

PEOPLE'S PARTICIPATION IN SOIL AND WATER CONSERVATION PROGRAMME IN SARDAR SAROVAR PROJECT CATCHMENT

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ABSTRACT : The study was carried out during 1996-97 in Sardar Sarovar Project catchment of Gujarat State, to assess the people's participation in soil and water conservation programme. People's participation in planning and designing of soil and water conservation programme was low (28 per cent), participation in implementation of programme activities was medium level (62 per cent) and in repair and maintenance of soil and water conservation structures was also at medium level (57 per cent). The overall people's participation as indicated by the People's Participation Index (PPI) was low (43.87 per cent). Assets possession, land holding and family size of farmers had shown positive significant relationship, whereas, animal population had shown negative significant relationship with people's participation.

Most of the arid and semi-arid regions have been overlooked by the development planners and researchers. It is only in recent years that some attention has been paid about the problems of these areas. These regions have concentrations of eroded and degraded natural resources. Loss of vegetative cover followed by soil degradation through various forms of erosion has resulted in lands which are thirsty in terms of water as well as hungry in terms of soil nutrients (Singh 1990). People's participation at the time of preparing a programme is very much needed to take decisions because the programme should be according to the basic needs of local people. The programme should meet the basic needs of the majority of the local people like supply of drinking water, fodder for cattle and fuel for kitchen. Local people are the ultimate beneficiary of any programme. The programme should be for the people, by the people and of the people.

People's participation is a group dynamic 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 norms, regulations and other decisions made by the group (Banki 1981). Participation, implies adoption of recommended soil and water conservation measures and practices on sustained basis and part taking in all other activities such as meetings, visits, training courses etc. related to the programme (Samra 1996). It may also be defined as "concerted efforts by a group of local participants for achieving common goals and sharing benefits" (Khatik 1998). The present study on people's participation in soil and water conservation programme in the Sardar Sarovar Project area was formulated with the following objectives:

- i) To assess the level of people's participation in soil and water conservation programme.
- ii) To find out the interrelationship of socio-economic and personal traits with the people's participation.

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MATERIALS AND METHODS

Sardar Sarovar Project dam is being constructed across Narmada river in Bharuch district of Gujarat. Out of the total 88000 sq. km. catchment area of the Sardar Sarovar Project dam 423 sq. km. falls in Gujarat State. Forest department of Gujarat State has treated the catchment with various soil and water conservation measures. On demand of forest department of Gujarat state a study on "Evaluation of Soil and Water Conservation Measures in Sardar Sarovar Catchment in Gujarat State" was initiated in 1994 by CS&WCR&TI, Research Centre, Vasad to assess the effect of various soil and water conservation (SWC) measures and afforestation works. The forest department provided manual help of their field staff for data collection. A socio-economic survey was carried out in Sardar Sarovar Project catchment area during 1996-97. Five villages namely Dabka, Dharsimal, Dumkhal, Gulwani and Mokhadi were chosen randomly and 20 respondents were selected from each village by stratified random sampling plan. The respondents from each village were grouped into four categories on the basis of land holdings i.e. marginal, small, medium and large farmer and five representatives from each category were selected. Thus, total one hundred respondents were included in the study. The responses of the respondents were recorded in the pre-structured schedule by personal interview and data were computed with appropriate statistical methods. The people's participation index developed by Khatik (1998) was used for measuring participation levels in soil and water conservation programmes in the area.

People's Participation Index (PPI)

Responses of the respondents were recorded in a specially developed schedule containing statements on people's participation in soil and water conservation programme of the area and scores were assigned as 1 for "Yes" and 0 for "No" response to each statement and people's participation index (PPI) was calculated as under:

$$PPI = \frac{\text{Mean participation score (P)}}{\text{Maximum participation score}} \times 100 \text{ ---(i)}$$

Where,

$$P = \frac{\sum_{i=1}^N P_i}{N} \text{ ---(ii)}$$

Where,

N = Total number of respondents

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

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.

Interrelationship between socio-economic and personal traits (independent variables) with people's participation (dependent variable) was worked out by multiple regression analysis technique.

RESULTS AND DISCUSSION

Extent of people's participation in SWC programme

A set of eight statements were included (Table-1) in the schedule to measure participation level.

