Agriculture Update | February & May 2010 | Vol. 5 | Issue 1 & 2| 191-193 | *RESEARCH ARTICLE*

Adoption of soil and water conservation practices by the farmers in Vidarbha, Maharashtra

A.G. DIGHE AND U.U. RAJPUT

See end of the article for authors' affiliations

Correspondence to :

A.G. DIGHE
Department of Agriculture, Extension, M.V.P.S. College of Agriculture, NASIK (M.S.) INDIA

ABSTRACT

A survey of 150 proportionately selected sample of farmers from Nandura Panchayat Samiti of Buldhana district of Vidarbha in Maharashtra revealed that majority of farmers had low level of extent of adoption SWCPs. Age, education, land holding, occupation, extension contact, risk preference and attitude had 62.12 per cent variation in extent of adoption. Level of annual income, soil type, social participation and extend of knowledge were determining factors of extend of adoption of SWCPs.

Key words : Adoption, Extent of adoption and SWCPs

Accepted : ***January, 2010***

INTRODUCTION

Land and rain water are two primary resources associated with agriculture production. As consequences of increasing pressure on land the natural balance between the soil forming and soil conserving processes has been affected to serious problem of soil erosion. According to rough estimate, out of total geographical areas of 239 m ha of our country about 173 m ha are subjected to varying degrees and forms of soil erosion. The Vidarbha region of Maharashtra is spread over 11 districts, having 57.33 per cent cultivated areas, out of total geographical area of the region. The success or failure of crops, particularly under rainfed conditions solely depends on the rainfall pattern and the fertile land is eroded due to various reasons. There is need to study the status of farmers about soil and water conservation practices (SWCPs) in this region and to motivate them for adoption of various soils and water conservation practices.

METHODOLOGY

The present investigation was carried during the year 2004 in Nandura Panchayat Samiti of Buldhana district of Vidarbha in Maharashtra. A sample of 150 farmers was taken from ten selected villages, with the help of simple random sampling method. The data were collected by interviewing the farmers with the help of interview schedule. An exploratory design of social research was used for this study. For the measurement of extent of adoption, a list of soil and water conservation practices was prepared and responses of the farmers were collected on it. Extent of adoption was measured on three-point continuum *i.e.* complete, partial and non-adoption.

RESULTS AND DISCUSSION

The results obtained from the present investigation are presented below:

Practice wise adoption of SWCPs:

It is observed from Table 1 that most of farmers had tillage operations and across the slope sowing was adopted completely by 76.00% and 34.66% farmers. The majority of the respondent adopted partially the practices such as intercropping (81.33%), brushwood dam at outlet (72.00%), gully plugging (62.66%), earthen bund (52.66%) and mulching (38.66%). Loose boulder structure and sunken farm pond was adopted by (34.66%) and (32.00%) farmers. Live fencing grasses in water ways and *Kharif* fallow were adopted by (22.66%), (11.33%) and (10.66%) farmers, respectively. On the contour sowing, surface drains, contour bunds, vetiver bunds, lucaena bunds, cement plug, live check dam, counter vegetative hedges, green manuring and use of

Table 1: Distribution of respondents according to practice wise extent of adoption about SWCPs

Sr. No.	Soil and water conservation practices	Extent of adoption (n=150)		
		Complete	Partial	Non- adoption
1.	Sowing direction			
	a. Across the slope	52 (34.66)	14 (9.33)	84 (56.00)
	b. On the contour	0 (0.00)	8 (5.33)	142 (94.66)
2.	Cropping system			
	a. Intercropping	19 (12.66)	122 (81.33)	9 (6.00)
	b. *Kharif* fallow	0 (0.00)	8 (5.33)	142 (94.66)
3.	Tillage operations	114 (76.00)	36 (24.00)	0 (0.00)
4.	Surface drains	0 (0.00)	6 (4.00)	144 (96.00)
5.	Underground drains	0 (0.00)	0 (0.00)	150 (100.00)
6.	Contour bund	0 (0.00)	8 (5.33)	142 (94.66)
7.	Vegetative bund			
	a. Vetiver bund	0 (0.00)	9 (6.00)	141 (94.00)
	b. Lucaena bund	0 (0.00)	14 (9.33)	136 (90.66)
8.	Graded bund	0 (0.00)	0 (0.00)	150 (100.00)
9.	Earthen bund	18 (12.00)	79 (52.66)	53 (35.33)
10.	Brushwood dam at outlet	0 (0.00)	108 (72.00)	42 (28.00)
11.	Loose boulder structure	0(0.00)	52 (34.00)	98 (65.33)
12.	Cement plug	0 (0.00)	5 (3.33)	145 (96.66)
13.	Live check dam	0 (0.00)	4 (2.66)	146 (97.33)
14.	Vegetative filter strips	0 (0.00)	0 (0.00)	150 (100.00)
15.	Counter vegetative hedges	0 (0.00)	4 (2.66)	146 (97.33)
16.	Live fencing	0 (0.00)	34 (22.66)	116 (77.33)
17.	Green manuring	0 (0.00)	11 (7.33)	139 (92.66)
18.	Dugout sunken pond	0 (0.00)	48 (32.00)	102 (68.00)
19.	Grasses in waterways	0 (0.00)	17 (11.33)	133 (88.66)
20.	Overseeding of grasses	0 (0.00)	0 (0.00)	150 (100.00)
21.	Gully plugging	0 (0.00)	94 (62.66)	56 (37.33)
22.	Use of soil amendments	0 (0.00)	3 (2.00)	147 (98.00)
23.	Mulching	4 (2.66)	58 (38.66)	88 (58.66)

Figures in parenthesis indicate percentage

soil amendments were adopted by less than (10.00%) of the farmers.

