

Adoption of No-Cost and Low-Cost Technologies of Watershed Management by Tribal Farmer

N. G. Patel¹, P. C. Patel² and J. B. Patel³

1 & 2 Ex. M. Sc scholar, Department of Extension Education, BACA, AAU, Anand - 388 110

3 Associate Professor, Deptt. of Ext. Edu., BACA, AAU, Anand - 388 110

e-mail: jbvadodara@gmail.com

ABSTRACT

Adoption is not an instant decision. An individual passes through several mental stages in adopting certain idea. Adoption is a process through which an individual passes from first hearing of an innovation to its final adoption. The present investigation was carried out in Panchmahals district of Gujarat state with a view to find out the level of adoption of no-cost and low-cost technologies of watershed management by tribal farmers, the respondent were asked to indicate at what extent they adopted no-cost and low-cost technologies of watershed management. The findings revealed that nearly half (49.17 per cent) of tribal farmers found with high level of adoption, followed by 26.67 per cent, 23.33 per cent and 0.83 per cent of tribal farmers found with medium, high and low level of adoption regarding soil and water conservation technology whereas, 33.33 per cent of tribal farmers found with high level of adoption, followed by 30.84 per cent, 24.17 per cent, 8.33 per cent and 3.33 per cent of tribal farmers found with medium, low, very high and very low level of adoption regarding crop production technology, respectively.

Keywords: Adoption level; Tribal farmers; No-cost and low-cost technologies of watershed management.

INTRODUCTION

If the available irrigation potential is developed to its full extent, nearly 50 per cent of cultivated land will still remain under rainfed farming for the foreseeable future. The total agriculture production of rainfed area is of the order 46 per cent of the national agricultural production. Realizing the importance of dry land agriculture and in order to meet the challenge before the country to support higher level of population and better standard of living, the Government of India have accorded the highest priority to the logistic and sustainable development of rainfed areas, through adoption of holistic approach of watershed. As far as Gujarat is concerned it is predominantly the state for dry land agriculture. At present, out of 95.83 lakh hectares of total net area, about 77 per cent area is rainfed. Tribal area is potential for agriculture in the state. In Gujarat, tribal population constitutes 14.92 per cent of the total population in the state. Gujarat is fourth among the states with a sizable tribal population. Tribal largely inhabit the border and hilly tracts of Gujarat. Keeping above fact in mind it was considered worthwhile to study

knowledge of Tribal Farmers Regarding No-Cost and Low-Cost Technologies of Watershed Management. The total agriculture production of rainfed area is of the order 46 per cent of the national agricultural production.

OBJECTIVE

To analyze the level of adoption of tribal farmers regarding no-cost and low-cost technologies of watershed management.

METHODOLOGY

The study was conducted on a random sample of 120 tribal farmers of four purposively selected villages of three purposively selected talukas of Panchmahals district of Gujarat state. The data were collected by personal interview technique. The data thus, collected were classified, tabulated and analyzed in order to make the finding meaningful. The statistical measures, such as percentage, mean score, correlation and arbitrary method were used in analysis of data.

RESULTS AND DISCUSSION

Adoption level of no-cost and low-cost technologies of watershed management by the tribal farmers

Table 1 : Aspect wise adoption of tribal farmers about no-cost and low-cost technologies of watershed management. n=120

Sr No	Practices	Frequency	%	Rank
I Soil and water conservation technologies				
1	Sowing across the slops	112	93.33	II
2	Sowing as per recommended spacing	68	56.66	XIII
3	Summer ploughing	118	98.33	I
4	Contour sowing	91	75.83	V
5	Vegetative bunds	70	58.33	XI
6	Dividing field with small bunds	82	68.33	VIII
7	Small earthen bunds	80	66.67	IX
8	Land leveling	100	83.33	IV
9	Tillage across the slops	109	90.83	III
10	Stubble and agro waste plucking	85	70.83	VII
11	Natural grasses on boundaries and waterways.	73	60.83	X
12	Afforestation	69	57.5	XII
13	Recharge trench	89	74.17	VI
14	Irrigation in alternative row and furrow	--	--	--
II Crop production technologies				
1	Selection of short durational variety	91	75.83	I
2	Timely sowing	80	66.66	V
3	Intercropping	58	48.33	VII
4	Mid season correction	53	44.16	VIII
5	Use of organic manures	82	68.33	IV
6	Use of neem coated chemical fertilizer as urea	60	50.00	VI
7	Interculturing	86	71.67	II
8	Weed management			
	(i) Hand weeding	85	70.83	III
	(ii) Use of herbicides	21	17.50	XI
9	Supplementary irrigation	47	39.16	IX
10	Planting of tree on farm boundary / in waste land	41	34.16	X

