

Adoption of Watershed Practices by the Respondents of Sujala Watershed*

Indian Agriculture is primarily rain dependent. Rain is the only source of water for dryland crops. Rainfed agriculture supports 40.00 per cent of human population contributing 44.00 per cent to the total food production. The fate of rainfed agriculture oscillates with the quantity and spatial distribution of monsoon. The treatment to stabilize and to enhance productivity in dryland agriculture depends upon conservation of rain water. To meet the regularly growing demand for food grain and other agriculture commodities, judicious use of natural resources is essential (Hemalatha *et al.*, 1996). In order to achieve economic upgradation of human life in rainfed areas, it becomes imperative to improve rainfed agricultural systems through adoption of watershed technology. The watershed management is an medium adoption category might be the medium to high

knowledge possessed by majority of the respondents. Since, knowledge limits the action of individuals, as it is the basic pre-requisite for any individual to think of the pros and cons in making a decision, either to adopt or reject practice, majority of the respondents never contracted extension personnel. The findings in conformity with the results of Sundrambal (1994), Khade *et al.* (1998) and Jondhale *et al.* (2000). In the present situation to achieve impact of adoption level of the beneficiaries of Sujala Watershed area, a list of recommended practices to be followed is prepared in consultation with district watershed development authority. Respondents were asked questions to know whether they adopted them or not, then each practice was given a score of zero and one for no adoption and for complete adoption, respectively. Further, after computing the adoption

Table 1. Overall adoption level of watershed practices by the respondents

Sl. No.	Adoption category	Frequency	Percentage	Mean adoption score
1.	Low (mean - SD) <8.06	46	30.67	6.92
2.	Medium (mean $\pm$ SD) 8.07 -16.58	87	58.00	13.78
3.	High (mean + SD) >16.58	17	11.33	20.50
Mean = 12.32		SD = 4.26		

Table 2. Adoption of individual watershed practices by the respondents

Sl. No.	Description	Before Watershed		After watershed		Per cent increase
		Freq.	%	Freq.	%	
I	Soil and water conservation practices					
1.	Ploughing across the slope	62	41.33	106	70.66	29.33
2.	Land smoothening	102	68.00	138	92.00	24.00
3.	Contour bunds	22	14.66	105	70.00	55.34
4.	Strengthening of existing bunds	38	25.33	102	68.00	42.67
5.	Vegetative bunds	6	4.00	21	14.00	10.00
6.	Water ways	23	15.33	89	59.33	44.00
7.	Construction of small section bunds	66	44.00	74	49.33	5.33
8.	Opening of furrows	71	47.33	88	58.66	11.33
9.	Use of improved Agril. implements	4	2.66	19	12.66	10.00
10.	Farm pond	0	0.00	22	14.66	14.66
II	Crop production practices (paddy)					
1.	Variety - Intan, Abhilash	12	8.00	74	49.33	41.33
2.	Seed rate - 30-35 kg / ac	67	44.66	135	90.00	45.34
3.	Seed treatment	14	9.33	42	28.00	18.67
4.	Time of sowing (May - June)	150	100.00	150	100.00	-
5.	Spacing - 20 cm X 10 cm	54	36.00	131	87.33	51.33
6.	Method of planting					
I	a.Sowing by seed drill	138	92.00	148	98.60	6.60
	b.Transplanting *	27	18.00	38	25.33	7.33
7.	Application of FYM	107	71.33	126	84.00	12.67
8.	Fertilizer application	58	38.66	112	74.66	36.00
9.	Plant protection	13	8.66	67	44.66	36.00
III	Alternate land use system					
1.	Agro-forestry	12	8.00	43	28.66	20.66
2.	Agro-horticulture	8	5.33	36	24	18.67
3.	Silvi-pasture	0	0	0	0	0

* Multiple responses possible

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Table 3. Production and productivity level of paddy

Sl. No.	Category	Before watershed	After watershed	Percent increase
1.	Mean Production (q / acre)	12	15	25.00
2.	Mean Production (kg / acre)	1300	1650	27.77

quotient, the respondents were grouped into High, Medium and Low categories by taking the mean and standard deviation as the measure of check. The findings of table I reveals that there was less per cent change with regard to adoption of soil and water conservation practices namely land smoothening, opening of furrows, construction of small section bunds, vegetative bunds and use of improved agricultural implements. The reasons for low adoption by the respondents were given as these practices are not suitable, require more time, difficult to do intercultivation, scattered land holding, non-availability of required plant types in time are problems as expressed by the respondents.

In the present study, it was observed that cent per cent of the respondents adopted time of sowing. The reason that may be attributed to the above findings is, as the study area is rainfed the recommended time of sowing is before June and most probably monsoon sets within June and July. The above finding was in congruity with the findings of Balamatti (1993) and Saikrishna (1998). It was also observed that more than 40.00 per cent increase in respect of adoption about seed rate 45.34 per cent, spacing 51.33 per cent and improved seed variety 41.33 per cent. This may be due to simplicity, low cost of the practices as well as to obtain more yield. It may be also due to their experience and guidance received from extension personnel. It was also evident from table 2 that very few respondents had adopted seed treatment and plant protection.

The possible reason for this might be that very few respondents had knowledge about seed treatment and expensive chemicals. Cent per cent of the respondents had not adopted the silvi-pasture land use system. The main reason was due to non-availability of planting materials and inadequate knowledge of the respondents. These findings are in conformity with the results of Balamatti (1993) and Saikrishna (1998). The results presented in table 3 give better idea about the difference in crop production and productivity in the pre and post-project period by virtue of implementation of Sujala Watershed Project. It could be inferred that percentage increase in crop production and productivity obtained by the farmers was considerably higher over preproject period. The possible reasons that could be attributed to this phenomenon is that the farmers had medium level of knowledge and adoption of recommended cultivation practices of paddy crop. When the farmers were interviewed by probing into production and productivity, they said that the increase in production and productivity directly depends on the availability of water. As a result of watershed treatment, there was additional storage of moisture in the soil profile due to the in situ conservation, ground water recharge and surface storage. Due to this factor, production and productivity have increased considerably in project area. The result is in conformity with the findings of Singh *et al.* (1995), Hazra (1998) and Patil (1999).

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