

ADOPTION OF FARM TECHNOLOGY IN WATERSHED MANAGEMENT AREA IN GONDAL SUB-DIVISION OF GUJARAT STATE

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ABSTRACT

Technologies generated by the scientist are of no use unless adopted by the farmers. The present study was undertaken with a view to know the extent of adoption of farm technology by the farmers in watershed management area. Four watersheds of Gondal sub-division covers six villages were selected randomly for the study. Ex-post facto research design was used. Majority of the respondents had medium level of adoption of farm technology in watershed management area.

INTRODUCTION

Since, 1976-77 Gujarat State had started soil and water management works under the head of Watershed Management Project. The precipitation received in the State is not only inadequate, but also erratic which results into drought conditions followed by crop failures. Treatment of the rainfed area on watershed basis is, therefore, of permanent importance for optimum use of available rainwater through soil and water conservation in situ and water harvesting structures like farm ponds, gully plugs, check dams, etc. It increases agricultural production per unit area by adopting scientific crop management and dry farming technology. The scientists have developed several agricultural technologies and adoption of these technologies is ultimately useful for increasing the agricultural productivity. Keeping in view, the present study was conducted to know the extent of adoption of farm technology by the farmers in watershed management area.

METHODOLOGY

The study was undertaken in Gondal sub-division of Rajkot. This area belongs to dry farming area in Western Gujarat. Out of 19

watersheds of 20 villages of Gondal taluka, four watersheds which covered six villages were selected randomly. The selection of respondents was made by following proportionate method. Ten per cent farmers from each watershed were selected randomly. Thus, 111 farmers was the sample size of this study. An interview schedule with a specially designed questionnaire was formed to collect the data. It was personally introduced to the respondents individually of Gondal sub-division.

There are several methods to measure the extent of adoption of farm technology utilised in watershed management area. The adoption of recommended farm technology was divided into two major groups, (i) mechanical measures, which was divided into seven practices and (ii) agronomical measures, which was divided into seventeen practices. These were identified by consulting the experts in the respective field. The weightage of particular practice was determined on the opinion of the ten experts of this field. Later on, the weightage of the each practice was summed up and mean of each was work out. The adoption quotient developed by Chattopadhyay (1974) was used with slight modification.

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RESULTS AND DISCUSSION

The data collected through structural interview schedule were analysed and tabulated under two heads as follows.

1. Mechanical measures:

The information in this regards were separated from the master table and classified as under.

Data in table 1 reveals that the majority of the respondent (97.30 per cent) had adopted the land smoothening/shapping followed by, land levelling (96.48 per cent), contour bunding (95.22 per cent) and deep ploughing (68.12 per cent). The graded bunding technology (30.07 per cent) was less adopted. While none of them had adopted nala plugging and farm pond practices.

Table 1: Practicewise extent of adoption of mechanical measures

Sr.	Name of the Practice	Weightage	Mean score	Percentage of adoption
1	Graded bunding	14.5	4.36	30.07
2	Deep ploughing	14.9	10.15	68.12
3	Contour bunding	17.8	16.95	95.22
4	Land levelling	19.6	18.91	96.48
5	Land smoothening/shapping	11.5	11.19	97.30
6	Nala plugging	10.4	00.00	00.00
7	Farm pond	11.3	00.00	00.00
Total Score		100.0		

Further, an attempt was also made to know the extent of over all adoption of mechanical measures. The data in this regards are presented in table 2.

From the data mentioned in table 2, it is observed that the majority of the respondents (64.86 per cent) belonged to medium followed by, 18.92 and 16.22 per cent of them belongs to high and low adoption mechanical measures categories, respectively.

Table 2: Distribution of respondents according to their extent of adoption about mechanical measures

Sr.	Categories	Respondent	Per cent
1	Low extent of adoption	18	16.22
2	Medium extent of adoption	72	64.86
3	High extent of adoption	21	18.92
Total		111	100.00

2. Agronomical measures:

The information regarding agronomical measures were separated from the master table and classified as under.

From the data in Table 3, it was observed that the respondents' higher adoption included early maturing, high yielding or hybrid variety (94.92 per cent) followed by crop rotation (92.96 per cent), optimum plant population (91.46 per cent) and earthing up practices (91.15 per cent). These were followed by high adoption of inter/mix cropping, use of FYM/compost manuring, use of vegetative bunds, interculturing and weeding. Those practices which had medium adoption included use of chemical fertilizers and plant protection measures. Plantation of useful trees, sowing of cover crops and

soil testing were not used frequently. The practice of contour cultivation was used to a negligible extent and mulching and strip cropping were not adopted at all.

Further, an attempt was also made to know the extent of over all adoption of agronomical measures. The data in this regards are presented in table 4.

Table 3: Practicewise extent of adoption of agronomical measures.

Sr.	Name of the Practice	Weightage	Mean score	Percentage of adoption
1	Soil testing	3.0	0.83	27.66
2	Earthing up	3.3	3.02	91.15
3	Contour cultivation	16.0	0.39	02.44
4	FYM/compost manuring	7.1	5.94	83.66
5	Chemical fertilizers	6.4	4.60	71.87
6	Interculturing	4.2	3.58	85.23
7	Weeding	5.3	4.21	79.43
8	Sowing of crops	6.2	2.83	45.65
9	Mulching	4.5	0.00	0.00
10	Strip cropping	4.7	0.00	0.00
11	Inter/mix cropping	5.1	4.27	83.73
12	Early mature, high yielding or hybrid variety	6.3	5.98	94.92
13	Optimum plant population	4.1	3.75	91.46
14	Crop rotation	7.1	6.60	92.46
15	Plant protection measures	6.1	4.03	66.07
16	Vegetative bunds	5.5	4.59	83.45
17	Plantation of useful trees	5.1	2.83	55.49
Total Score		100		

Table 4: Distribution of respondents according to their extent of adoption

Sr.	Categories	Respondent	Per cent
1	Low extent of adoption	12	10.81
2	Medium extent of adoption	87	78.38
3	High extent of adoption	12	10.81
Total		111	100.00

Table 5: Extent of overall adoption of the recommended farm technology

Sr.	Categories	Respondent	Per cent
1	Low extent of adoption	09	08.11
2	Medium extent of adoption	86	77.48
3	High extent of adoption	16	14.41
Total		111	100.00

From data in the table 4, it was observed that the majority of the respondents (78.38 per cent) had used medium agronomical measures followed by, 10.81 per cent each respondents had high and low adoption of agronomical measures.

Data of overall adoption of the recommended farm technology in watershed management area are presented in Table 5. It is observed that the majority of the respondents (77.48 per cent) were medium adopters of the recommended farm technology in watershed management area. Whereas, 14.41 per cent were high and 8.11 per cent were low adopters of farm technology in watershed management area.

CONCLUSION

The majority of the respondents were medium adopters of mechanical measures (64.86 per cent), agronomical measures (78.38 per cent) and both were pooled together (77.48 per cent) in watershed management area.

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