

**Institutionalising People's Participation in Natural Resource
Management: A Case Study of a Watershed Management
Programme in Chittoor District, Andhra Pradesh**

**Report by
V.VINOD GOUD**

**For
National Institute of Agricultural Extension Management (MANAGE)
RAJENDRANAGAR
HYDERABAD – 500 030**

*(As part of an international study sponsored by IIED & IDS, UK and co-
ordinated by Development Alliance, New Delhi)*

A study on

Institutionalisation of People's Participation in Natural Resource Management - A Case study of Watershed Management programme in Chittoor District, AP

Study Team Members:

Community representatives
&
Sudha Goparaju
Vinod Goud
Ch. Rambabu
K. Shankaraiah
N. Nirmala
Bhaskar
Sudhakar
Mani (late)

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Acronyms

AFPRO	Action for Food Production
APARD	Andhra Pradesh Academy of Rural Development
APHM& ERP	Andhra Pradesh Hazard Mitigation Andhra Pradesh Hazard Mitigation & Ecological Restoration Programme
APRLP	Andhra Pradesh Rural Livelihoods Project
ASW	
BFW	Bread for the World
CD	Check dams
CPR	Common Property Resources
CRD	Commissionerate of Rural Development
CWS	Centre for World Solidarity
DPAP	Drought Prone Area Development Programme
DRDA	District Rural Development Agency
DWAC	District Watershed Advisory Committee
DWCRA	Development of Women and Child in Rural Areas
EAS	Employment Assurance Scheme
GO	Government organisation
IGP	Income Generating Programme
ITK	Indigenous technical knowledge
IWDP	Integrated Wasteland Development Programme
MACTS	Mutually Aided Cooperative Thrift Society
MANAGE	National Institute of Agricultural Extension Management
MDT	Multi-Disciplinary Team
MoRD	Ministry of Rural Development
NGO	Non-government organisation
PD	Project Director
PIA	Project Implementing Agency
PO	Project Officer
PRA	Participatory Rural Appraisal
RF	Revolving Fund
RPF	Resource poor families
RWDAC	Rayalaseema Watershed Development Programme Advisory Committee
RWDP	Rayalaseema Watershed Development Programme
SHG	Self Help Group
SWPIRC	State Watershed Programme Implementation and Review Committee
UG	User Group
VC	Village Committee
WA	Watershed Association
WC	Watershed Committee
WDF	Watershed Development Fund
WDT	Watershed Development Team
WDT-ENG	Watershed Development Team – Civil Engineer
WHS	Water harvesting structure
WSD	Watershed development

Institutionalising People's Participation in Natural Resource Management: A Case study of a Watershed Management Programme in Chittoor District, AP

1. Introduction

Natural resources like land, water and forests are dynamic and need to be managed if they are to provide benefits on a sustainable basis. Market failures led to the involvement of the state in natural resource management because many resource management activities are regarded as public goods or services. But the performance deficiencies of government agencies, the fiscal crisis of the state and broader policies of decentralisation have resulted in most countries devising policies which favour the participation of resource users. However, the success of these policies depends upon the local capacity for collective action by the users/stakeholders in resource management initiatives.

Participatory methodologies have proved to be effective in motivating and empowering local communities to take greater control of their development process. They have helped to identify problems faced by vulnerable groups, explore local knowledge and execute development programmes effectively through active involvement of users in planning, implementing and maintaining activities. There are some successful experiences of using participatory methodologies in natural resource management programmes, albeit limited and scattered. Of late, national governments and donor organisations are increasingly showing interest in scaling-up these successful experiences by adopting and applying participatory approaches on a wider scale to improve the management of natural and fiscal resources.

Over the past five years in India's rainfed lands, the central Ministry of Rural Development (MoRD) has been implementing a large scale watershed management programme which takes a participatory approach. In Andhra Pradesh (AP) alone more than 8, 000 micro-watersheds (500 ha each) are being managed under this new approach. This programme represents a radical policy shift by government; the role of bureaucracies is confined to a facilitating role, whereas the local community is vested with decision-making powers in programme related administrative and financial matters.

An action research study by the UK-based International Institute for Environment and Development (IIED) and the Institute of Development Studies, University of Sussex seeks to analyse the dynamics of institutionalising participatory processes and approaches for natural resource management by selecting case studies from Senegal, Burkina Faso, India, Indonesia and Mexico. In the case of India, the participatory watershed management programme was chosen for the study in Andhra Pradesh (AP).

