CHAPTER-V
SUMMARY AND CONCLUSIONS

Onion is one of the important horticultural crop enhance the farmers economy with the pace of agricultural development in Indian economy. It is grown mainly for its bulb, which is used in every home, almost daily. As a constituent of a meal, both the green leaves and bulbs can be eaten raw, cooked or flood in soups and salads. In India, onion occupied 13.06 lakh hectares area under cultivation and production was about 224.27 lakh metric tonnes in 2016-17. Moreover, area, production and yield of onion crop grown considerably in India during last decade it found quite instable due to fluctuation in prices and several other factors. Gujarat is the leading onion producing state in India with the highest productivity of 26.54 tonnes/ha in year 2016-17. The area and production of onion was about 0.51 lakh hectares and 12.90 lakh tonnes, respectively during the year 2016-17 in Gujarat. It is also noteworthy that Saurashtra region alone contributes area of 0.48 lakh hectares in onion cultivation and 12.19 lakh tonnes of onion production in year 2016-17. The Bhavnagar district of saurashtra region alone contribute 67.82 per cent in terms of area and 69.88 per cent in terms of production of onion during the year 2016-17. Profitability of onion crop not only depends upon efficient marketing but also on the modern farming practices. Marketing system and its efficiency plays a crucial role in onion crop. Keeping this in view the present study entitled, "An economic analysis of production and marketing of onion in Bhavnagar district of Gujarat" was undertaken with following specific objectives:

1. To work out the cost of production of onion and input-output ratio for different size of farm in Bhavnagar district.
2. To estimate different profitability measures of onion cultivation.
3. To analyze the resource use efficiency.
4. To identify different marketing channels and examine various marketing cost and margins.
5. To identify various constraints in onion production and marketing in the study area.
Bhavnagar district was selected purposively, as it collectively covers 67.82 per cent area of onion cultivation with 69.88 per cent share in production of onion in the state in the year 2016-17. Mahuva and Talaja talukas of Bhavnagri district were selected on the basis of its largest share in onion cultivation in the district. Three villages of Mahuva taluka namely Kumbhan, Tared and Kalsar, while three villages from Talaja taluka namely Dihor, Zanjmer and Thaliya were selected on the basis of concentration of area under onion cultivation. A proportional sample of 120 respondents comprises of 20 respondents from each of the selected villages was selected for study. Selected respondents are classified into Marginal, Small, Medium and Large farmers. For the study of marketing aspects of onion, the Bhavnagar and Mahuva regulated markets were selected on the basis of quantity of onion arrived in the market. A sample of eight respondents from each of different marketing functionaries like local merchants, primary wholesaler, secondary wholesaler, commission agent and retailer was randomly selected from both the selected markets to study various marketing aspects. Thus, a total sample of 80 respondents from different marketing functionaries was selected for the study. The required primary data on various aspects of cost of cultivation and marketing were collected through interview schedule from the selected respondents. The collected data were analysed using ratios and percentages to work out the standardized concepts of different costs and returns in addition to production function to work out the resource use efficiency. The price spread, marketing margin and marketing efficiency were also worked out. The constraints faced by onion growers were analysed using Garrett’s ranking technique.

The results of the Socio-economic characteristics of the respondents revealed that majority of the onion growers 50.00 per cent middle aged group (35-50 years), while about 27.50 per cent of the growers were belonged to old age group (above 50 years). The average age of the head of the farm family was around 43 years. About 81.67 per cent of the sample cultivators were literate and remaining were illiterate. Among the different organizations, the highest participation of selected respondents was observed in co-operative credit society, followed by milk co-operative society and village panchayat. The average operated area per farm was 3.25 hectare and it varied from 0.60 hectare in case of marginal farms to 7.83 hectare in case of large farms. The average of total area under onion crop was 1.61 hectare (49.53%). Among
the different Occupation, majority of selected respondents adopted Farming +Animal Husbandry. The average family size of the onion growers was about 5 members.

The results of level of input used revealed that on an average, total human labour use per hectare was about 217.92 man-days. The contribution of hired labour and family labour was about 74.27 per cent and 25.73 per cent, respectively. The selected onion respondents used 1.08 pair days of bullock labour and 2.32 days of tractor per hectare for onion cultivation. On an average, onion growers used 9.34 tonnes of FYM per hectare. Moreover, an average utilization of nitrogen, phosphorous, potassium and sulphur by onion cultivators was 105.19, 62.42, 54.34 and 8.09 kg per hectare, respectively.

