

People's participation in maintenance of soil and water conservation programme for watershed management

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The watershed development programmes are for the local people hence they should take interest and participate by contributing in terms of labour and money for construction and maintenance of structures on their field and common land. Participation in maintenance is necessary for protection and care of the institutions resources created, for its sustainable impacts. Involvement of local people in evaluation of programme is also necessary for the feedback and further improvements. Considering all these facts in view, the present study was undertaken to evaluate the extent of people's participation in soil and water conservation (SWC) activities at watershed level during the maintenance stage and to investigate the relationships between the extent of people's participation with some of the selected variables.

The study area and methodology

The study on extent of people's participation in soil and water conservation (SWC) programmes at maintenance stage was conducted during 2000-01 in the Integrated Wasteland Development Project (IWDP), Antisar watershed spread over an area of 812 ha in Kheda district of Gujarat. An area of 736 ha belongs to individual farmers and 76 ha owned by Panchayat community/Government. All the land owners -392 (male - 284 and female - 108) were selected as respondents. Socio-economic traits were measured with the scale suggested by Pareek and Trivedi (1963) with some modifications. The psychological traits were measured with the scales developed by the investigators. Responses were recorded on the three-point-continuum scale viz. great extent, some extent and least extent by assigning score as 3, 2 and 1, respectively.

Statement Intensity Indices (SII) for people's participation and the overall extent of people's participation as People's Participation Index (PPI) in maintenance of soil and water conservation programme were worked out as suggested by Bagdi (2002). To measure the interrelationship

between socio-economic and psychological traits with people's participation in maintenance, the Pearson's coefficient of correlation (r) was estimated.

People's participation levels

The analysis (Table 1) revealed that majority of respondents (male - 75.7%, female - 81.5% and overall - 77.3%) were in moderate participatory group. The percentage of farmers in low participation was about 12% in both the groups. However, the percentage of high participation was almost double in male (12.7%) than female (6.5%). Reasons for moderate level of participation by the majority of respondents may be attributed to the scanty scope and opportunity after the project work is over. Moreover, early enthusiasm of the people also goes down.

Table 1. Distribution of respondents according to level of participation in maintenance of SWC programme

Participation levels	Respondent (%)		Overall (%)
	Male (N=284)	Female (N=108)	(N=392)
Less participation (<19.219 scores)	11.6	12.0	11.7
Moderate participation (19.219 to 25.231 scores)	75.5	81.5	77.3
More participation (>25.231 scores)	12.7	6.5	11.0
Total	100.0	100.0	100.0

Mean = 22.225 and SD = 3.006

The results (Table 2) showed that 40% or more male respondents participated in maintenance of the SWC programme to great extent in the activities like protecting the forest plantation (72.54%), contribution of money for repair and maintenance of SWC structures (55.63%), protecting the SWC structures from natural calamities (41.55%) and caring of forest and fruit plants during summer by providing irrigation (40.84%). Similarly, female respondents participated to a great extent in the activities like protecting the forest plantation (77.78%), contributing

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Table 2. Item-wise percentage distribution and intensity indices of the extent of male's and female's participation in SWC programme at the maintenance stage

Activities	Male's participation (N = 284)				Female's participation (N = 108)			
	GE (%)	SE (%)	LE/N (%)	Intensity index	GE (%)	SE (%)	LE/N (%)	Intensity index
Protection of forest plantation	72.54	17.61	9.85	2.62	77.78	11.11	11.11	2.66
Contribution of money for repair and maintenance of SWC structures	55.63	24.65	19.72	2.35	44.44	38.89	16.67	2.37
Protection of SWC structures from natural calamities	41.55	38.73	19.72	2.21	55.56	22.22	22.22	2.36
Information to PIA for repair of SWC structures	38.73	42.25	19.01	2.19	44.44	47.22	8.34	2.27
Motivation to fellow farmers for labour contribution for repair and maintenance of SWC structures	35.21	44.37	20.42	2.14	55.00	22.22	27.78	2.22
Protection of fruit plants	23.24	65.49	11.27	2.11	36.11	47.22	16.67	2.19
Motivation of fellow farmers for money contribution for repair and maintenance of SWC structures	35.21	40.85	23.94	2.11	38.89	33.33	27.78	2.11
Contribution of own labour for repair and maintenance of SWC structures	35.92	35.21	28.87	2.07	13.89	77.78	8.33	2.05
Consultation with the PIA to learn for repair and maintenance of conservation structures	37.32	27.46	35.21	2.02	33.33	36.11	30.56	2.02
Caring forest and fruit plants	40.84	19.72	39.44	2.01	22.22	52.78	52.78	1.97