1.1 Objectives and methodology

The aim of our study was to analyse the degree of people's participation in the watershed management programme, and to identify the conditions (and barriers) for institutionalising participatory approaches for watershed management.

This study is an *ex-post* study of the participatory approach and processes that took place in three sample watersheds during all stages of implementing the watershed management programme. The three sample watersheds we chose for our study (Table 1) are all in the southern part of Chittoor district. We chose them because they represented both successful and unsuccessful watersheds (in terms of people's participation). They are each funded and managed

by a different combination of organisational types (government only, government/NGO partnership and NGO only). They were chosen in consultation with the State, district administration and the implementing agencies.

Table 1: Details of the sample watersheds

Funding agency	Project implementing agency	Name of the watershed
Ministry of Rural Development (MoRD)	Government agency: Drought Prone Area Development Programme (DPAP)	Bisanatham, abbreviated in this report to G-G (for g overnment funded- g overnment implemented)
MoRD	NGO: Gram Vikas Samstha (GVS)	Panjani, abbreviated in this report to G-N (for g overnment funded- n on-government implemented)
A consortium of donors: CWS, OXFAM, Bread for the World (BFW) & others	NGO: Krushi, under the Rayalaseema Watershed Development Programme (RWDP)	Garigelavanka, abbreviated in this report to NN (for n on-government funded- n on-government implemented)

We collected quantitative information about the sample watersheds from secondary sources, i.e. records maintained at the watershed level, and in the project-implementing agency (PIA) and Drought Prone Area Development Programme (DPAP) offices. We also used a range of participatory methods to collect primary data about the processes involved:

- Transect of watershed area along with Watershed Committee (WC) and User Groups (UGs).
- Focused group discussions with self-help groups (SHG), UG, and WC and in *Grama sabhas* (Village General Bodies)
- Semi-structured interviews with office bearers of local institutions: the Watershed Development Team (WDT), PIA, Multi-Disciplinary Team (MDT) and the Project Director (PD)
- Triangulation of data with interdependent stakeholders
- Workshops with all GO and NGO PIAs separately to share the main findings and capture participatory processes related insights/issues experienced by other PIAs in the district.

We analysed the data using qualitative and quantitative methods based on the monitoring and evaluation framework developed by MANAGE (National Institute of Agricultural Extension Management) as part of this study for Andhra Pradesh Rural Livelihoods Project (APRLP).

2. Background

2.1 Ministry of Rural Development (MoRD) Watershed management programme

The MoRD of Government of India (GoI) came up with participatory watershed guidelines in 1994 to promote participatory approaches on a large scale (see appendix A). While bringing about three fundamental reversals i.e., from top –down to bottom-up, from sectoral to integrated and short term to long-term, the envisaged participatory watershed approach has the following main principles:

- Organising community and building their institutions to plan and manage their own development

- An integrated approach to treatment of a well defined micro-watershed area of around 500 ha from ridge to valley – duly recognising the indigenous technical choices
- People’s contribution to ensure their stakes in the process and also sustainability of infrastructure developed
- Focus and priority for poor and women, and equitable sharing of benefits
- Increased capacities to access income generation opportunities
- Convergence of programs that can build upon the regenerated resources and organised strength of communities

The guidelines envisage new arrangements for channelling funds and managing projects. The District Rural Development Agency (DRDA) or *Zilla Parishad* (district-level local government) have overall responsibility for programme implementation in the district¹. They appoint a ‘Watershed development advisory committee’ (DWAC) to advise on issues such as the selection of villages, training and monitoring. Project implementing agencies (PIAs) are selected by the DRDA/DPAP. The PIAs are responsible for appointing a ‘watershed development team’ (WDT) of four members representing disciplines such as agriculture, engineering, life sciences and social work.

The WDT works with the communities in planning and implementing the watershed programme. Each team is expected to handle 10 micro-watersheds. The ‘watershed association’ (WA) represents all members of the community, who are directly and indirectly dependent on watershed area. Those who are indirectly dependant have to be organised into Self-help groups (SHGs) to give pro-poor focus and build in stakes on the natural resources in conservation and management practises by providing access and control over them. User groups (UGs) are those who depend on natural resources directly and take up conservation activity of natural resources. The WA appoints a ‘watershed committee’ (WC) consisting of representatives of SHGs and UGs, the *gram panchayat* (elected village assembly) and WDT. Each WC has a paid secretary who maintains the records and accounts.