It is observed from the results of costs and return analysis that the average total cost of cultivation per hectare of onion farms was Rs. 158678.00. The highest per hectare cost of cultivation of onion found on large farms (Rs. 163056.00), followed by on medium farms, small farms and marginal farms. On an average Cost-A (paid out cost) formed 69.18 per cent of total cost, while Cost-B accounted for 82.42 per cent of total cost. Further the break-up of total cost on sample farms indicated that per hectare expenditure on cost of human labour ranked first with 30.52 per cent of the total cost because of labour intensive nature of onion crop. The major share of inputs was observed in case of planting material (11.78%), manures and cakes (6.93%), fertilizer (5.59%), insecticides/pesticides (5.10%), tractor charges (4.92%), irrigation charges (4.71%), miscellaneous (1.41%), bullock labour (0.85%) and depreciation (0.35%). The average yield of onion was 299.56 quintals per hectare on overall farms. It ranged from 290.30 quintals on marginal farms to 308.83 quintals on large farms. The per quintal average farm harvest price received by the onion growers was Rs. 608.33. The large size growers realized higher prices per quintal (Rs. 617.84), followed by small, medium and marginal category of farmers. The overall average gross returns per hectare of onion farms amounted to Rs. 182280.00 which varied from Rs. 174301.00 on marginal farms to Rs. 190807.00 on large farms. Net returns on overall farms over Cost-A, Cost-B, Cost-C1 and Cost-C2 were Rs. 78219.00, Rs. 52590.00, Rs. 38965.00 and Rs. 24539.0 per hectare, respectively. The overall per hectare farm business income, family labour income and farm investment income were Rs. 78219, Rs. 52590 and Rs. 64743, respectively on overall
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farms. The net profit per hectare (over Cost-C2) was Rs. 24539 on overall farms. The average cost of production (Cost-C2) was Rs. 529.65 per quintal which was the highest on small farms, followed by medium farms, large farms and marginal category of farms. The overall input output ratio found to be 1:1.15 indicated that an investment worth Rs. 1.00 on all the inputs used in the cultivation of onion yielded an output worth Rs. 1.15 and it was found increasing with increase in the farm size.

It is concluded from the results of the production function analysis that the variables of manures & cakes, irrigation charges and plant protection chemicals found to have significant influence on the gross income with elasticities of 0.218, 0.115, and 0.104 per cent, respectively. The co-efficient of multiple determination (R^2) showed that 67.44 per cent of the variation in the gross income was accounted for by the independent variables included in the function. The sum of the value of regression coefficients of variables (Σb,’s) was 0.564, which indicating diminishing returns to scale. The ratio of MVP to factor cost in case of all farms found to be the highest for manures & cakes (3.81) followed by irrigation (2.38), plant protection chemicals (2.35) and fertilizer (1.43) indicating that still there exists a scope for higher utilization of these inputs in order to increase the gross income.

The results of marketing cost and price spread revealed that the marketable surplus on sample farms was 98.54 per cent of total onion production. It is found that the marketable surplus increased in absolute as well as in percentage terms with increase in farm size. Out of the total marketed surplus of onion (59077.62 quintals) the highest quantum of production (57.89%) was sold through commission agent, followed by primary wholesaler (13.47%), secondary wholesaler (11.31%), village merchants (9.41%) and retailer (7.92%) by sample onion growers. The onion growers paid the highest average total marketing cost of Rs. 57.29 per quintal of onion sold through commission agent followed by the same in case of secondary wholesaler (Rs. 51.22), primary wholesaler (Rs. 50.83), village merchants (Rs. 48.09) and retailer (Rs. 43.03). The highest per quintal average total marketing cost incurred by different middleman in the marketing of onion found in case of commission agent (Rs 98.96), followed by secondary wholesaler (Rs. 89.70), primary wholesaler (Rs. 87.50), retailer (Rs. 75.45) and village merchant (Rs. 63.69). On an average about 54.80, 19.39, 11.10, 9.41 and 5.31 per cent of total quantity of onion sold through
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Channel-IV (Producer - Commission agent - Primary Wholesaler - Processor), Channel-V (Producer - Primary wholesaler - Secondary wholesaler - Processor), Channel-II (Producer - Commission agent - Primary wholesaler - Retailer - Consumer), Channel-I (Producer - Local Merchant - Consumer) and Channel-III (Producer - Primary wholesaler - Retailer - Consumer), respectively. The results of price spread analysis indicated that producers got the highest net price per quintal in the Channel-IV followed by Channel-III, II, I and V. The marketing cost per quintal was the highest in the Channel-II (Rs. 319.00) followed by Channel-IV, V, III and I. While the marketing margin was the highest in Channel-I (Rs. 136.31) followed by Channel-V, IV, III and II. The producer’s share in consumer’s rupee per quintal was the highest in Channel-I followed by Channel-III, IV, V and II. The highest marketing efficiency was observed in Channel-I 1.62 followed by Channel-III and IV reported.

Among different production constraints faced but the onion growers, the major problem was the unavailability of seeds of high yielding variety of onion, followed by lack of irrigation facility, poor germination of seeds, unavailability of needy quantity of organic manures, unavailability of labour on time and un-availability of fertilizer on time. As regard marketing constraints, majority of the onion cultivators felt the problem of fluctuation in market prices (Rank-I) followed by lack of storage facilities, lack of transportation facilities, long distance of market, lack of special marketing yard, high spoilage possibilities and irregular payment of sale. Different economic constraints faced by majority of onion growers include high price of planting materials (Rank-I) followed by high price of pesticides, high price of chemical fertilizers, high cost of hired labour, crop loss due to adverse climatic factors and non-availability of credit on time.

Policy implications

1. Efforts are needed to educate train the farmers regarding the use of pest and disease resistant varieties so as to reduce the major cost component incurred towards plant protection chemicals.

2. Institutional mechanism to create awareness among the farmers regarding the efficient utilization of resources particularly manures & cakes, irrigation,
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plant protection chemicals and fertilizer which found to be underutilized will definitely help for better yield realization.

3. Provision should be made to avail quality seeds at affordable prices to increase farm profitability.

4. Transportation, storage facilities and market information should be made more easily available and accessible to onion growers for better price realization.

5. There is a need to provide market information and also to make provision of logistic support to the onion growers to improve their existing marketing knowledge. Besides, production and marketing techniques need to be integrated to reduce the losses.