CHAPTER - II

REVIEW OF LITERATURE

Literature review of aims to portray the critical points of current and collected knowledge on the topic under study. It seeks to describe, summarize, evaluate, clarify and integrate the content of primary reports. Moreover it forms the basis for the justification for future research in the area. As such, review of literature has become an inevitable part of any scientific investigation. Hence a brief review of available literature, related to the study is presented under following heads.

2.1 Market Promotional Activity and Expectation

2.2 Evaluation of Market on the Basis of MIS

2.3 Factors Affecting the Adoption of MIS

2.4 Scope of Business in MIS

2.5 Economics of Micro-Irrigation

2.1 MARKET PROMOTIONAL ACTIVITY AND EXPECTATION

Rane (1996) examined the promotional strategies of Deepak fertilizer and petrochemicals corporation ltd. (DFPCL). He found that the sales programmers were carried out through agricultural graduates by distributing the company products personally to the farmers. This programme created good image for company’s product. In addition, the spot demonstrations were carried out on farmers’ fields which helped to compare the efficiency of products. Apart from these things DFPCL also conducted farmers and dealers training programme to impart knowledge about the use of phosphate, potash and micronutrients.

Sarala and Paramesha (2009) conducted study on consumer pull and dealer push of branded TMT bars. This study revealed that the manufacture motivate and promote the dealer in searing TMT brands through by providing higher incentive, favourable profit margin and schemes like cash discount and quality discount.

Lohana (2011) examined the promotional strategy, dealers and farmers expectation from company, pricing policy of Syngenta India Pvt. Ltd. in Nanded. The
findings of the study showed that product quality and place (easy availability) has an impact on consumer motives, and the pricing strategy (competitiveness) has a significant positive impact on consumer buying behavior. It was conducted that consumers looked for product characteristics and store location when buying agrochemicals products.

Mishra et al (2013) analysed the promotional strategy for bio fertilizers in Tarai region of state Uttarakhand in India. It was found the help of structured questionnaire. Majority of the farmers 70 per cent attended Kisan Mela once or twince a year. To get update information about agricultural and to buy the quality seed, pesticides etc. the finding of the study that demonstration and field trails is the best method for the promotion of bio fertilizers.

Farkade (2014) analysed the buying motives of agricultural equipments and evaluate the most important factor like product brand, availability of product. Financial subsidy, product capacity, after sales service etc. in Vidarbha region of Maharashtra. It is found as per ranking given by the respondents subsidy was ranked first and followed by source consulted, horse power, after sales service, price and brand name which respectively were considered for agricultural equipments.

Nayak and Barker (2015) examined the promotional strategy for enhancing the Uttam Super fertilizer sale in Rohtas, Kaimur and Aurangabad district of Bihar. It was reveals that study that quality was the most important factor that influences the farmer purchasing decision coupled with timely availability followed by good packaging, promotion and reasonable price. Further, farmer meeting and trails had emerged as useful promotional activity as it is noted that awareness level for Uttam super was found merely.

2.2 EVALUATION MARKET ON THE BASIS OF MIS

Satyasai and Viswanathan (1997) conducted study on evaluation of alternative water management strategies for water scare areas of Hinduour taluka of Anantapur district in Andhra Pradesh. It was observed that the dug wells were the main source of irrigation in the region. Which are dry during the most of the year due to frequent droughts and permanent decline in the water have over decades. It was suggested to the technology alternative like sprinkler and drip.
Griffiths and Lecler (2001) evaluated the various types of irrigation system like pumping plants, overhead sprinkler, sub-surface drip, center pivot and furrow irrigation system in Zimbabwean. The result showed that seven floppy sprinklers and 27 sub-surface drip system are tabulated. The floppy sprinkler coefficient of uniformities range from 66-84 per cent with the distribution uniformities range from 59-78 Per cent. The sub-surface drip system distribution uniformity values range from 33-94 per cent, with the statistical uniformity values ranging from 53-98 per cent in area.

Palanisami and Raman (2012) identified the potential of micro-irrigation in India. The study was conducted on adoption of micro-irrigation technology. It has a positive impact in terms of water saving, yield and income enhancement at farm level. The result showed only 12.2 percent of potential sprinkler area was covered in the country with large variation across state.

Shukla and Dhande (2013) examined the marketing of drip irrigation in Jalgaon district. The result showed that Jain irrigation, occupied the highest share of drip irrigation 35 per cent, followed by the Netafim 10 per cent and Finolex 8 per cent in the Jalgaon district.

2.3 FACTORS AFFECTING THE ADOPTION OF MIS

Anon. (2005) identified the factors influencing the adoption of micro-irrigation technology in Maharashtra and Gujarat state of India. The result showed that Maharashtra and Gujarat regarding the effect of the cropping pattern on the adoption of micro-irrigation technologies in Maharashtra, the share of fruit crops in the cropping system had a significant effect on adoption probability. While in Gujarat the share of vegetable, cotton and oil seeds had a positive influence on adoption probability.

