

## **Linking Process to Impact: Some Findings on the Impact of Participatory Approaches to Soil and Water Conservation in Semi-arid South India<sup>1</sup>**

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### **Abstract**

The results of watershed management (WSM) programs in India have so far been mostly short-lived and scattered. This study seeks to identify more effective approaches to WSM resulting in sustainable project impact in terms of bio-physical, economic and social aspects. The main issue addressed is: What key factors are responsible for project success, in such a way that differences in these parameters lead to differences in impact? Case studies of 13 WSM projects in South India were carried out in order to compare project approach and project impact. This led to the identification of three key factors related to success; all of these are characteristic of participatory approaches:

- farmers' involvement in the choice of both location and design of soil and water conservation (SWC) technologies, as well as the incorporation of indigenous practices into project design;
- farmers' contribution (in cash/labour) to the implementation & maintenance costs;
- existence and functioning of local institutions.

### **Watershed management in India's semi-arid tropics: problems and issues**

Watershed management (WSM), an integrated approach to combine the conservation of soil, water and vegetative resources with increased productivity and reduced risks in dryland farming, has been promoted in India for the past 15 years (see VON OPPEN, M.; KNOBLOCH, C., 1990, for the emergence of the WSM concept in India). WSM programs, managed by government departments, research institutions, or non-governmental organisations (NGOs), typically consist of three main components: water harvesting and percolation structures, soil conservation, and tree plantations. Results, however, have been

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<sup>1</sup> This paper documents some of the results of the project "Socio-economic conditions and institutional requirements for farmers' participation in watershed management programs in the semi-arid tropics of South India". This is a collaborative research project between ICRISAT (International Crops Research Institute for the Semi-arid Tropics) in Patancheru, India, and the Institute of Agricultural Economics and Social Sciences in the Tropics and Sub-tropics, University of Hohenheim, Germany. The project is financed by GTZ.

disappointing, being mostly short-lived (due to maintenance problems) and scattered (limited to project areas only) (see RAJAGOPALAN, V., 1991, for problems related to WSM in India).

There are a few examples of “successful” WSM projects in India as well as in other parts of the world, which have had a sustainable impact on the natural resource base and have resulted in higher agricultural productivity and rural incomes<sup>2</sup>. Evidence from these projects suggests a close relationship between project approach, in particular farmers’ participation in planning and implementation, and project impact. However, the mechanisms that lead to these impacts were not analysed and the project approaches were not sufficiently documented, which makes it difficult to link a particular impact to a particular approach.

The purpose of this study is therefore to identify a more effective approach to WSM, i.e., those strategies for planning and implementation most likely to result in sustainable impacts. Specifically, it seeks to find out which are the critical factors associated with project approach that result in project success, such that differences in these parameters lead ultimately to differences in program impact. Answers to this question are important for project implementing agencies, in order to identify weaknesses in project design and achieve greater impact on target groups.

### **Participation - some thoughts about what it is and what it does**

Participation (and in particular farmers’ participation in agricultural research and rural development) means different things to different people, and without a clear definition of the term it is not possible to make statements about the impact of participatory approaches. Unfortunately, “farmers’ participation” has become one of the catch words that rural development agencies, agricultural research institutions and donors use routinely to describe their activities. Their understanding of participation ranges from merely informing people about what will be done for (or rather, with) them, to a more wide-ranging interpretation that includes empowerment and decision making (see PRETTY, J.N., 1994, p.41, for a useful typology of participation). For the purpose of this project and in the context of WSM, the author defines participation as follows:

*Participation is the active involvement and partaking of all user groups in a watershed in the identification of problems and solutions, the planning and implementation of these solutions and the monitoring and evaluation of their performance. Participation includes the joint decision making (what is done where, when, how and by whom), based on mutual agreement, of the project implementing agency and the people in the project area, as well as accountability of the agencies activities to the people.*

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<sup>2</sup> Several such successful cases were presented at a workshop (New Horizons: The economic, environmental and social impacts of participatory watershed development) in Bangalore, in 1994. The workshop, summarised the findings of a collaborative research project, co-ordinated by IIED (International Institute for Environment & Development), London. See Hinchcliffe et al., 1995.

