Soil Conservation Competencies of the Farmers in the Watershed Area of Vijaypur Block of Jammu

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ABSTRACT

Over exploitation of natural resources by growing population has resulted in various severe problems. Destruction of vegetation has resulted in land degradation, denudation and soil erosion, The soil erosion has converted most of the fertile soils of Jammu and Kashmir into barren, fallow and degraded lands. Recently about 31 per cent (7,02,0000 ha) of the total geographical area of Jammu and Kashmir is found to be highly degraded. The purpose of this study was to examine factors affecting adoption of soil conservation technologies by farmers in watershed area of block Vijaypur. A random sample of 125 farmers was selected for participation in the study. Data was collected through personal interviews with participants at their farms. Overall, farmers tended not to be aware or have low levels of awareness with respect to soil conservation technology. Farmers tended to agree or were unsure about soil conservation technology. The most selected sources of information were fellow farmers, friends and relatives, radio programs, extension agents, and television programs. The least selected sources of information were extension films/movies and local leaders. Concerns over awareness of soil conservation practices, technology, and responsibility for conservation are discussed.

Key words: Land degradation; Denudation; Soil erosion; Soil conservation technologies ;

Soil, water and vegetation are the three basic resources which nature has provided as assets to human beings. Over exploitation of natural resources by growing population has resulted in various severe problems. Destruction of vegetation has resulted in land degradation, denudation, soil erosion, landslides, floods, drought and unbalanced eco-system. A balance eco-system is thus an urgent need of the hour. Land degradation is one of the serious problems afflicting land productivity in rainfed areas. The productivity of these lands is not only low but highly unstable. Soil erosion leading to high runoff, sizeable loss of soil and nutrient is primarily responsible for low productivity in rainfed areas. Soils, the main anchor of production and productivity, are getting thinner and poorer by the day. Water is getting scarcer day by day because of poor management of natural resources. About 12 percent of the total area of Jammu region constitutes dry semi-hilly belt. The lower shivalik rainfed area of Jammu has unique land, soil and climatic features represent a semi-arid or sub-humid type climate but generally the climate of the whole area is characterized by sub-tropical nature. The rainfed foothill region locally known as Kandi area of Jammu is characterized by deep water table, undulating terrain, frequent droughts, low soil organic matter and coarse textured soils *(Arora et al.2007)*. About eighty percent of the rains occur in first two and half months of monsoon season with high intensity rainstorms. During the rainy season the soil erosion is heavy resulting in loss of nutrients and removal of top fertile soil layer. The soil erosion has converted most of the fertile soils of Jammu and Kashmir into barren, fallow and degraded lands. Recently about 31 per cent (7,02,0000 ha) of the total geographical area of Jammu and Kashmir is found to be highly degraded), out of which 5460 (000ha) area comes under water erosion, 1360 (000ha) under wind erosion and 200 (000ha) comes under physical deterioration *(Sharma 2004)*. In Jammu region Kandi belt suffers badly from sheet and rill erosion. There has been large scale land and environmental degradation due to poor management and natural resources. The farmers do not take much interest in land, soil and water conservation measures during the rainy season resulting in huge soil loss due to erosion and low crop productivity.

In light of above, it becomes imperative to prevent the top soil and its nutrient status from erosion through making farmers more aware about the importance of conservation and adoption of such practices. Only through this, farmers can increase their production and productivity.

Keeping the above view, the present study was designed with the following specific objective were:

1. To describe farmers' awareness with respect to soil conservation technologies;
2. To ascertain farmers' perception with respect to soil conservation technologies; and
3. To observe farmers' perception with respect to sources of information and adoption of soil conservation technologies.