Where, GE = great extent, SE = some extent, LE/N = least extent/not to any extent

with labour for repair and maintenance of SWC structures (55.56%), taking care of forest and fruit plants during summer by providing irrigation (55%), contributing money for repair and maintenance of SWC structures (44.44%) and protecting the SWC structures from natural calamities (44.44%).

The study showed that 40% or more male respondents participated in maintenance of the SWC programme to some extent in the activities like protection of fruit plants (65.49%), motivation of fellow farmers for the contribution of labour to repair and maintenance of structures (44.37%), information to PIA for repair of structures (42.25%) and motivation of fellow farmers for the contribution of money to repair and maintenance of structures (40.81%). Similarly, female respondents participated in maintenance of the SWC programme in the activities like protecting fruit plants grown in the watershed area (77.78%), informing the PIA officers to repair the damaged SWC structures (52.78%), motivating fellow farmers to extend contribution with their money towards the repair and maintenance of SWC structures in the watershed (47.22%) and protecting the SWC structures from natural calamities (47.22%).

The intensity indices of participation during programme maintenance stage by the male respondents ranged from 2.01 to 2.62. The male respondents showed high participation level in protection of forest plantation (2.62) and moderate participation level in all other activities. Similar

pattern was observed in case of female participation in maintenance of SWC activities. The study indicated that afforestation activities were of great interest to the watershed community.

The overall extent of male's participation in the SWC programme during maintenance stage was worked out to be high (72.76%) as indicated by People's Participation Index. Similarly, the overall extent of female's participation in the SWC programme during maintenance stage was also high (74.06%). These findings are in line to those reported by earlier workers (Sen *et al.* 1986; Suresh 1990; Kulkarni and Nandapurkar 1991).

Relationship between people's participation and selected independent variables

The study revealed that the variables such as socio-economic status, land holding, farm power, family size, risk taking ability, knowledge, attitude and adoption of SWC practices in case of both male and female farmers were found to be positively and significantly correlated with their participation in maintenance of SWC programme (Table 3). The variables farm power and education were also positively and significantly correlated with the participation of male and female farmers, respectively in maintenance of SWC programme. Age, income and social participation were insignificant attributes for deciding people's participation in maintenance of SWC works in both the groups. The correlation coefficient for some of the variables were found to be

Table 3. Coefficient of correlation between the male and female farmers' participation in maintenance of SWC programme and the selected independent variables.

Independent variables	N = 392	
	Correlation coefficient('r')	
	Male N = 284	Female N = 108
Age	0.056	-0.190
Socio-economic status	0.341**	0.276**
Land holding	0.317**	0.293**
Education	-0.159	0.240*
Farm power	0.271**	0.161
Family size	0.240*	0.287**
Income	0.067	-0.016
Social participation	0.107	0.164
Risk taking ability	0.586**	0.250*
Knowledge	0.472**	0.553**
Attitude	0.510**	0.239*
Adoption	0.376**	0.336**

* and ** significant at 5% and 1% level, respectively.

significant at 1% and 5% level of significance and may be attributed to large sample size. However, the low magnitude of these correlation values indicated in significant determinants of people's participation.

The study showed that farmers may be motivated and educated sufficiently and imparted skill oriented trainings during execution of watershed development programme to improve upon the determinants of people's participation.

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