The result in Table-1 indicates that from various soil and water conservation technologies viz., summer ploughing was adopted by 98.33 per cent tribal farmers and was ranked first, followed by sowing across (93.33 per cent) and tillage across slope (90.83 per cent) were ranked second and third, respectively. The technologies viz., land leveling (83.33 per cent) and contour sowing (75.83 per cent) were assigned fourth and fifth rank, respectively. Sixth rank was assigned to recharge trench (74.17 per cent). Seventh rank was assigned to stubble and agro waste plucking (70.83 per cent), while dividing field with small bunds (68.33 per cent), small earthen bunds (66.67 per cent), natural grasses on boundaries (60.83 per cent), vegetative bunds (58.33 per cent), afforestation (57.50 per cent) and sowing as per recommended spacing (56.66 per cent), were ranked 8th, 9th, 10th, 11th, 12th and 13th, respectively. While irrigation in alternative row and furrow was not adopted by any respondent, the probable reason might be that lack of information and skill oriented farmer about irrigation in alternative row and furrow.

So, far as crop production technology is concerned the technologies viz., use of improved / hybrid / short duration varieties was adopted by majority (75.83 per cent) of tribal farmers ranked first, followed by inter-culturing (71.67 per cent) and hand weeding (70.83 per cent) and were ranked second and third respectively. The technologies viz., use of organic measure (68.33 per cent), timely sowing (66.66 per cent) and use of neem coated urea as chemical fertilizer (50.00 per cent) were found in fourth, fifth and sixth rank respectively. Seven and eight rank was assigned to intercropping (48.33 per cent) and mid season correction (44.16 per cent), respectively. The practices viz., supplementary irrigation (39.16 per cent) and planting tree on fellow land / boundary (34.16 per cent) were ranked 9th, 10th, respectively and chemical method of weed control (17.50 per cent) viz., ranked last.

Overall adoption level

Table 2: Distribution of tribal farmers according to their overall adoption level of no-cost and low-cost technologies of watershed management n=120

Sr. No.	Overall adoption level categories	Frequency	Per cent
1	Very low (Up to 20 score)	00	0.00
2	Low (21 – 40 score)	01	0.83
3	Medium (41 – 60 score)	44	36.67
4	High (61 – 80 score)	63	52.50
5	Very high (Above 80 score)	12	10.00

Table-2 indicated that majority (52.50 per cent) of the tribal farmers had high level of overall adoption followed by 36.67 per cent, 10.00 per cent and 0.83 per cent had medium, very high and low level of overall adoption. None of the tribal farmers fall under the categories of very low level of overall adoption about no-cost and low-cost technologies of watershed management.

CONCLUSION

From the above results we can conclude that nearly cent per cent of tribal farmers had medium to very high level of overall adoption about no-cost and low-cost technologies of watershed management. The probable reason behind high to medium level of adoption of tribal farmers might be due to their very high level of extension contact and medium to high level of mass media exposure, besides their primary to secondary level of formal education might have encouraged them to take interest in various awareness programmes run by State Agricultural Department, SAUs., Watershed Management Agencies, K.V.K., NGO's and Vanbandhu Welfare Programmes of Tribal Development Department. Here, none per cent of tribal farmers had very low level of overall adoption which is mainly attributed to literacy, means understandable educational status. The use of improved/hybrid /short duration varieties was the most adopted practices followed by inter culturing, hand weeding and use of organic manures, respectively. The probable reason might be that the farmers have increased their crop production per unit area by adopting improved / hybrid variety without bearing more expenses. Another reason might be that the improved varieties are being easily available at everywhere.

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Received : September 2015 : Accepted : December 2015