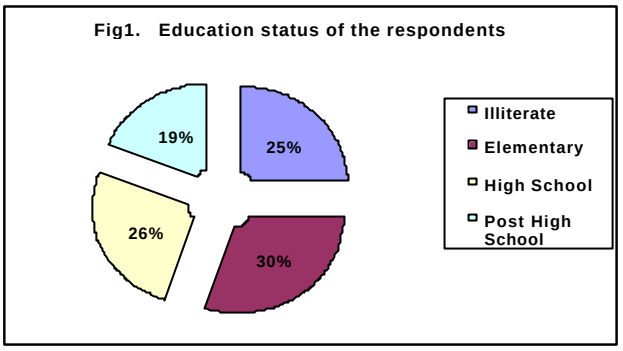
METHODOLOGY

Farmers from villages of watershed area of village Dagore, Brikmilla and Bara in the block Vijaypur, were the target population for the study. This area was selected purposively because it comes under the watershed area of the command and the different types of awareness programme were organized by development agencies time to time on soil conservation practices but farmers of these areas are facing soil erosion problems. From the 8 villages of this area, 3 villages were randomly selected; from these, farmers (n=125) were selected by random sampling techniques for this study.

The research design was used descriptive survey method. The scale developed by the researchers *(Harrison, et al., 1999)* to collect data was used and followed by *Chizari, et al. (2002)*. Likert-type scales were used to quantify the responses for objectives two and three. The scale was tested for its validity (clarity, contents and language of the items) and reliability (split half method) in the non sampling area of Vijaypur block where 20 farmers each were tested for the same and the validity and reliability coefficients of the scales were found to be 0.93 and 0.86. The values of validity and reliability coefficients indicated that the scale so used was highly valid and reliable. Data were collected through a structured interview and a questionnaire with farmers at their farms

RESULTS AND DISCUSSION

Socio-personal profile of the respondents: Farmers were found in the study ranged in age from 25 to 62 years. The mean age of respondents was 44 years. All of the farmers were male. Farmers were reported about their highest level of education; 30% of farmers had an elementary education; 25% were illiterate; 26% had high school; 19% had post high school education. Study indicated the number of years they had farming experience. Years of experience ranged from five to more than 25 (M=22; SD=14). The average size of irrigated land was 3.25 hectares. Most farmers (50%) stated they will continue farming as a profession and would transfer their farming operations to their children (65%).



Farmers awareness about soil conservation technologies: The first objective was to describe farmers' awareness with respect to soil conservation technologies. Overall (M=1.3; SD=.72) farmers tended to not be aware or have low levels of awareness with respect to soil conservation technology. As shown in Table 1, approximately 70% of farmers were not aware that soil erosion was a serious and important problem in their village. Sixty-four percent of farmers were not aware about their role in the reduction of soil erosion on their farmlands. Farmers had low (35.2%) to high (28%) levels of awareness with respect to soil erosion being a source of water contamination in their region.

Farmers perception about soil conservation technologies: The farmers' perception with respect to soil conservation technologies. Overall (M=1.4; SD=.74) farmers tended to agree or were unsure about soil conservation technologies. As shown in Table 2, approximately 81.6% of farmers agreed that the government should pay farmers for the cost of practicing soil conservation technologies. Approximately 80% of farmers agreed that soil conservation and controlling erosion were both important and essential. Farmers tended to be unsure (40.0%) that when using farmlands and natural resources the rights of future human and creatures should be taken in consideration. Farmers tended to disagree (54.4%) that when using farmlands should one think only of its own benefit. Farmers also tended to disagree (78.4%) that practicing soil conservation technologies was a waist of capital and time.

Table 1. Farmer's awareness with respect to soil conservation

S. No.	Items	Not aware		Low awareness		High awareness	
		N	%	N	%	N	%
1.	Soil erosion is a serious and important problem in your village	88	70.4	20	16.0	17	13.6
2.	Farmers should take a responsible role in reduction of soil erosion on their farm lands	80	64.00	28	22.4	17	13.6
3.	Soil erosion is a danger to agricultural production and reduction of food	66	52.8	35	28.0	24	19.2
4.	Soil erosion is one of the important factors in reduction of	72	57.6	19	15.2	34	27.2
5.	Soil fertility in your region						
6.	Soil erosion is a source of water contamination in your region	46	36.8	44	35.2	35	28.0