The G-G and G-N watersheds were implemented under the framework of MoRD guidelines. The N-N watershed was implemented under the Rayalaseema Watershed Development Programme (RWDP); it does not have any written guidelines but it was started with certain guiding principles and PIAs had full flexibility in implementation of activities within the ambit of these principles. The PIAs were only guided to address the issues and concerns throughout with their own site-specific strategies. Nonetheless, we have also analysed this watershed in the context of the processes given in MoRD guidelines.

2.2 Case study watersheds

Chittoor district is bounded by Tamilnadu state to the east and south and by Karnataka state to the west. It receives an average annual rainfall of 826mm, mainly divided between the southwest monsoon (June-September) and the northeast monsoon (October-December). The soils in the district are mainly red loam and red sandy. About 28% of the district is cultivated, of which 35% is irrigated, mainly from tanks and wells. Groundnut is the principal crop (46%)

¹ Andhra Pradesh State made two innovations in the original organisational structure proposed in the watershed guidelines. In lieu of District Rural Development Agency (DRDA), it has created a separate unit exclusively for coordinating the watershed programme at the District level, which is called as Drought Prone Area Programme (DPAP). Second innovation is the Multi-Disciplinary Team (MDT), which constitutes a team of technical professions drawn from the line departments for supporting DPAP in technical scrutiny and sanctioning of watershed plans. This has made easy to coordinate and monitor the programme in a better manner.

followed by sugarcane. Other important food crops grown in the district are paddy, bajra and ragi. The district has a relatively large proportion of forest area (28%).

Since 1995-96, 620 micro-watershed programmes have been implemented in Chittoor district. They are funded from a number of different sources (Table 2): Drought Prone Area Programme (DPAP), Employment Assurance Scheme (EAS), Integrated Wasteland Development Programme (DPAP), Andhra Pradesh Hazard Mitigation & Ecological Restoration Programme (APHM&ERP) – a mixture of Government and Non-Government, all guided by Government issued common watershed guidelines 1994.

Table 2: Funding arrangements of micro-watershed projects in Chittoor district

Scheme/Batch	Total No. of watersheds
DPAP – I	47
DPAP – III	58
DPAP – IV	55
DPAP – V	47
DPAP – VI	113
DPAP – VIII	16
EAS (on going)	110
IWDP – I	17
IWDP – II	17
IWDP – IV	22
IWDP – V	12
IWDP – VI	12
APHM & ECRP	20
RIDF – VI	74
Total	620

As explained above, each of the case study watershed development programmes is implemented by a different agency.

Bisanatham watershed programme is implemented by the district government agency, the Drought Prone Area Development Programme (DPAP). The Watershed Development Team (WDT), a multi-disciplinary team primarily responsible to facilitate field level processes in watersheds, was drawn from the Government line departments of Agriculture, Engineering and Forest sectors.

The Panjani watershed programme is implemented by Gram Vikas Samstha (GVS), an NGO established in 1980 for the development of poor. It is active in 125 villages in four backward mandals (revenue and administrative units having 35 to 40 villages) in Western Chittoor. Leadership development, strengthening of community-based organisations (CBOs), improving quality and infrastructure of school education, health education, promoting thrift and credit associations of women, income generation opportunities, tanks renovation and watershed development are the key activities of GVS. The target group includes small and marginal women and men farmers. Its head office is located at Punganur, near Madanapalli.

The Garigelavanka watershed programme is the only one entirely funded and implemented by an NGO (Krushi)⁵ under the Rayalaseema Watershed Development Programme

