

Women's Participation in Watershed Development Programme : A Case Study of Antisar Watershed of Gujarat

G. L. Bagdi

Senior Scientist, (Agricultural Extension), Central Soil & Water Conservation Research & Training Institute,
Research Centre, Vasad-388306, District- Anand, Gujarat, India.
Corresponding author e-mail : gbagdi@yahoo.com

ABSTRACT

Women's participation in watershed development programme is a collective and cooperative effort by the local women farmers for contributing and sharing common benefits. Women's participation in soil and water conservation interventions for watershed development programme is imperative during planning, implementation and maintenance phases to make the programme more successful. The study was conducted during 1998-2001 in the Integrated Wasteland Development Project (IWDP), Antisar watershed, located in Kapadwanj Taluka of Kheda district in semi-arid tropics of Gujarat state to measure the extent of women's participation in watershed development programme. The extent of participation towards each activity regarding planning, implementation and maintenance for Antisar watershed development programme was computed with help of developed Activity Intensity Index (AII). People's Participation Index (PPI) was also developed by the investigator to measure the overall extent of women's participation in soil and water conservation for watershed development programme during planning, implementation and maintenance phases. The results in the paper revealed that the women farmers exhibited high participation in the watershed development activities such as i) planning of check dams in their fields, ii) allowed Project Implementing Agency (PIA) to implement the soil and water conservation works for development of the Antisar watershed iii) and women's were contributed money in maintenance of SWC structures. The overall extent of women's participation during the Antisar watershed development programme planning, implementation and maintenance phases were also computed high with the help of the PPI.

Key Words : Soil & water conservation; Watershed development programme; Women's participation

People's participation is not a new idea in India. In fact, it emerged long ago in the vision and actions of Tagore and Gandhi. Rural masses as development actors were the central feature of their rural reconstruction programmes (Santhanam, 1982).

Karl Deutsch (1969) considered participation as a technique for setting goals, choosing priorities and deciding on the kind of resources to commit to achieve goal attainment. Moulik (1978) was of the opinion that "participation in development process implies stimulating individuals to take the initiative and mobilizing people to work for overall societal development". Cohen and Uphoff (1980) describe participation as "generally denoting the involvement of a significant number of persons in situations or actions which enhance their well-being, e.g. their income, security or self-esteem".

According to Banki (1981), "People's participation is a dynamic group process in which all members of a group contribute to the attainment of group objectives, share the benefits from group activities, exchange information and experience of common interest, and follow the rules, regulations and other decisions made by the group". Mishra (1984) stated that in broadly speaking participation is understood as the "involvement of a significant number of persons in situations or actions, which enhance their well-being". Bagdi (1997) defined people's participation as "concerted efforts by a group of local participants for achieving common goals and sharing benefits.

Participation of farm women during planning a watershed development programme is very much needed to involve their decisions because the programme should be planned according to requirements of local farm women. The programme should meet the basic needs of local farm women like supply of drinking water, fodder for cattle and fuel for kitchen. The watershed development programmes are made for local women; hence the local women should take interest and participate in implementation of programme by contributing labour and money in construction of soil and water conservation structures on their field and common land. Participation in maintenance is also required because without protection and care by the local women the programme will not be successful. The involvement of local women in evaluation of programme is also necessary, so that it may provide points to be considered for improvement in future programme planning the present research study was framed to measure the extent of women's participation in soil and water conservation programme for sustainable agricultural production through watershed development.

METHODOLOGY

The study was conducted during 1998-2001 in the Integrated Wasteland Development Project (IWDP), Antisar watershed purposively, because the Antisar watershed development programme was sanctioned by the Ministry of Rural Area and

Employment, Govt. of India, to the Central Soil and Water Conservation Research and Training Institute, Research Centre, Vasad. The Antisar watershed is spread over 812 hectares of land. Out of that 736 hectares belong to individual farmers and 76 hectares is owned by Panchayat community/government. Antisar watershed is under Kapadwanj Taluka of Kheda district in Gujarat of India.

The population of the study consisted of the farm women who or her spouse possessed land in the Antisar watershed area as well as member of Antisar Watershed Development Society were considered as the respondents for the study. Therefore, the 108 farm women of Antisar watershed area were considered for the study.