Thus, characteristics of participation or participation “indicators” are:

- *decision making*: Major decisions are taken jointly by users and project staff.
- *source of knowledge*: Indigenous technologies are utilised wherever possible.
- *involvement of all*: All interest groups are involved in planning & implementation.
- *contribution*: Beneficiaries contribute their own resources to the project.
- *joint management of common property resources*: Management responsibilities and usufruct rights for CPR lie with the user groups.
- *time frame*: Time frame of project is adjusted to farmers’ time frame.
- *accountability*: The project is accountable to the farmers; project objectives and strategies are transparent for them.
- *felt needs*: Project interventions respond to farmers’ felt needs.

Like “participation”, “impact” requires clarification. Sustainable impact looks beyond short-term improvements to long-term physical, economic and social changes. Impact indicators should reflect these multiple dimensions of impact. The following definition of impact has been used in this study: A project’s impact is the changes - short and long term - that result as a direct or indirect consequence of the project’s interventions. These include biophysical, economic and social changes. Since these biophysical, economic and social changes are difficult to assess objectively, this study uses farmers’ perceptions of change as the primary measure for project impact. This is consistent with the “emic approach” described by Uphoff, 1992, using the beneficiaries’ own frames of reference for project evaluation. Indeed, farmers’ perceptions of impact will ultimately determine their willingness to adopt and maintain a certain conservation practice. The information obtained from farmers was complemented by observations of the study team and secondary sources. The following impact indicators were used:

- changes in the resource base and agricultural productivity as a result of project interventions;
- state of repair and maintenance of SWC measures (on-farm measures as well as community structures such as check dams and percolation tanks);
- state of exploitation and protection of common property resources (CPR);
- changes in the status of women, landless and members of low castes as a result of project interventions.

### **Evidence from the field**

An exploratory study of thirteen watershed management projects in the South Indian states of Andhra Pradesh, Maharashtra, Karnataka and Tamil Nadu was undertaken from June to November 1994. The projects visited contain at least two of the following three components:

1. water harvesting and percolation measures (check dams, percolation tanks, nallah bunds, farm ponds, etc.; de-siltation of existing tanks).

2. soil conservation measures (field and contour bunds, trenches, gully checks, vetiver strips, vegetative barriers, rock filled dams, stone terracing).
3. tree plantations (agroforestry or horticultural plantation on wasteland, hillocks, farm or contour bunds, along streams or roads, near the houses)

RRA was used in all thirteen projects to collect information on the project interventions and the approach, and on farmers' perception of the project impact. Impact indicators were coded on a scale 0 to 3 and compared across villages with different project characteristics. As a result, factors associated with "success" were identified as well as some underlying principles, i.e. the reasons why these factors result in a certain output.

Table 1: Factors associated with "success" of watershed management projects

<b>Factor</b>	<b>Underlying Principle</b>	<b>Result</b>
High contributions (in cash or labour) from farmers	Farmers invest only if they are convinced that the investment contributes to achieving their objectives	Farmers are interested in maintaining structures in which they invested
Strong local institutions	Local institutions are essential to enforce commonly agreed rules and regulations relating to SWC and to resolve conflicts within the community	Functioning local institutions take over management responsibilities, once the external project support is withdrawn
Incorporation of indigenous knowledge into project design	Local technologies are more suitable to meet farmers' multiple objectives and are more cost-effective	Farmers maintain structures that fit into their environment and that can be maintained locally at low cost

These three key factors are elements of a participatory approach as defined above. An in-depth case study of two WSM projects (one representing a participatory approach and one representing a top-down approach), carried out in 1995 in Anantapur District, Andhra Pradesh, India, confirms the above findings. Both qualitative (PRA, farmers' workshops) and quantitative methods (questionnaire survey) were used to identify mechanisms that are responsible for the sustainable impact of participatory approaches.<sup>3</sup>

## Conclusions

The study shows that farmers' participation in all stages of a WSM project (from problem identification to evaluation) is essential for project success. Two mechanisms are responsible for this success (see also SINGH, K., 1991):

<sup>3</sup> For more details on this see the forthcoming Ph.D. thesis of the author.

- If farmers decide themselves what type of SWC measures to implement, where, when, and how, the measures are likely to be better adapted to local conditions and needs than blueprint recommendations from outside.
- Watershed Management requires collaboration between farmers, as some of the required measures transcend beyond the property of an individual (e.g. water harvesting structures, social fencing of grazing lands, safe run-off disposal). Collective action requires social organisation which again is only possible through the community itself. Therefore, local farmers' institutions are needed that can motivate and organise the community for collective action, enforce commonly agreed upon rules and regulations, resolve conflicts and that represent the community in matters involving external agencies (see Fernandes, A.P., 1993 for the role of local institutions in watershed management).

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