

# Knowledge 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  
Agricultural Extension,  
M.V.Ps College of  
Agriculture, NASIK  
(M.S.) INDIA

## ABSTRACT

A survey of 150 proportionately selected samples of farmers from Nandura Panchayat Samiti of Buldhana District of Vidarbha in Maharashtra revealed that a majority of farmers had medium level of extent of knowledge of soil and water conservation practices (SWCPs). Age, education, land holding, extension contact, risk preference and attitude of farmers go hand in hand with their extent of knowledge about SWCPs.

## 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. 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 condition solely depends on the rainfall pattern. However, it was observed that the farmers in drought prone area are to go only *Kharif* crops and only few *Rabi* crops. The problem is also that heavy losses are incurred due to non-conservation of soil and water during the rainy season. 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 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 knowledge, a list of soil and water conservation practices was prepared and responses of the farmers were collected on it. Extent of knowledge was ascertained on the basis of correctness or incorrectness of replies.

## RESULTS AND DISCUSSION

The findings of the present study as well as relevant discussion have been summarized under following heads:

### Practice wise knowledge of SWCPs :

It is observed from the Table 1 that majority of the farmers in general were aware about intercropping (100.00%), tillage operations (100.00%), earthen bund (94.66%), brushwood dam at outlet (84.66%), gully plugging (81.33%), live fencing (64.66%), mulching (62.66%), loose boulder structure (60.00%) and dug out sunken pond (58.00%). The least known practices were on contour sowing, underground drains, contour bunds, vegetative bunds, cement plug, live check dam, contour vegetative hedges, overseeding of grasses and use of soil amendment. However, none of the farmers was aware about graded bund and vegetative filter strips

**Key words :**  
Knowledge, Soil  
and water  
conservation,  
SWCPs

Accepted :  
March, 2010

**Table 1: Distribution of farmers according to knowledge about SWCPs**

Sr. No.	Soil and water conservation practices	Extent of knowledge (n=150)	
		Frequency	Percentage
1.	Sowing direction		
	Across the slope	82	54.66
	On the contour	19	12.66
2.	Cropping system		
	Intercropping	150	100.00
	<i>Kharif</i> fallow	78	12.66
3.	Tillage operations	150	100.00
4.	Surface drains	48	32.00
5.	Underground drains	9	6.00
6.	Contour bund	34	22.66
7.	Vegetative bund		
	Vetiver bund	21	14.00
	Lucaena bund	44	29.33
8.	Graded bund	0	0.00
9.	Earthen bund	142	94.66
10.	Brushwood dam at outlet	127	84.66
11.	Loose boulder structure	90	60.00
12.	Cement plug	22	14.66
13.	Live check dam	15	10.00
14.	Vegetative filter strips	0	0.00
15.	Counter vegetative hedges	41	27.33
16.	Live fencing	97	64.66
17.	Green manuring	58	38.66
18.	Dugout sunken pond	87	58.00
19.	Grasses in waterways	48	32.00
20.	Overseeding of grasses	8	5.33
21.	Gully plugging	122	81.33
22.	Use of soil amendments	21	14.00
23.	Mulching	94	62.66

**Level of knowledge of SWCPs.:**

It is observed from the data presented in Table 2 that majority of farmers (56.00) had medium level of extent of knowledge of SWCPs followed by those with a high level of knowledge (23.33). Only 20.67 per cent of the farmers had relatively low level of extent of knowledge. Similar results were reported by Anonymous (1994), Ingle and Kude (1997) and Kadam *et al.* (2001).

**Table 2: Distribution of farmers according to knowledge about SWCPs**

Knowledge level	Frequency (n = 150)	Percentage
Low	31	20.67
Medium	84	56.00
High	35	23.33
Total	150	100.00

**Relational analysis:**

The finding of relational analysis in Table 3 show that age, education, land holding, occupations, extension contact, risk preference and attitude of farmers go hand in hand with their extent of knowledge about SWCPs. The farmers with young age, higher education, large land holding, more annual income and social participation, good extension contact and higher risk preference and attitude tend to possess more extent to knowledge about SWCPs.

The regression analysis further brings about that the education, land holding and attitude were contributing positively and highly significant to the variance in knowledge of farmers about SWCPs, while soil type and social participation have contributed significant at 0.01 level of probability. The variables like age, occupation, annual income, extension contact and risk preference were non-significant with knowledge of SWCPs. Further, all independent variables taken together accounted for

**Table 3: Correlation and multiple regressions co-efficient of independent variables with knowledge of SWCPs**

Sr. No.	Characteristics	Coefficient correlation (r)	Regression coefficient (b)	SE of b	't' value of b
1.	Age	-0.233**	0.068	0.083	0.80
2.	Education	0.580**	0.687	0.278	2.47*
3.	Land holding	0.197*	1.582	0.802	1.97*
4.	Occupation	0.133	1.689	1.033	1.64
5.	Annual income	0.220**	1.335	0.809	1.65
6.	Soil type	-0.016	-5.855	1.516	3.86**
7.	Social participation	0.380**	1.826	0.565	3.23**
8.	Extension contact	0.307**	1.065	0.937	1.14
9.	Risk preference	0.607**	0.657	0.433	1.52
10.	Attitude	0.747**	0.216	0.087	2.50*

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

$R^2 = 0.5422^{**}$

54.22 per cent variation in the level of extent of knowledge of farmers. It was found to be statistically significant at 0.01 level of probability.

### **Conclusion:**

It is concluded that on the basis of findings that most of the farmers were having medium level of knowledge about SWCPs. The extension agency should play dominant role to educate farmers. This will help in improving the pace of adoption to a great extent as extent of extension agency contacts directly related with adoption behavior. Further, it is advised that organized and carefully supervised result demonstration, training, guidance and field visit of SWCPs would provide good opportunities to the farmers to get convinced about impotence and motivates for adoption.

---

Authors' affiliations:

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

---

### **REFERENCES**

**Anonymous** (1994). Sociological evaluation of impact of watershed development programme and problems in implementation of programme. Agresco Report Mahatma Phule Krishi Vidyapeeth Rahuri, 14-20.

**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. Edu.*, **20**:138-140

\*\*\*\*\*  
\*\*\*\*\*