A detailed structured schedule was developed by the investigator to assess the extent of women's participation in soil and water conservation programme. The responses of the respondents were recorded in especially developed three-point-continuum schedule i.e. great extent, some extent and least extent or never and scores were assigned as 3, 2 and 1 respectively.

Activity Intensity Index :

Activity Intensity Indices (AII) were calculated for women's participation in various activities during planning, implementation and maintenance of soil and water conservation programme as suggested by Bagdi (2002) :

$$SII = \frac{\sum_{i=1}^N X_i}{N}$$

where,
 AII = Activity Intensity Index
 X_i = Scores of ith respondents towards a particular statement
 N = Total number of respondents

The participation category of AII for each activity as responded by respondents was decided with the help of the following criteria :

- | | |
|-------------------------------|-------------------------------|
| Range of SII | Participation category |
| i) < Minimum AII Score + CI | Low participation |
| ii) > Minimum AII Score + CI | Moderate participation |
| to | |
| < Maximum AII score - CI | |
| iii) > Maximum AII score - CI | High participation |

Where,
 CI = Class Interval

$$CI = \frac{\text{Maximum SII score} - \text{Minimum SII score}}{\text{Number of classes}}$$

People's Participation Index (PPI) :

The overall extent of people's participation in SWC programme in Antisar watershed was measured by the

People's Participation Index (PPI) as given below (Bagdi, 2002) :

$$PPI = \frac{\text{Mean Participation Score (P)}}{\text{Maximum Participation Score}} \times 100$$

Where,

$$P = \frac{\sum_{i=1}^N P_i}{N}$$

Where,

N = Total number of respondents

$$P_i = \sum_{j=1}^K (PP_j + PI_j + PM_j)$$

Where,

PP_j = Total scores of people's participation in programme planning.

PI_j = Total scores of people's participation in programme implementation.

PM_j = Total scores of people's participation in programme maintenance.

K = Total number of statements on which responses of the respondents were recorded.

P_i = Total participation score of individual respondent in planning, implementation and maintenance.

Categorization of PPI :

The overall people's participation index in a particular watershed development programme can also be categorized into three categories as suggested by the authors based on the normal distribution curve values as given below.

Sr. No.	Normal distribution curve range	PPI value range	People's participation category
1.	< Mean - S.D.	0 to 34.13	Low level
2.	Mean ± S.D.	34.14 to 68.26	Moderate level
3.	> Mean + S.D.	68.27 to 100	High level

RESULTS AND DISCUSSION

People's participation in planning stage

The Table 1 revealed that the intensity indices of women's participation in the programme planning activities, as the respondents reported, ranged from 1.80 to 2.67. The respondents showed high level of participation in the soil and water conservation programme planning activities such as suggesting idea in planning of check dams in their fields and participating in planning meetings of the SWC programme with the high intensity indices values 2.67 and 2.53 respectively. The respondents showed moderate intensity indices in the SWC programme planning activities of suggesting ideas in planning of crops cultivation (2.16), share information or experience about soil and water conservation with their

fellow farmers after participation in planning meetings (2.13), suggesting information to be considered in planning of the SWC programme (2.11), motivating fellow farmers to participate in planning of SWC programme (2.11). The respondents showed low level of participation intensity indices in the SWC programme planning activities such as contacting the Programme Implementing Agency (PIA) about primary needs such as fuel, fodder and food to be taken care of in the programme planning (2.05), suggesting information in planning of forest trees plantation work

(2.00), participating in planning of fruits plantation work (1.97) and suggesting ideas for planning of land leveling works carried out in the different fields of the watershed area (1.80).

The overall extent of the women's participation in the programme planning stage, as explained by the respondents was analyzed with the help of the People's Participation Index (PPI) and it was found 72.03 per cent, showing high level of participation in SWC programme at planning stage.

Table 1. Statement wise percentage distribution and intensity indices according to the extent of women's participation in programme planning stage.