Level of adoption of SWCPs.:

It is observed from the data presented in Table 2 that majority of farmers (54.67) had low extent of adoption of SWCPs followed by those with a medium level of adoption (36.00). Only 9.33 per cent of the farmers had relatively high level of extent of adoption. Similar results were reported by Anonymous (1994), Ingle and Kude (1997) and Kadam *et al.* (2001).

Table 2 : Distribution of farmers according to level of extent of adoption about SWCPs.

Adoption level	Frequency (n = 150)	Percentage
Low	82	54.67
Medium	54	36.00
High	14	9.33
Total	150	100.00

Relational analysis:

The finding relational analysis in Table 3 show that age, education, land holding, occupations, extension contact, risk preference and attitude were observed to be non-significantly influencing the extent of adoption. Further, all the dependent variables together have producing 62.12 per cent variation in the extent of adoption of soil and water conservation practices by farmers at 0.01 level of probability. It could thus be inferred that annual income, soil type, social participation and extend of knowledge were the important determining factors of extent of adoption of soil and water conservation practices interfere worth while to create awareness of this technology among the farmers.

Table 3: Correlation and multiple regressions co-efficient of independent variables with adoption SWCPs by farmers

Sr. No.	Characteristics	Coefficient correlation (r)	Regression coefficient (b)	SE of b	't' value of b
1.	Age	-0.023	0.085	0.076	1.12
2.	Education	0.302**	0.082	0.278	0.29
3.	Land holding	0.458**	0.952	0.741	1.28
4.	Occupation	0.173*	1.046	0.950	1.10
5.	Annual income	0.516**	0.298	0.087	2.75**
6.	Soil type	-0.176*	-4.824	1.397	3.45**
7.	Social participation	0.363**	1.275	0.525	2.43*
8.	Extension contact	0.475**	0.228	0.869	0.26
9.	Risk preference	0.396**	0.043	0.416	0.10
10.	Attitude	0.450**	0.125	0.101	1.23
11.	Extent of knowledge	0.632**	0.472	0.088	5.37**

R^2 = 0.6212**

* and ** indicate significance of values at P=0.05 and 0.01, respectively

The regression analysis further brought that the education, soil type, social participation and risk preference were contributing positively and significant to the variance in adoption of farmers about SWCPs. The variables age, land holding, occupation, annual income and extension contact were further non significant with adoption of SWCPs.

Conclusion:

It is concluded that on the basis of findings that most of the farmers are having low level of adoption about soil and water conservation practices. The extension agency should play dominant role in educate farmers. This will help improving the pace of adoption to great extent as extent of extension agency contact directly related with adoption behaviour. Further, it is to say that organized and carefully supervised demonstration, training, guidance and field visit of soil and water conservation practices would provide good opportunities to the farmers to get convinced about importance and motivation for adoption.

Authors' affiliations

U.U. RAJPUT, Agro Product Development Centre, Dr. Panjabrao Deshmukh Krishi Vidaypeeth, AKOLA (M.S.) INDIA

REFERENCES

Anonymous (1994). Sociological evaluation of impact of watershed development programme and problems in implementation of progamme. *Agresco Report MPKV RAhuri*. pp. 14-20.

Bhople, R.S. (1997). Adoption of soil and water conservation technologies by farmers. *J. Maharashtra Agric. Univ.* **22**(2): 246-247.

Bhople, R.S., Sagne, M.S. and Nikhade, D. M. (1991). Constraints in adoption of dryland techolgy *J. Extn. Educ*., **10** (1) : 61-67.

Khatik, G.L. (1999). Adoption of soil and water conservation technologies. *Indian J. Extn. Educ*., **35** (1&2): 47-48.

Ingle, P.O. and Kude, N.R. (1997). Evaluation of watershed development project with reference to low and no cost soil and water conservation practices. *PKV. Res. J.*, **21** (1):64-67.

Kadam, J.R., Patil, V.G. and Hardikar, D.P. (2001). Knowledge and adoption of soil and water conservation practices in watershed development project. *Maharashtra J. Extn. Educ*., **20** :138-140

Khedkar, V.I. and Ingle, P.O. (1994). Awareness' and adoption of soil and water conservation practices by farmers in saline tract of Purna Valley. *Agril. Extn. Rev*., **6** (6):14-17.

Padmaiah, M.S., Rao, Roma Mohan, Chittaranjan, C. and Selvarajan, S. (1992). Impact of watershed management programme on knowledge, attitude and adoption behaviour of farmers in Jaladaresi watershed of Bellary distict, Karnataka. *Indian. J. Soil Cons*., **20** (1&2):37-43.

****
******