should take lead to develop infrastructural facilities like separate space for fruit sellers, shed, drinking water facility, to promote local marketing.

7. Changing the attitudes of Raigad farmers is a crucial factor in improving the mango marketing performance. For this continuous education and training on production and marketing should be provided to create positive impact on their attitudes. Their fear about uncertainties and risks in mango marketing is to be removed through awareness programmes by Taluka agriculture offices in Raigad district. Mouth publicity should be given to government schemes, assistance, insurance facility and favorable horticulture policies of the government with the help of Mukhiya/Talathi/Sarpanch of the villages on whom people have trust.

8. Generally, pre-harvest contractors in Raigad district are capable of sourcing market and price information from different sources where as mango farmers rely on them for the same information. Therefore, there is a great need to make information available to farmers at the right time and place. Effective market information service has to be established by the Government to provide update, accurate and timely market information to Raigad mango farmers.

9. Agriculture offices should make available information regarding commercial cultivation of fruit crops in the region to the growers. And it should make available the literature in Kokan local language on marketing of mango and its processing. With the joint efforts of concerned Government they should give priority to organize seminars, conferences and training programme to educate all the concerned including mango growers marketing functionaries.

10. Raigad mango marketers should undertake adequate Sales Promotion measures to face regional, national and international competition which are as below:

- Develop own brand for Raigad mangoes (like “NAWAB” brand from Saharanpur) to give separate identity from Ratnagiri and Sindhudurg district mangoes.
- Create differentiation in packing & packaging for separate identity.
- Do publicity through rural melas (in summer/ mango season) which are quite popular in rural Raigad. Weekly markets are held at many places in the district, local sale of mangoes can be promoted by placing the mangoes in weekly markets.
- More publicity and advertising at historical, religious and tourist places in Raigad.
- Participation in mango festivals as trend of purchasing mangoes in festival is increasing in cities.
- Open sales outlets in cities to minimise marketing cost and to promote sale.
- Buy space on a commercial online service or can open Web site. These sites can be designed to engage consumers in interactions that will move mango farmers/pre-harvest contractors closer to a purchaser or other marketing outcome. Online Advertising would provide due returns to the mango farmers in Raigad district.

11. The export zone for Alphonso mangoes has become operational in Raigad district along with other districts of Kokan. Two centers have been set up at Jamsande in Sindhudurga and Nathane in Ratnagiri which handle tasks like washing, grading, packaging and pre-cooling of mangoes besides providing cold storage facilities. Government should establish such center in Raigad district for proper mango marketing functions.

10. To tap potential for improving mango export possibilities, Raigad farmers should take into consideration international quality standards to meet foreign demand. Mango farmers in Raigad district need to be exposed and trained on such quality requirements of importing countries. Such training should be provided by the Taluka agriculture offices, Krishi Vidyan Kendra at Roha, agricultural research station at Karjat, agricultural research sub-stations at Khopoli and Panvel and through organizing ‘Shetishala’ for Raigad mango farmers.

11. International market should be segmented by taking into consideration mango quality and taste requirements which differ from country to country e.g. Arabian countries demand very sweet mangoes than European countries.
12. Government should provide subsidy to set up large mango processing units in Raigad district and financial assistance for their development which would generate employment opportunities throughout the year for Raigad people.

13. The concept of ‘Mango tourism’ is developed in Nate village of Raigad district. This concept is to be introduced throughout the Raigad district to promote mango sale for the tourists who visit many historical and religious places in Raigad.

14. The future of Raigad mango marketers looks bright as the opportunities in horticulture sector are immense though severe inefficiencies limit it. They can play a far greater role in providing quality mangoes to both domestic and foreign markets.

6.5 Scope for Future Research

Since last decade, India’s export of agricultural and processed foods has been increased. Though India produces finest quality fruits but Indian horticulture sector is facing many constraints and inefficiencies. Hence greater research into fruit production and marketing is required in India.

Further research will be required on mango processing units in Raigad district it would be important to determine the causes of their small scale operations. As processing industry is labor intensive development of it will provide multiple employment opportunities to Raigad people. Due to favorable climatic conditions in Raigad district, fruits like cashew nut, jackfruit, areca nut, kokum, Jamul etc. are cultivated along with mango fruit. Raigad district is leading in cultivation of rice and spices. Further research on marketing of these products must be conducted to know the potential for promoting sale of these products in domestic and foreign markets.