(N=108)					
Sr. No.	Activities	GE	SE	LE/N	Intensity indices
1.	Suggest idea during planning of check dams.	77.78	11.11	11.11	2.67
2.	Participate in planning meetings of Soil and Water Conservation (SWC) programme.	61.11	30.56	8.33	2.53
3.	Suggest idea in planning of agricultural crops cultivation.	36.12	44.44	19.44	2.16
4.	Share experience about soil and water conservation with fellow farmers after participation in planning meetings.	44.44	25.00	30.56	2.13
5.	Give suggestion for inclusion in planning.	25.00	61.11	13.89	2.11
6.	Motivate fellow farmers to participate in planning.	36.11	38.89	25.00	2.11
7.	Contact the Programme Implementing Agency (PIA) about primary fuel, fodder and food to be taken care in the planning.	44.44	16.67	38.89	2.05
8.	Suggest information in planning of forest trees plantation.	30.56	38.89	30.55	2.00
9.	Participate in planning of fruits plantation.	11.11	75.00	13.89	1.97
10.	Suggest idea in planning of land leveling works.	22.22	36.11	41.67	1.80

GE = Great Extent, SE = Some Extent and LE/N = Least Extent/Never

Women's participation in implementation stage

The Table 2 showed that the intensity indices of women's participation in the programme at the stage of implementation and ranged from 1.77 to 2.92. The women respondents showed high level of participation only in the activity of allowing programme implementing agency to implement SWC programme works in their area with the intensity index value 2.92. The respondents showed moderate level of participation during implementation stage also only in the activities of such as asking fellow resource users to contribute with labour and money towards construction of SWC structures and providing material to help construction of SWC structures with AII values 2.52 and 2.22 respectively. The respondents showed low level of participation during implementation stage also

only in the activities of contributing with money in construction of SWC structures (2.13), providing equipment during construction of SWC measures (2.08), providing help during purchase of construction materials (2.08), providing help in plantation work of forest plants (2.02), contributing with labour in construction of structures (1.97), participating in training programme on the soil and water conservation technologies organized by PIA (1.94) and helping during plantation work of fruit plants (1.77).

The overall extent of the women respondents' participation in the programme at the stage of its implementation was calculated also with the help of the PPI and it was found to be 71.66 per cent. It means that level of participation of farmers in the implementation stage was also high.

Table 2. Statement wise percentage distribution and intensity indices of the extent of women's participation in the SWC programme implementation stage.

(N=108)

Sr. No.	Activities	GE	SE	LE/N	Intensity indices
1.	Allow Programme Implementing Agency (PIA) to implement soil and water conservation programme works.	94.44	2.78	2.78	2.92
2.	Ask fellow resource users for labour and money contribution towards construction of structures.	69.44	13.89	16.67	2.52
3.	Provide any material to help construction of soil and water conservation structures.	30.56	61.11	8.33	2.22
4.	Contribute money in construction of SWC structures.	38.89	36.11	25.00	2.13
5.	Provide equipment to the PIA during construction of soil and water conservation measures.	41.67	25.00	33.33	2.08
6.	Provide help during purchase of materials.	44.44	19.45	36.11	2.08
7.	Help in plantation work of forest plants.	27.78	47.22	25.00	2.02
8.	Contribute labour to help construction of SWC structures.	27.78	41.67	30.55	1.97
9.	Participate in training programmes on the soil and water conservation programme organized by PIA.	11.11	72.22	16.67	1.94
10.	Help during plantation work of fruit plants.	16.67	44.44	38.89	1.77

GE = Great Extent, SE = Some Extent and LE/N = Least Extent/Never

People's participation in maintenance stage

The Table 3 revealed that the intensity indices of participation in activities of programme maintenance stage by the respondents were ranged from 1.97 to 2.66. The respondents showed high participation level only in the activity of contributing money towards repair and maintenance of SWC structure in their field (2.66). The respondents showed moderate participation level in the activities of the soil and water conservation programme

at the maintenance stage such as, protecting forest plantation done in the watershed area from animals (2.37), contributing with labour to repair and maintenance of SWC structures in their field (2.36), protecting SWC structures from the natural calamities (2.27), and taking care of the forest and fruit plants during summer by providing irrigation (2.22).

