CHAPTER - V

SUMMARY AND CONCLUSION

Water is a vital resource for life, human and societal development and environmental sustainability. We must treat the water economic and socially good and that water management must aim for the most worthwhile use ensuring equity, concerns, adequate, efficiency and environmental sustainability. The need to meet the basic water requirements of present and future generations; maintain the renewable fresh water resources and develop public and private institutions capable of managing supply and demand resolving conflicts; and protecting watersheds and allocating scarce water resources. Though water resources in India are good, but the utilizable water is about 110 Mha.

India is the 2nd largest producer of fruit and vegetables in the world, but it is not sufficient for the minimum requirement of the population. Water is one of the most critical input for agricultural which consumer more than 80 per cent of the water resources of the country. The micro irrigation is a new technology such as drip and sprinkler but farmers are showing keen interest in introducing this water saving and improve crop productivity. Drip irrigation was introduced on large scale in Israel during the sixties and at present the entire area for all crops, micro irrigation is the only irrigation method practiced. Due to number of benefits in implementing the drip irrigation system. Less input (labour, fertilizers, chemicals, etc.); high quality of product.

Micro-irrigation system applies measured quantity of water slowly and directed above or below the soil surface, usually by discrete or continuous drops, tiny stream or miniature spray through emitters or applicators placed along a water delivery line near the plant. Moreover spray-jet, foggers and micro-sprinkler with low pressure also covered under this system.

The Keesen crop management was incorporate in 2012. This unit is for exclusively Micro-irrigation system manufacturer and supplier to end customer which will be farmer. It is now need of all farmers to take all technological advantage to get better yield and get wealthier with help of advanced micro-irrigation systems.
Summary and Conclusion

Company is committed to provide world class irrigation systems, parts and services to customer at competitive price. Companies have world class machinery for manufacturing emitting pipe (drip line). It has create In-house testing in the laboratory facility with all modern equipment's which are enough capable to identify right quality is delivered to our customer. Company is very much interested to serve industrial/corporate customers who want to take drip line from us as per their requirement. Company have its own manufacturing facility, warehouses with good supply chain.

The main aim of the project was to study the assessment of future expansion of MIS of Keesen crop management. This may help the company to develop new market of MIS in Jamnagar district. The study was also undertaken on the basis of market practices with the specific objectives viz. promotional activity preferred by farmers and dealers. Factors affecting the adoption of area under MIS. May help the company to decide marketing strategy.

With this background, the present study was carried out with the following specific objectives.

5.1.1 To identify the farmers and dealers expectation and most promotional activity preferred by farmers and dealers.
5.1.2 To evaluate market on the basis of MIS in Gujarat state.
5.1.3 To find out factors affecting the adoption of MIS.
5.1.4 To find out future scope in term of business expansion.
5.1.5 To assess the economics of MIS in different farm group.

Multi stage sampling technique was adopted as per the objective of the study. At the first stage of sampling three talukas were selected on the basis of highest number of farmers using MIS from Jamnagar district. At second stage of sampling 20 dealers were selected from Jamnagar district. At the third stage 20 farmers who has adopter MIS and 40 farmers non adopter from each taluka 60 farmers were selected randomly. In all, total sample comprise of 180 farmers. Primary data was collected through the personal interview of farmers and dealers using well-structured questionnaires. The other information required for the study regarding company and its product was collected directly from the company. The secondary data and other
different MIS data for the study were gathered from the Gujarat Green Revolution Company, Government Agricultural Department, journal, annual report etc.

The Garrett’s ranking technique was used to identify the market promotional activities preferred by farmers and dealers, as well as farmers and dealers expectations from the company and the reasons for change in area under MIS. By referring to the Garrett’s table, the per cent positions estimated were converted into scores. Thus for each factor the scores of the various respondents were added and then mean value was estimated. The attributes with the highest value was considered as the most important one and the other followed in order.

A linear multiple regression model was used to study the factors affecting the adoption of area under MIS.

The concepts of cost of cultivation were used to assess the economics of MIS for different farm group.

5.1 MARKET PROMOTIONAL ACTIVITY AND EXPECTATION

The study concluded that farmers opinion about the promotional activity, farmer meeting for the ranked first with the mean score (71.75), followed by fair and exhibition (66.48). It means that the farmers consider farmer meeting followed by fair and exhibition as major activity for promoting the sale of MIS in this area.

The study concluded that dealers opinion about the promotional activity for the ranked first farmer meeting with the mean score was highest (73), followed by field demonstration (55.25). It means that the dealers consider farmer meeting followed by field exhibition as most effective tool for promoting the sale of MIS in this area.