² Hereinafter called as G-G watershed

³ Hereinafter called as G-N watershed

⁴ Hereinafter called as N-N watershed

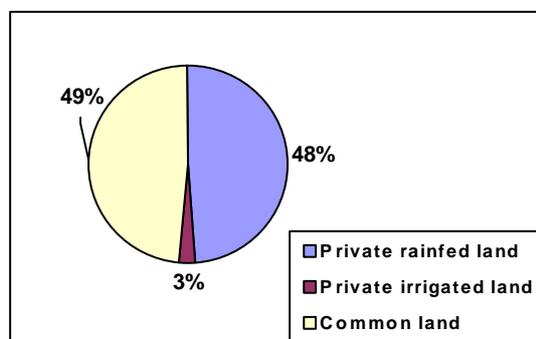
⁵ Krushi was started in 1991 and since then it has been working in Madanapalli, Nimmanapalli and Kurabalakota mandals covering around 180 villages in these mandals. Promotion of agriculture labour unions, women's forums to address their issues, women's savings and thrift co-operatives, farmers' co-operatives, watershed development,

(RWDP), which is being supported by a group of donor organisations. This was begun more or less at the same time as the MoRD participatory watershed programme was launched in the state. Unlike the MoRD it had no framed guidelines, and is instead guided by local principles and concerns: people’s participation, a contributory approach, integration of gender and equity concerns and sustainable local institutions.

2.2.1 Bisanatham or the G-G Watershed

Bisanatham watershed is located in Gudipally mandal on the AP-Karnataka state border, about 16 kilometres from Kuppam town. The watershed area includes six hamlets belonging to three revenue villages: Bisanatham, Athinatham and Kudathanapalli. About 367 families live in the watershed, of which 14% Scheduled Castes (SC), 80% Backward Castes (BC) and 8% Other Castes (OC-generally referred to upper castes) communities. Total land area is 1315 ha and the terrain is highly undulating.

Fi 1: Type of lands in G-G watershed



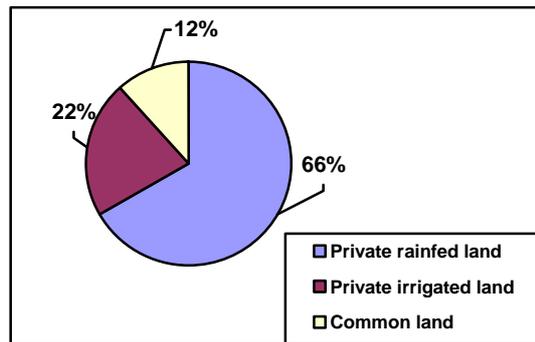
There is an almost equal proportion of private and common lands (49% and 48% respectively, see Figure 1). The watershed is drained by three main streams and most of the land is covered by hillocks. About 97% of the soils are of the red *chalka* type; the remaining 3% is medium black soil.

2.2.2 Panjani or the G-N watershed

Panjani watershed is located in Panjani mandal about 14 kilometres east of Punganur town. The watershed area includes four hamlets: Rachepalli, Dinnepalli, Nelapalli and Bommalakunta, belonging to Kolathur, Gummukonda and Panjani revenue villages. About 146 families live in the watershed, of which 13% SC, 47% BC and 40%OC communities. Total land area is 575 ha and the terrain is more or less flat. Out of this, the ratio of private rainfed to private irrigated land is 3:1(hown in Figure 2) with about 12% of common land. The watershed’s watercourses eventually drain into the Kanya River, which forms the eastern boundary of the watershed. About 64% of the soils are of red *chalka* type, 11% red sandy gravel and the remaining 25% is deep black soil.

organising disabled people, rehabilitation of small irrigation sources are the key activities of Krushi. The target group includes the rural poor, *dalit bahujan* (Scheduled castes and poor backward castes) women, children and agricultural labourers. Its head office is in Madanapalli.

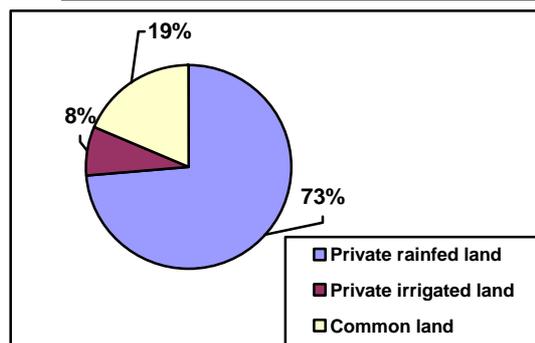
Fig.2: Type of lands in G-N watershed



2.2.3 Garigelavanka or the N-N watershed

Garigelavanka watershed is located in Madanapalli mandal and is 11 kilometres from Madanapalli town. The watershed includes six hamlets: Krishnapuram, Dadinaianidoddi Thanda, Bommancheruvu, Mandabanda, Yerravandlapalli and Bogitivaripalle. They belong to two revenue villages: Bommancheruvu and Penchapadu. About 281 families live in the watershed, of which 12% SC, 22%ST, 36%BC and 30%OC communities. Total land area is 342 ha and the terrain is highly undulating and stony.