Methi (2012) studied the factors influencing the drip irrigation adoption constraints and remedial measure to increase area under drip irrigation in Dharward district of Northern Karnataka. The results showed that the drip irrigation farmers were having constraints like complicated procedure in getting loan, delay in sanction of initial investment is high, inadequate follow up services by drip agencies, non-availability of quality materials and rodents damage to the laterals. Remedial measures were suggested to improve drip irrigation systems were properly trained start, supply
of good quality materials should be ensured, follow up service should be ensured training the farmers on maintenance of the drip irrigation systems, ensure the adequate supply of the soluble fertilizers and immediate sanction of loan simplifying the procedure.

Palanisami and Raman (2012) examine the adoption of micro-irrigation (MI) technologies in nine states of the India. It was found drip and sprinkler systems had a positive impact in terms of water saving, yield and income enhancement at farm level. It was found that only 12.2 per cent of potential drip irrigation area and 7.8 percent of potential sprinkler area was covered in the country. Majority of the MI adopters sampled in Andhra Pradesh, Karnataka, Orissa and Punjab were belongs to small farmers. In contrast, in Maharashtra and Tamil Nadu, majority of MI adopters were belongs to large farmers. Analysis of the rate of return on MI investment indicated no significant difference in incremental net income attributed to MI across farm categories; however, there were significant differences in incremental net income of MI adopters across States. For ace relating MI adoption in the country, it was recommended to reduction in capital cost of the system, provision of technical support for regular MI operation and maintenance, relaxation of farm size limitation in providing MI subsidies and creation of a single state level agency or a special purpose vehicle for speedy implementation of the MI program.

Ghintala and Singh (2013) analyzed the knowledge and adoption of sprinklers irrigation system in the farmers of Banaskantha district in North Gujarat. It was found that the majority of the farmers adopted sprinkler irrigation which belonged to middle age group having secondary and above level of education, and medium size of land holding and also having membership in more than one organization. The farmer whose income verse from Rs.76,001 to Rs. 2,44,000 and used tube-well as an irrigation sources. It was also observed that majority of the farmers facing the problems like, “heavy initial investment for the installation of sprinkler irrigation system, difficulties in getting loans, rate of interest in loans in high and unavailability of technical guidance in time.

Karunia et al (2013) studied the factor influencing consumer’s purchase decision of formula milk in Malang city. This study has analyzed the simultaneous and partial effect of six variables on buying of formula milk, and to analyze the
variable having dominant influence on the purchasing decision of formula milk in Mangalam city. The result showed that the six variables contributed 93.5 per cent of the variation in formula milk purchasing decision. Partially, culture, social, personal, psychological and product variables positively influenced the purchasing decision of formula milk, while price variables did not significantly influence the purchasing decision of formula milk. Among these variables Culture was the most dominant variable influencing purchasing decision of formula milk.

Shahzadi (2013) studied the factors influencing adoption of pressurized irrigation systems by farmers in India. The findings revealed that education, land ownership, bank loan, land size and annual income had positive and significant effect on adoption of pressurized irrigation systems. While, age and household size had negative effect on adoption of pressurized irrigation system. The final effect revealed that bank loan had the considerable effect on the probability of pressurized irrigation system adoption by farmer. It was recommended that long-term and low-interest loans should be given to farmers.

Shukla and Dhande (2013) identified the factor influencing the purchase of drip irrigation in Jalgaon district of Maharashtra. It was found that most of the dealers were unsatisfied with the replacement policy of micro-irrigation companies and brand price, quality. It was also found that the past experience of farmers was the major factor for the purchase of drip irrigation.

Amini (2014) examined the factors affecting the adopting of drip irrigation system. It was found that the increase of efficiency, the improvement of crop quality, the need for fewer workers, the increase of performance, the increase of surface under cultivation, the explosion of rough lands, and the uniform irrigation of farms had encouraged farmers to adopt the drip irrigation system. It was also found that the sprinkler irrigation increases efficiency up to 70 per cent and drip irrigation increases efficiency up to 95 per cent, while in the surface irrigation method, the water application efficiency does not exceed 50 per cent, and sometimes it was less than 35 per cent.

2.4 SCOPE OF BUSINESS IN MIS

Narayanamoorthy (2004) examined the potential for drip irrigation in India. He suggested various technical and policy intervention for increasing the adoption of
these two water saving technologies drip and sprinkler. He suggested to find out the ways and means to convince the farmers about the economic and social feasibility of micro-irrigation. Those possible efforts are needed to convince the farmers through quality extension innovation so that the adoption of water saving technology increase to avoid water scarcity in future.

Palanisami et al (2011) analyzed the spread and economics of micro-irrigation in India. The results indicated that only about 9 per cent of MI potential was covered in the country. He suggestions reduction in capital cost of the system, provision of technical support for operation after installation, relaxation of farm size limitation in providing subsidies and the establishment of a single state level agency for implementation of the program.

John et al (2012) analysed the economics of market expansion and productivity growth in Canadian. It investigation whether entry to both new international market and new domestic market is associated with greater productivity growth. The finding of the study that firms make successful transition exhibit difference in the emphasis they showed place on market innovation. And also found that perceive high levels of market competition tend to become more competitive and successful by experimenting with new markets.

