

PERCEPTION OF FARMERS ABOUT MICRO IRRIGATION SYSTEM

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ABSTRACT

The present study was carried out with the objectives to measure perception of farmers about micro irrigation system and to know the economic, environmental and social benefits of MIS. The present study was carried out in Banaskantha district. Five villages namely Kumbhasan, Kumbhalmer, Gadh, Chadotar and Aakesan from Palanpur taluka and 5 villages namely, Vadaval, Kaant, Ranpur, Aakhhol and Zerda form Deesa taluka were selected randomly for the study. Twelve farmers who have adopted MIS from each selected village were selected. Thus, 120 farmers were selected for present study. More than half (52.50 %) of the farmers were in the old age group. Maximum numbers of respondents were found to have secondary (35.83 %) education. Majority of the farmers (80.00 %) had medium annual income. A great majority of the farmers (89.00 %) were having small to medium size of land holding. Majority (65.83 %) of the farmers had medium level of mass media exposure. Independent variables viz., annual income, land holding and mass media exposure were found having significant and positive relationship with farmers' perception about MIS. About 62.50 per cent of the farmers perceived micro irrigation system as useful. Economic and environmental benefit is concerned, 88.33 per cent of the respondents told that MIS is useful in saving of water use. Non-availability of skilled labour when required for repairing MIS (81.67 %) was the main constraint perceived by the respondents in adoption of MIS.

KEY WORDS: Correlation coefficient, Micro irrigation system (MIS), Perception

INTRODUCTION

Irrigation advancements within the last decade have been astounding. Micro irrigation is one of the latest innovations for applying water and it represents a definite advancement in irrigation technology. It can be defined as the frequent application of small quantities of water on or below the soil surface as drops, tiny streams or miniature sprays through emitters or

applicators placed along a water delivery lateral line. It differs from sprinkler irrigation by the fact that only part of the soil surface is wetted. Micro irrigation encompasses a number of methods or concepts such as bubblers, drip, trickle, mist or spray and subsurface irrigation.

Agriculture is the main economic activity in the district. Many farmers are not aware about Micro Irrigation System and

facing the problems on water stress. Thus, study of perception of farmers towards Micro Irrigation System in Banaskantha district is felt necessary withan objectives to measure perception of farmers about micro irrigation system and to know the economic, environmental and social benefits of MIS.

METHODOLOGY

The present study was carried out in Banaskantha district. The total area under MIS is 558.43 ha. in Banaskantha district. Banaskantha district has twelve talukas. Out of these twelve talukas, two talukas viz., Deesa (213.50 ha) and Palanpur (167.94 ha) were selected purposively as these talukas are having large area under micro irrigation system. Five villages namely Kumbhasan, Kumbhalmer, Gadh, Chadotar and Aakesan from Palanpur taluka and 5 villages namely, Vadaval, Kaant, Ranpur, Aakhol and Zerda form Deesa taluka were selected randomly for the study. Twelve farmers who have adopted MIS from each selected village were selected. Thus, 120 farmers were selected for present study. Data were collected with the help of pre-structured quaestiopnarrie and pre-tested schedule by interviewing the farmers personally. Correlation co-efficient of selected independent variables with farmers' perception about MIS was calculated. The reasons and constraints in adopting MIS of farmers were ranked through weighted scores, as suggested by Alen Manyevere *et al.* (2014).

RESULTS AND DISCUSSION

The facts and findings derived after analyzing the data have been presented herewith as under (Table 1 to 5).

It was observed from Table 1 that little more than half (52.50 %) of the farmers were in the old age group followed by middle age group (39.17 %). Only 8.33 per cent of the farmers were in young group. Maximum number of respondents were found to have secondary (35.83 %) and

higher secondary education (34.16 %) followed by those with primary education (25.00 %). Majority of the farmers (80.00 %) had medium annual income followed by low annual income (15.00 %). Only 5.00 per cent of the farmers had high annual income. A great majority of the farmers (89.00 %) were having small to medium size of land holding. Majority (65.83 %) of the farmers had medium level of mass media exposure. More or less similar findings were reported earlier by Khajuria (2000), Manjunatha *et al.* (2000), Latoria *et al.* (2001), Ali *et al.* (2002) and Purohit and Goyal (2017) in different studied pertaining to MIS and other modern agricultural technology.

Based on co-efficient of correlation, three variable viz., Annual income, land holding and mass media exposure were having significant and positive relationship with farmers' perception about micro irrigation system at 0.01 level of significance, whereas age and education were failed to establish any significant relationship with farmers' perception about micro irrigation system (Table 2). Purohit and Goyal (2017) also reported that farming experience, land holding size and area under drip irrigation significantly influence adoption index of farmers.

It can be seen from Table 3 that 62.50 per cent of the farmers perceived micro irrigation system as useful, whereas 32.50 per cent of them perceived as more useful and remaining 5.00 per cent of them perceived as less useful. More or less similar findings were reported earlier by Khajuria (2000), Ali *et al.* (2002) and Purohit and Goyal (2017) in different studied pertaining to MIS.