Fig. 3: Type of lands in N-N watershed



The extent of private land is large in this watershed (Figure 3). One long, large stream drains the watershed area. About 71% of the soils are red sandy gravel, 8% are medium black soil and the remaining soil falls into the 'special problem category' i.e., saline soil.

3. Analysis of People's Participation

3.1 Participatory processes during different phases of the project

There is great variation in the three sample watersheds in terms of the mode and level of people's participation during planning and implementation. This is mainly due to the type of implementing agency (GO/NGO), the approach of management agencies and the guidelines/strategies of funding agencies for implementing the participatory watershed programme. In this section we analyse the participatory approaches and processes taken during preparatory, planning, implementation, monitoring and evaluation phases in the three watersheds.

3.1.1 Preparatory phase

The preparatory phase is very important in a participatory watershed development project, with the approach taken during this phase laying the foundations for future phases. Hence, the nature and quality of processes that take place in the preparatory phase influence the participatory approaches taken during watershed implementation. The analysis of process steps that were followed in three sample watersheds is presented below.

The G-G watershed

The preparatory phase in the G-G watersheds was very short. The watershed area was neither demarcated nor delineated. Thus the actual target group could not be properly identified for concentrating on mobilisation and involving in subsequent phases.

In this watershed the Watershed Development Team was made up of government officials deputed into DPAP. They visited watershed villages without arranging a meeting and informed whomever they happened to meet during their first visit about the government's sanctioning of the 'scheme' to develop land and water resources of the villages. They explained briefly the decentralisation of planning and implementation processes as envisaged in the guidelines. The hamlets within the watershed were all about two or three kilometres apart. This physical separation made it difficult to convey even this limited information about the programme to everyone. The WDT never tried to organise awareness 'camps' or public meetings to explain the watershed concept and the programme guidelines emphasising the participatory approach. Most people are still not aware of the approach and programme details. The entry point activity (EPA), which was budgeted and meant to win the confidence of the communities and attract them towards collective action, was not taken up, as the WDT officials were not aware of it. Later the EPA money was used for physical works.

WDT officials never attempted to develop rapport with the communities when visiting villages. For them visiting a watershed was only a field visit ('camp' in bureaucratic terminology). They paid little attention to building relationship among community members, especially poorer sections. Neither did they organise PRA exercises, which will bring people together and also enable good rapport with facilitators while understanding their resource related problems collectively. As a result, the people only understood the watershed programme to be a government-sanctioned scheme for building check dams and other structures.

The G-N watershed

In the G-N watershed, the preparatory processes were better than in the G-G watersheds in spite of several constraints. The implementing agency (GVS) already had a working relationship with the communities in one way or other. When the watershed programme was sanctioned, the PIA and WDT visited all four villages to explain, in well-attended, pre-organised meetings, about the programme and its participatory approach. In later regular meetings the WDT explained the watershed concept and the guidelines, formation of new institutions and their roles and responsibilities etc. Night meetings were also held. Consequently, the community's awareness level of the main features of the project was relatively high, despite the short duration of the preparatory phase.

The watershed boundary was clearly delineated in G-N watershed based on the drainage pattern using the topographic map of the area during a transect walk with the farmers.

The N-N watershed

The preparatory processes were good in the N-N watershed. They received the full attention of the PIA and the community was organised through a strategic and systematic approach. There were no budget and time constraints, and the capacities of WDT members were built adequately for the purpose. Being basically an activist group, the NGO Krushi began awareness building from the bottom i.e., in the *dalit* [scheduled castes) communities. Songs and cultural programmes framed around social evils and exploitation were the main media used as an entry for the organisation. Later in all villages they organised watershed awareness camps through cultural programmes about the watershed concept, components and issues. During these they explained about the programme's strategies, its contributory and participatory approach, gender and equity concerns and the need for local institution building for sustainability. Both male and female Coordinators (WDT members) visited the villages regularly and also stayed overnight. They created awareness through wall writings and charts. Awareness of potential income-generating activities like tamarind business, custard tree leasing, petty shops, sheep rearing, brick making, etc., was also created, in addition to explaining about soil and moisture conservation.

