

Adoption of soil and water conservation practices by farmers

L.S. THAKARE, A.N. DESHMUKH AND A.O. TRIPATHI

See end of the article for authors' affiliations

Correspondence to :

A.N. DESHMUKH

Department of
Extension Education,
Shri Shivaji Agriculture
College, AMRAVATI
(M.S.) INDIA

ABSTRACT

A survey of 120 proportionally selected sample of farmers from Amravati Taluka of Amravati district of Vidarbha in Maharashtra revealed that majority of respondents were from middle age group and belonged to educated upto college and above. Then majority of farmers possessed semi medium level of land holding while the respondents had low level of social participation and medium level of extension contact and majority of respondents were found to have medium level of innovativeness and high level of cosmopolitness and most of respondents were having medium level of knowledge and medium level of awareness about S.W.C.Ps. It was observed that out of 11 variables age, land holding and social participation were found to be non significant with adoption of S.W.C.Ps. and education, annual income, cosmopolitness, innovativeness, socio-economic station, knowledge and awareness were found to be positively significant with adoption of S.W.C.Ps.

INTRODUCTION

Land and rain water are two primary resources associated with agriculture production. According to an estimate of the central ground water board, if we continue to exploit our ground water indiscriminately then in the next 20 years, 15 states of the country may face acute shortage of underground water. As consequences of increasing pressure on land, the natural balance between the soil farming 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 out during the year 2009 in Amravati Taluka of Amravati district of Vidarbha in Maharashtra.

A sample of 120 farmers was taken from 15 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 respondents of the farmers were collected on it. Extent of adoption was measured on three continuum *i.e.* complete, partial and non-adoption.

RESULTS AND DISCUSSION

The result obtained from the present investigation are presented below :

Practicewise adoption of soil and water conservation practices :

It is observed from Table 1 that most of farmers had summer ploughing tillage operations and sowing across the slope were adopted completely by 90.83% and 60% farmers. The majority of the respondents adopted partially the practices such as intercropping (60.00%), gully ploughing (65%), earthen bund (50%) and mulching (60%). Loose boulder structure and sunken farm pond was adopted (55.83%) and (32.00%) farmers. 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 soil

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Table 1 : Distribution of respondent according to extent of adoption about S.W.C.Ps.

Sr. No.	Soil and water conservation practices	Extent of adoption		
		Complete	Partial	Non adoption
Low cost and no cost of SWCPs				
1.	Summer ploughing	109 (90.83)	6 (5.00)	5 (4.16)
2.	Sowing across the slope	72 (60.00)	32 (26.66)	16 (13.33)
3.	Contour sowing of crops	0 (0.00)	12 (10.00)	108 (90.00)
4.	Preparation of broad bed furrows	8 (6.66)	68 (56.66)	44 (36.66)
5.	Intercropping	8 (6.66)	72 (60.00)	40 (33.33)
6.	Frequent hoeing during dry spell	0 (0.00)	85 (70.83)	35 (29.16)
7.	Earthen bunds	24 (20.00)	60 (50.00)	36 (30.00)
8.	Loose boulder structure	0 (0.00)	67 (55.83)	53 (44.16)
9.	Mulching	6 (5.00)	72 (60.00)	42 (35.00)
Mechanical and hardware SWCPs				
10.	Contour bunding	0 (0.00)	35 (29.16)	85 (70.83)
11.	Continuous contour trench - CCT	0 (0.00)	23 (19.16)	97 (80.83)
12.	GB - Graded bunding	5 (4.16)	75 (62.5)	40 (33.33)
13.	Bench terracing	0 (0.00)	0 (0.00)	120 (100.00)
14.	Gully ploughing	0 (0.00)	78 (65.00)	42 (35.00)
15.	Farm pond	62 (51.66)	43 (35.83)	15 (12.5)

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 (66.66%) had medium level of extent of adoption of S.W.C.Ps. followed by these with a low level of adoption (17.5%) and only (15.83%) of the farmers had relatively high level of extent of adoption. Similar results were reported by Rathod and Ingle (2009), Patil (2006) and Kadam *et al.* (2001).

Table 2 : Distribution of farmers according to level of extent of adoption about S.W.C.Ps.

Adoption level	Frequency (n=120)	Percentage
Low	21	17.50
Medium	80	66.66
High	19	15.83
Total	120	100.00

Level of knowledge of soil and water conservation practices:

It is observed from the data Table 3 that majority of the farmers (69.16%) had a medium level of knowledge about SWCPs followed by low level of knowledge (10.00%) and 20.83% farmers had relatively high level of extent of knowledge. Similar results were reported by Thakur (2007), Bhopale *et al.* (2002), Kadam *et al.* (2001),

Table 3 : Distribution of farmers according to level of knowledge about S.W.C.Ps.

Adoption level	Frequency (n=120)	Percentage
Low	12	10.00
Medium	83	69.16
High	25	20.83
Total	120	100.00

Rathod and Ingle (2009).

The regression analysis further brought that the education, annual income, innovativeness, extension contact, cosmopolitness, socio-economic status, awareness and extent of knowledge were contributing positively and significant to the variance in adoption of farmers about S.W.C.Ps. The variables like age, land holding and social participation were further non-significant with adoption of S.W.C.Ps.

Relational analysis:

The finding relational analysis in Table 4 show that age, land holding and social participation were observed to be non-significant influencing the extent of adoption. Further, the dependent variables together have producing 66.66% variation in the extent of adoption of soil and water conservation practices by farmers at 0.01 level of probability. It could there be informed that, education, annual income, cosmopolitness, innovativeness, socio-economic status, awareness and extent of knowledge were the

Table 4 : Correlation and multiple regression co-efficient of independent variables with adoption SWCPs. by farmers

Sr. No.	Variables	Adoption	
		'r'	't'
1.	Age	0.0263	0.285 NS
2.	Education	0.2164	2.403*
3.	Land holding	0.0686	0.756 NS
4.	Annual income	0.2043	2.268*
5.	Cosmpoliteness	0.2095	2.326*
6.	Social participation	0.0235	0.255 NS
7.	Innovativeness	0.2079	2.298*
8.	Extension contact	0.2410	2.697**
9.	Socio-economic status	0.2096	2.327*
10.	Awareness	0.2407	2.683**
11.	Extent of knowledge	0.2168	2.403*

* and ** indicate significance of values at P = 0.05 and 0.01, respectively
NS-Non significant

important determining factor of extent of adoption of soil and water conservation practices interfere worth while to create awareness of this technology among the farmers.

Constraints

Major constraints observed while conducting this study that those farmers (80%) who have small land holding hesitated to do farm ponds. Improper contact with extension person (62%) and construction of farm pond is expensive due to irregularity of rainfall (75%), lack of technical knowledge and information (78%).

Conclusion:

It is concluded that on the basis of findings that most of the farmer were having medium level of adoption about

soil and water conservation practices. The extension agency should play dominant role to educate farmers about S.W.C.Ps.

Authors' affiliations:

L.S. THAKARE, Department of Extension Education, Shri Shivaji Agriculture College, AMRAVATI (M.S.) INDIA

A.O. TRIPATHI, Department of Agricultural Economics and Statistics, Shri Shivaji Agriculture College, AMRAVATI (M.S.) INDIA

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