Rajput and Patel (2012) examined the present status and future scope of micro-irrigation in India. The potential for coverage under drip and sprinkler irrigation was estimated to be about 27 and 42.5 million ha respectively. The area under tea, coffee and recreational facilities including golf etc. also offer a suitable location for the adoption of micro irrigation system. He suggested micro irrigation method like drip and sprinkler need to be employed for efficient distribution and application of water for crop production.

2.5 ECONOMICS OF MICRO-IRRIGATION

Narayanamoorthy (1997) examined the economic viability of drip irrigation. The result showed that drip method of irrigation (DMI) not only contributes to water conservation and additional irrigation benefits but also reduces cultivation cost and increase the crop productivity as compared to conventional irrigation method. The net present worth (NPV) calculation showed that in the case of banana and grapes cultivation, the farmer can recover the fixed investment cost on drip irrigation system
at the end of the first year itself even in the absence of government subsidy. The economic viability of the drip system holds good even for farmer with just one hector of land. Since the benefit cost ratio computed with different discount rate stands between 2.07 and 2.36 for banana and between 1.48 and 1.80 for grapes, investment in drip irrigation system is economically viable for these crops.

Shivkumar et al (2001) estimated economics analysis of drip irrigation system in sunflower. The average establishment cost of drip layout under normal and paired row planting was Rs. 35,000 and Rs. 17,500 ha respectively. Normal planting with drip irrigation at 0.6 Epan has recorded highest net returns and benefit cost ratio due to higher seed yield. However, a comparative economics revealed that drip irrigation at 0.6 or at 0.5 Epan is more economical. Indicator of economic feasibility have revealed higher discounted B:C ratio (1.82) and positive net present value (Rs. 14,284.8) with a shortest payback period of 0.49 years under paired row method of planting at 45-90-46*30 cm.

Narayanamoorthy (2005) examined the economics of drip irrigation in sugarcane cultivation. The data collection from the sample farmer clearly showed that drip method of irrigation has many advantages over flood method of irrigation in sugarcane cultivation. While the productivity gain due to drip method of irrigation is about 54 per cent water saving due to drip irrigation comes to about 58 per cent over flood method of irrigation. Though the investment on drip irrigation in sugarcane cultivation was economically viable without subsidy. The farmer suggested that since many farmers are reluctant to adopt drip irrigation method of irrigation because of the high fixed capital, a nominal subsidy was prerequisite to increase the widespread adoption of irrigation especially among the resource poor farmers.

Luhance et al (2010) studied the economic analysis of tube well driven sprinkler irrigation and furrow irrigation for agriculture in Haryana. It was found that the average installation cost of sprinkler set worked out to be Rs. 1,30,700.00. The cost of sprinkler sets was about 42.27 per cent of the total investment for irrigation on farm. It was also conclude that by pump set (tube well) only 3.58 hectares of area was irrigated, but after acquisition of sprinkler sets, the irrigated area increased to about three folds and decline in labour use per hectare by 78 per cent. The average net returns per hectare from sprinkler irrigation were found to be 19.53 per cent higher
than pump irrigation. The pump set method (furrow irrigation) of irrigation was found uneconomical due to negative returns. Sprinkler method of irrigation resulted into an additional returns of Rs. 20098.00 from additional irrigated area i.e. 6.07 hectares. The economic feasibility criterion of net present value, internal rate of return, benefit cost ratio and payback period showed that the investment on sprinkler sets was found sound and economically viable.

Narayanamoorthy (2010) studied the economics of drip irrigated cotton in Jalgaon district of Maharashtra. It was found that drip method of irrigation saves substantial amount of water, increases productivity of crops as well as reduces cost of cultivation. Cultivating cotton under drip irrigation provides a number of different benefits to farmers over the conventional flood method of irrigation. Drip irrigation reduces cost of irrigation by about 50 per cent and helps reduce the cost on weeding, intercultural and preparatory works. Water saving in drip irrigation in cotton cultivation is estimated to be about 45 per cent of flood irrigation. This also saves the consumption of electricity by about 140 Kwh/acre compared with flood irrigation. The productivity of drip-irrigated cotton is about 114 per cent higher than the corresponding flood irrigation harvest. The profit of the cotton crop cultivated using drip irrigation is higher by about Rs. 20601/acre than the corresponding profit realized by flood irrigation. The net present worth and benefit-cost ratio estimated using discounted cash flow technique shows that the investment in drip irrigation is economically viable even without subsidy.

Sudheer (2013) studied the economics of organic farmers and chemical farmers for three crops, paddy, red gram, and groundnuts, in the state of Andhra Pradesh. It was found that organic farmers are were earned a gross income of 5 per cent, 10 per cent and 7 per cent more compared to the chemical farmers of paddy, red gram and groundnut, respectively, and with lower input costs the profits earned by the organic farmers ware higher by 37 per cent, 33 per cent and 59 per cent for the selected crops respectively.