As per the garret ranking scale analysis revealed that the farmers expectation from company for the purchase of MIS. It was found that the low cost of installation it was ranked first with the mean score (71.95), followed by quality (60.95). This analysis shows that maximum farmers wants to low cost of installation followed by quality which help them proper utilization of MIS in this area.

As per the garret ranking scale analysis revealed that the expectation of the dealers about the company’s of MIS. It was found that the good quality it was ranked first with the mean score (68.03), followed by more subsidy (62.50). This analysis
shows that maximum dealers wants to good quality followed by more subsidy which help them proper utilization of MIS in this area.

5.2 EVALUATION OF MARKET ON THE BASIS OF MIS

Adoption of MIS with respected to different farmers categories in Gujarat state during 2005-06 to 2015-16. The average farm size of medium farmers in Gujarat state was 56 per cent ha covered area under MIS, followed by 30 per cent of small farmers,

It was found that the 13.08 lakh ha have come under MIS out of this around 1.77 lakh ha ware under horticultural crop and the remaining under agricultural crop. It is also found that the among different horticultural crop, Potato alone contributed to about 45 per cent of the area covered followed by other horticultural crop nearing 26 per cent.

It was found that the 11.30 lakh ware under agricultural crop. Thus these two crops combined contribution to 88 per cent of the total MIS area covered, while all other crops contributed only 12 per cent, while sprinkler accounted as the MIS under groundnut, it was drip for cotton.

It was found that the average highest penetration of MIS 2.10 per cent in Tapi district, followed by 1.83 per cent in Banaskantha district and lowest 0.13 per cent in Anand district. It is also found that the overall average penetration in Gujarat state was 25.33 per cent while it is continues increase of district wise penetration of MIS during 2008-09 to 2012-13.

5.3 FACTORS AFFECTING THE ADOPTION

5.3.1 Factors Affecting the Adoption of Area under Drip Irrigation System

The coefficient of multiple determinations ($R^2$) was found to be 0.9620 indicates that 96.20 per cent of variation in area under drip irrigation was explained by the eight variables included in the model. The coefficient of land holding (0.3523) and coefficient of annual income (4.6928) were found positive and highly significant at 1 per cent level of significance. This indicates that increase in land holding and annual income of farmers will lead to increase in adoption of area under drip irrigation system. All the other coefficients were found non-significant.
5.3.2 Factors Affecting the Adoption of Area under Sprinkler Irrigation System

The coefficient of multiple determinations (R²) was found to be 0.7973 indicates that 79.73 per cent of variation in area under sprinkler irrigation was explained by the eight variables included in the model. The coefficient of land holding (0.2920) and coefficient of annual income (6.8980) were found positive and highly significant at 1 per cent level of significance. This indicates that increase in land holding and annual income of farmers will lead to increase in adoption of area under sprinkler irrigation system. All the other coefficients were found non-significant.

5.4 SCOPE OF BUSINESS IN MIS

It was found that the farmers were more purchase of drip irrigation as compare to sprinkler irrigation system in this area. It is also found that the farmers had 65 per cent area under MIS at the time of installation out of total land, present area under MIS during 2105-16 is 85 per cent out of installation area under micro irrigation in last decade. While farmers they are 22 per cent area increase in future out of total land in this area.

The majority of the 33 per cent non adopter farmers were purchase MIS within 2 to 3 years, followed by 25 per cent farmers were purchase within 3 to 4 year in this area.

It was observed that the farmers were 96 per cent Drip irrigation system use in Rabi season, followed by 73 per cent in Kharif season out of present area under MIS. It is also found that the farmers were 84 per cent sprinkler irrigation system use in Kharif season, followed by Summer season 39 per cent out of present area under MIS during 2015-16.

Mean score calculated using garret ranking method for reason for increased area under MIS. It was found that the farmers opinion about the major reason for the ranked first difficult to maintain with mean score was highest (40.61), followed by change in cropping pattern (38.15). It means that the farmers consider difficult to maintain followed by change in cropping pattern as a major problems of decrease area under MIS in this area.