The data presented in Table 4 indicated that so far economic and environmental benefit is concerned, 88.33 per cent of the respondents told that MIS is useful in saving of water use with first rank followed by reduction in fertilizer user

(79.16 %) and 74.16 per cent of the respondents told that MIS reduces the use of fertilizers. As far as social benefit is concerned, 73.33 per cent respondents told that MIS is useful in saving of energy consumption.

The data presented in Table 5 revealed that non-availability of skilled labour for repairing MIS when required (81.67 %) was the main constraint in adoption of MIS followed by difficult to maintain water pressure (74.16 %) and clogging of drippers (71. 67 %) were ranked second and third, respectively. The findings are more or less in accordance to the findings of Chandran and Surendran (2015).

CONCLUSION

More than half (52.50 %) of the farmers were in the old age group. Maximum numbers of respondents were found to have secondary (35.83 %) education. Majority of the farmers (80.00 %) had medium annual income. A great majority of the farmers (89.00 %) were having small to medium size of land holding. Majority (65.83 %) of the farmers had medium level of mass media exposure. Independent variables viz., annual income, land holding and mass media exposure were found having significant and positive relationship with farmers' perception about MIS. About 62.50 per cent of the farmers perceived micro irrigation system as useful. Economic and environmental benefit is concerned, 88.33 per cent of the respondents told that MIS is useful in saving of water use. Non-availability of skilled labour when required for repairing MIS (81.67 %) was

the main constraint perceived by the respondents in adoption of MIS.

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Table 1: Personal characteristics of farmers

<i>n=120</i>				
Sr. No.	Characteristics	Category	Number	Per Cent
1.	Age	Young (Up to 35 years)	10	08.33
		Middle (In between 35 to 50 years)	47	39.17
		Old (Above 50 years)	63	52.50
2.	Education	Illiterate	01	00.83
		Primary education	30	25.00
		Secondary education	43	35.83
		Higher secondary education	41	34.16
		College and above	05	04.18
3.	Annual income	Low (Up to 68,000 Rs)	18	15.00
		Medium (In between 680001 to 172000 Rs)	96	80.00
		High (Above 172000 Rs.)	06	05.00
4.	Land holding	Marginal (Up to 1.00 ha)	19	15.84
		Small (In between 1.01 to 2.0 ha)	40	33.33
		Medium (In between 2.01 to 4.0 ha)	49	40.83
		Large (More than 4.00 ha)	12	10.00
5.	Mass media exposure	Low mass media exposure (Up to 22 score)	16	13.33
		Medium mass media exposure(In between 23 to 28 score)	79	65.83
		High mass media exposure(Above 28 score)	25	20.84

Table 2: Correlation co-efficient of selected independent variables with farmers' perception about MIS

<i>n=120</i>		
Sr. No.	Characteristics	'r' Value
1.	Age	0.0494 NS
2.	Education	0.1025 NS
3.	Annual income	0.3068**
4.	Land holding	0.2927**
5.	Mass media exposure	0.4769**

** = Significant at 0.01 level of significance

NS = Non significant

Table 3: Perception of farmers about usefulness of micro irrigation system
(n = 120)

Sr. No.	Category	Number	Per Cent
1.	Less useful (Up to 38 score)	06	05.00
2.	Useful (in between 38-48 score)	75	62.50
3.	More useful (Above 48 score)	39	32.50

Average: 44.71

SD: 5.96

Table 4: Distribution of the farmers according to economic, environmental and social benefits of MIS

(n = 120)

Sr. No.	Benefits	Number	Per Cent	Rank
Economic and Environmental Benefits				
1.	Increase in crop yield	65	54.16	VII
2.	Saving of water use	106	88.33	I
3.	Reduces over-extraction of ground water	72	60.00	V
4.	Reduce use of pesticide	89	74.16	III
5.	Reduction in fertilizer use	95	79.16	II
6.	Reduction in pests and diseases	68	56.66	VI
7.	Reducing weeding cost	52	43.33	VIII
Social Benefits				
1.	Saving of energy consumption	88	73.33	I
2.	Reduced water scarcity induced labour migration	48	40.00	II

Table 5: Distribution of the farmers according to constraints faced by the adoption of MIS

(n = 120)

Sr. No.	Constraints	Number	Per Cent	Rank
1.	Clogging of drippers	86	71.67	III
2.	Heavy initial investment	68	56.67	VI
3.	Difficulties in getting loans	62	51.67	VII
4.	Rate of interest in loan is high	82	68.34	IV
5.	Non availability of skilled labour for repairing MIS when required	98	81.67	I
6.	Difficult to maintain water pressure	89	74.16	II
7.	Lack of service after sale from the company dealers	54	45.00	VIII
8.	Lack of technical know-how and guidance before and after adoption	76	63.34	V