Most of the farmers (over 60%) considered soil and water conservation (SWC) programmes to be beneficial for them. They have not only

Table 1. People's participation in soil and water conservation in Sardar Sarovar project.

| Sr. No. | Particulars | 'Yes' Response | | Rank |
|---------|--|----------------|------------|------|
| | | Number | Percentage | |
| 1. | Did you consider the soil and water conservation programme beneficial to you? | 65 | 65 | II |
| 2. | Did you participate in planning and designing of such programme? | 28 | 28 | V |
| 3. | Did you have desire to adopt soil and water conservation practices? | 66 | 66 | I |
| 4. | Did you adopt more than half of the recommended SWC practices? | 62 | 62 | III |
| 5. | Did you adopt almost all the recommended SWC practices on your farm? | 27 | 27 | VI |
| 6. | Did you contribute any money in construction of conservation structures? | 13 | 13 | VII |
| 7. | Did you contribute labour towards construction of conservation structures? | 13 | 13 | VIII |
| 8. | Did you contribute own labour or money for repair and maintenance of SWC structures? | 57 | 57 | IV |

desired but even adopted more than half of them. Nearly half of the farmers put their money or labour for repairs and maintenance of SWC works in case damaged after completion of work. All recommended practices were adopted by 27 per cent farmers only. Participation of respondents in construction of structures by own labour and money was the minimum.

Participation level

Extent of people's participation in SWC programme of the SSP catchment area under the present study was categorized into three levels i.e. i) the respondents having participation scores below mean minus standard deviation (S.D.) were grouped under the category of low level participation, ii) the respondents obtained scores between mean minus standard deviation to mean plus standard deviation were kept under the category of medium level participation and iii) the respondents having scores above than mean plus standard deviation were grouped under category of high level participation.

Table 2 elucidates that participation level of most farmers in SWC programme was medium

to low. High level of participation was indicated by less number of farmers (11%). Overall participation computed in terms of people's participation index (PPI) was 43.87 per cent, which shows low level of participation by the beneficiaries in SWC programmes of Sardar Sarovar Project catchment.

Table 2. Levels of people's participation in soil and water conservation programme.

| Participation level | Number of respondents | Percentage | Mean | S.D. |
|--|-----------------------|------------|------|------|
| Low level Scores <(mean ± S.D.) | 19 | 19 | | |
| Medium level Scores (Mean ± S.D.) to (mean ± S.D.) | 70 | 70 | 3.61 | 2.10 |
| High level Scores > (mean ± S.D.) | 11 | 11 | | |

The possible reasons for medium to low level of people's participation in soil and water conservation programme in SSP catchment area might be lack of awareness among the tribal farmers about soil and water conservation practices, and lack of education and lack of knowledge with farmers about their rights, duties and responsibilities in the soil and water conservation programme on watershed basis.

The implications of the findings are that the participation should be conceived as a major component of the development programme from its very inception. The first and foremost objective of the programme should be to satisfy farmers' basic needs viz., fuel, fodder and food. Once this is taken care, they would come forward to involve them actively in the programme. All possible efforts should be made to educate people on various aspects of the soil and water conservation programme and their significance to their interest, so that they would get a clear idea about the nature of various aspects of the programme. This would enable them to organize themselves into small functional groups.

Inter-relationship of socio-economic and personal traits with people's participation

Multiple regression analysis of the six independent variables with the dependent variable i.e. people's participation was computed (Table 3).

The values in table 3 reveals that the independent variables included in the present study account 47.9 per cent variation in the people's participation ($R^2 = 47.9$). The positive correlation of assets, land holding and family size with the people's participation was highly significant. The respondents' age and facilities did not matter much in this matter. It is to be note worth that animal population had significant negative impact on people's participation. This leads to an inference that a unit increase in animal population would result into reduction in people's participation. It appears that this phenomenon is an out come of transformation of hitherto uncultivated and pasture lands into cultivated fields after adopting SWC practices.

Table 3 Regression analysis of people's participation.

| Variables | Regression coefficient | T value |
|-------------------------|------------------------|---------|
| X_1 Age | 0.00134 | 0.108 |
| X_2 Assets | 1.2069** | 5.273 |
| X_3 Land holding | 0.10103* | 2.293 |
| X_4 Family size | 0.074849** | 2.558 |
| X_5 Facility | 0.10315 | 1.523 |
| X_6 Animal population | -0.027792** | 2.669 |

$R^2 = 0.479$

** Significant at 1 per cent level of probability.

* Significant at 5 per cent level of probability.

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