It was also revealed that the farmers opinion about the major reason for the ranked first more production with mean score was highest (43.26), followed by water
saving (33.50). It means that the farmers more production followed by water saving should be given more priority of adoption of MIS by the farmers

5.5 **ECONOMICS OF MICRO-IRRIGATION**

5.5.1 **Economic of Drip Irrigated Cotton**

Small, medium and large farmers of drip irrigation users were compared to those of non drip irrigation users. Results showed that the overall farm business income, family labour income, and farm investment income for drip irrigation user were Rs. 3,30,004.70, Rs. 2,87,904.20 and Rs. 2,85,973.25 per hectare respectively, while for non-user of drip irrigation were Rs. 3,19,292.98, Rs. 2,76,803.28 and Rs. 2,73,817.50 Per hectare. It is also found that overall net profit per hectare was Rs. 2,43,872.77 for drip irrigation users and Rs. 2,30,363.81 for the non-users of drip irrigation. From the above data it was clearly indicative that the cultivation under drip irrigation is more profitable than the non use of drip irrigation. Cotton cultivation under drip irrigation is economically viable and more profitable to farmers. In addition bullock charges, labour charges and irrigation charges etc. are also less compared to non use of drip irrigation since the controlled use of water reduce the rapid growth of weeds compared to the flood types of irrigation.

5.5.2 **Economic of Sprinkler irrigated Groundnut**

Small, medium and large farmers of sprinkler irrigation users were compared to those of non sprinkler irrigation users. Results showed that the overall farm business income, family labour income, and farm investment income for sprinkler irrigation user were Rs. 3,30,004.70, Rs. 2,87,904.20 and Rs. 2,85,973.25 per hectare respectively, while for non-user of sprinkler irrigation were Rs. 3,19,292.98, Rs. 2,76,803.28 and Rs. 2,73,817.50 Per hectare. It is also found that the overall net profit per hectare was Rs. 2,43,872.77 for sprinkler irrigation users and Rs. 2,30,363.81 for the non-users of sprinkler irrigation. From the above data it was clearly indicative that the cultivation under sprinkler irrigation is more profitable than the non use of sprinkler irrigation. Groundnut cultivation under sprinkler irrigation is economically viable and more profitable to farmers. In addition bullock charges, labour charges and irrigation charges etc. are also less compared to non use of drip irrigation since the controlled use of water reduce the rapid growth of weeds compared to the flood types of irrigation.
Summary and Conclusion

5.6 CONCLUSION

The present study was carried out with the objectives to study an assessment of future expansion of MIS of Keesen crop management in Jamnagar district. Two hundred respondents were selected for the survey comprising one hundred and eighty farmers and twenty dealers. It can be concluded that in the study area, farmer meeting as major effective tool for promoting the sales of MIS in this area. It was discovered maximum farmers want to low cost of installation of MIS and dealers want to quality which help them proper utilization of MIS in this area.

The study concluded that the average farm size of medium farmers were 56 per cent area covered under MIS. Around 1.77 lakh ha were under horticultural crop and the remaining agricultural crop. Potato alone contributed 45 per cent followed by other horticultural crop nearing 26 per cent. While thus these two crop combined contribution to 88 per cent, while sprinkler accounted as the under groundnut, it was drip for cotton. The average highest penetration of MIS 2.10 per cent in Tapi district, and lowest 0.12 per cent in Anand district. It is also found that the overall average penetration in Gujarat state was 25.32 per cent. While it is continues increase of district wise penetration of MIS during 2008-09 to 2012-13.

The study revealed that the land holding and annual income had positive effect on area under drip and sprinkler irrigation. This indicates that increase in land holding and annual income of farmers will lead to increase in adoption of micro-irrigation system. The majority of the non adopter farmers were 33 per cent purchase of MIS within 2 to 3 year. It is also found that the farmers they are 22 per cent area increase in future out of total land. Farmers opinion difficult to maintain, followed by change in cropping pattern as a major problem of decreased area under MIS. More production followed by water saving should be given more priority of adoption of MIS by the farmers. Majority of the farmers 96 per cent drip irrigation system use in Rabi season and 84 per cent sprinkler irrigation system farmers use in Kharif season. It was observed that the cultivation under drip irrigated cotton and sprinkler irrigated groundnut was more profitable than the non use of drip irrigation and sprinkler irrigation.
Summary and Conclusion

SUGGESTION

- Most of the people are not aware by the company. So the companies have to take some steps to enhance awareness about the MIS in Jamnagar district.

- The company should to increase promotional activity like newspaper, local TV, wall painting, poster and banner. If the company uses such promotional activities then market share of company will increase.

- The company should provide one dealer at taluka place.

- Company must organize awareness camp in villages also in Agricultural exhibition or fair for advertisement of product and increase brand awareness among farmers.

- Company should provide advertising material on the basis of farmers priority.

- Company should provide insurance to MIS product.

- Company should provide the provision of more credit facilities to increase the area under MIS.