Note: Scale: 1=not aware; 2=low awareness; 3=high awareness; M=1.3; SD=.72

Table 2. Farmers' perceptions toward soil conservation

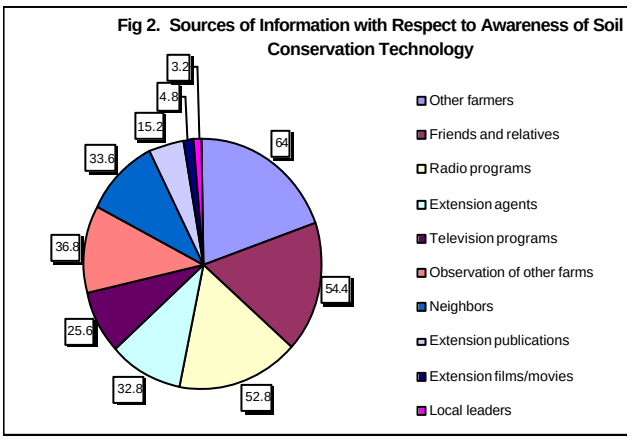
S. No.	Items	Agree		Unsure		Disagree	
		N	%	N	%	N	%
1.	Government should pay farmers the cost of practicing soil conservation technology, who have decided to adopt and will use the practice	102	81.6	9	7.2	14	11.2
2.	Soil conservation and controlling erosion is both important and essential	100	80.0	13	10.4	12	9.6
3.	Is practicing soil conservation technology appropriate for you considering your agricultural conditions and available resources	92	73.6	18	14.4	15	12.0
4.	Practicing soil conservation technology will increase the agricultural benefits of those who use it	91	72.8	21	16.8	13	10.4
5.	Farmers have responsibility in reducing soil erosion on their farms	89	71.2	17	13.6	19	15.2
6.	Practicing soil conservation technology requires much skill and knowledge	86	68.8	23	18.4	16	12.8
7.	Farmers who have extensive soil erosion in their farmlands, the govt. should legally want them to practice soil conservation technology	72	57.6	20	16.0	33	26.4
8.	In using farm lands and natural resources, should the rights of future human and creatures should be taken in consideration	53	42.4	50	40.0	22	17.6
9.	Practicing soil conservation technology requires purchasing new tools and equipments	45	36.0	35	28.0	45	36.0
10.	In using farm lands should one think only of its own benefit	40	32.0	17	13.6	68	54.4
11.	Practicing soil conservation technology is a waist of capital and time	09	7.2	18	14.4	98	78.4

Note: Scale: 1=Agree; 2=Unsure; 3=Disagree; M=1.4; SD=.71

Table 3. Sources of information with respect to awareness of soil conservation technology.

	Information sources	N	%
2.	Other farmers	80	64
3.	Friends and relatives	68	54.4
4.	Radio programs	66	52.8
5.	Extension agents	41	32.8
6.	Television programs	32	25.6
7.	Observation of other farms	46	36.8
8.	Neighbors	42	33.6
9.	Extension publications	19	15.2
10.	Extension films/movies	06	4.8
11.	Local leaders	04	3.2

Note: Respondents could choose multiple selections



Farmers' perception about source of information and adoption of soil conservation technologies: The farmers' perception with respect to sources of information and adoption of soil conservation technology. Table 3 shows participants perception with respect to information sources. The most selected sources of information were other farmers, friends and relatives, radio programs, extension agents, and television programs. The least selected sources of information were extension films/ movies and local leaders.

CONCLUSION

The results presented here show that farmers did not perceive soil conservation to be a serious or important problem on their farm. They do, however, recognize that soil conservation is an overall important issue. Farmers reject the notion that soil conservation is a shared responsibility between farmers and the government. Farmers indicated they were unwilling to expend their capital and time to address soil conservation and suggested that this is a governmental issue.

While the ideal program might be to treat each farmer individually and prescribe solutions individually, a compromise would be to classify farmers into groups, and then prescribe different policies for each group. Insights gained from this research point to three possible approaches to grouping farmers: 1) by the relationship between soil conservation needs and actual farmer behavior; 2) by the apparent influences on conservation behavior, especially constraints; and 3) by the degree of receptivity of individuals to increasing their soil conservation effort. Although the research presented here is narrowly defined and generalized only to Jammu farmers, global and cross-national implications may exist.

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