The respondents showed low participation level in the activities of the soil and water conservation programme at the maintenance stage such as

Table 3. Statement wise percentage distribution and intensity indices of the extent of women's participation in programme at the maintenance stage.

(N=108)

Sr. No.	Activities	GE	SE	LE/N	Intensity indices
1.	Contribute money towards repair and maintenance of SWC structures.	77.78	11.11	11.11	2.66
2.	Protect the forest plantation done in the watershed area.	44.44	38.89	16.67	2.37
3.	Contribute own labour towards repair and maintenance of SWC structures.	55.56	22.22	22.22	2.36
4.	Protect the SWC structures from natural calamities.	44.44	47.22	8.34	2.27
5.	Take care of the forest and fruit plants during summer by providing irrigation.	55.00	22.22	27.78	2.22
6.	Motivate fellow farmers for money contribution towards repair and maintenance of SWC structures in the watershed.	36.11	47.22	16.67	2.19
7.	Consult with the programme implementing agency to learn about repair and maintenance of conservation structures.	38.89	33.33	27.78	2.11
8.	Protect the fruit plants grown in the watershed area.	13.89	77.78	8.33	2.05
9.	Motivate fellow farmers for labour contribution towards repair and maintenance of SWC structures in the watershed.	33.33	36.11	30.56	2.02
10.	Inform the PIA officers to repair the damaged SWC structures.	22.22	52.78	25.00	1.97

GE = Great Extent, SE = Some Extent and LE/N = Least Extent/Never

motivating fellow farmers to extend money contribution towards repair and maintenance of SWC structures (2.19), consulting the PIA to learn more about the repair and maintenance of conservation structures (2.11), protecting the fruit plants grown in the watershed area (2.05), motivating fellow farmers to extend contribution with their labour to the repair and maintenance of SWC structures in the watershed (2.02), and informing PIA officers to repair the damaged of SWC structures (1.97).

The overall extent of women's participation in the SWC programme maintenance stage was also calculated with the help of the PPI and it was calculated as 74.06 per cent. It shows that the women farmers exhibited high level of participation during maintenance stage of SWC programme.

CONCLUSION

It was found that the rural women's had participated highly in the planning of check dams that were constructed in their fields for watershed development. They also allowed PIA to implement the soil and water conservation programme for the Anisar watershed development in their area and during maintenance stage they have also contributed money for maintenance of SWC structures. Therefore, it can be concluded from this study that the rural women farmers highly participate in planning, implementation and maintenance of soil and water conservation structures, in such government sponsored watershed development programme to mitigate the water scarcity due to ground water recharge and that results into sustainable agricultural production.

Paper received on : April 17, 2012

Accepted on : September 19, 2012

REFERENCES

1. Bagdi, G. L. and Pandey, M.B., 1997. Participation of rural farm women in sugarcane production, *Gujarat Agricultural University Research Journal*, **23** (1) : 62-66.
2. Bagdi, G. L., 2002. People's participation in soil and water conservation for sustainable agricultural production in the Antisar watershed of Gujarat, *Ph. D. Thesis*, Department of Extension and Communication, Faculty of Family & Community Science, The M. S. University of Baroda :123.
3. Banki, Evan S., 1981. Dictionary of Administration and Management, Los Angeles, California: Systems Research Institute : 533.
4. Cohen, John, M. and Uphoff, Norman, T., 1980. Participation place in rural development seeking clarity through specificity, *World Development*, **8** (3) : 213-236.
5. Karl Deutsch, 1969. Social mobilization and political development, *American Political Science Review*, **LIV**.
6. Mishra, S.N., Sharma, K. and Sharma, N., 1984. Participation and Development, Delhi : *NBO Publishers' Distributors* : 17-29.
7. Moulik, T.K., 1978. Techniques of mobilizing rural people to support rural development programme, in APDAC, Rural Development : *Training to meet new challenges*, Vol. 4, Kuala Lumpur.
8. Santhanam, M. L., Yogananda Sastry, C. and Vijayakumar, S., 1982. Human and social factors in people's participation, *Journal of Rural Development*, **1** (5): 770-831.