The WDT's approach in dealing with the community is interesting in this watershed. They referred to community members as *Akka* (sister) and *Anna* (brother), which proved to be a good technique for building close relations. Another important aspect is that they began identifying and solving people's problems related to land, housing, and government schemes etc., by providing necessary linkages and guidance. This holistic approach, without confining themselves to watershed activities alone, helped to develop very close rapport, especially with resource poor families.

The watershed (and sub-watersheds) was not delineated from a map,⁶ but instead demarked/identified by the community, including all the land of the target group of poor families. However, the drainage pattern was also taken into consideration. PRA exercises were conducted in both the G-N and N-N watersheds. But in the latter the output was regularly referred to and continuously used.

3.1.2 Planning Phase

The G-G watershed

In the G-G watersheds, the planning processes were very poor and did not follow the spirit and steps envisaged in the watershed guidelines. In one G-G watershed, a 'PRA' exercise was organised to prepare the 'participatory' treatment plan. The process followed was that the three officials of WDT representing the Agriculture, Engineering and Forestry departments each took some villagers along with them, went around the area and identified the activities to be taken up in their respective faculties. The community did not have a clear idea of what was going on. The ideas, needs, aspirations and priorities of communities were not taken into consideration at all. In the evening the budget was prepared by the WDT officials for the list of components identified as per DPAP rates and consolidated into an action plan for the watershed area. This was read to the public in the meeting the next day. Since the community did not understand the purpose of the exercise clearly, it went unheard and nobody took note of it. The entire process was completed within a couple of days because of pressure from the DPAP office.

No primary information was collected about the watershed area and the people living there either through household surveys or PRA exercises. These techniques were in fact not

⁶ Unlike the DPAP watersheds RWDP did not set a fixed size for watersheds.

known to the WDT at that time. Secondary information was collected from Mandal Parishad Development Officer (MPDO) and Village Administrative Officer (VAO) to incorporate in the action plan. Subsequently, in the following years the WDT members themselves prepared the annual plans by filling the prescribed formats within the budgets fixed by DPAP. When funds were released, the works were taken up based on the requests made by the elite farmers. There was no prioritising of works in terms the needy area and poor farmers. The original plans submitted to DPAP were never revisited again nor there was any monitoring from the DPAP to check works were implemented as per the plans submitted.

The G-N watershed

In the NGO-implemented watersheds, the planning process was more elaborate. In the G-N watershed, a door-to-door socio-economic survey was conducted and the findings later shared with the community in a meeting. Secondary information was collected from the Revenue Department. Through a public announcement system (where one person goes around the village streets beating a drum), the villagers were informed about PRA exercises. After explaining about PRA to the community members, the WDT (including other staff of GVS) and community members divided into three groups and transected the fields, identified problems, encouraged the farmers to find solutions and prepared a list of activities. This process went on for four days. Including all the components, a four-year comprehensive action plan was prepared. *Vakira* (farm ponds), a local indigenous technology, was one of the main components included in the action plan. The consolidated plan was discussed in a *Grama sabha* (Village general body), approved by the office bearers and then sent to DPAP for sanction. Later, annual plans were submitted for the release of budget in consultation with the WC and WA. Flexibility was allowed in action plan preparation and new proposals from the farmers were considered even during implementation. A midterm planning (modification of plan) exercises were done later to re-assess farmers' needs relative to the budget available and for prioritising the works in the light of new requests.

The N-N watershed

In the N-N watershed, planning was even more decentralised and unconstrained by budget limits and procedural hassles. However, the entire process was strongly guided by the strategies of RWDP. PRA exercises collected detailed benchmark data about land status, soil types, water resources, groundwater levels, cropping patterns and productivity, livelihood sources, livestock, migration, fodder and fuel availability, details of property owned by women, work and income availability to women, etc. The PRA exercise were organised at each village separately and then all came together at a watershed level PRA. The planning was done by visiting each and every piece of land and actively involving the farmers. There was no top-down prescription of components and nothing was rejected as long as it was really needy and useful to the farmers. There was no pre-allocation of budget for components. Krushi's entire staff was involved in the exercise for 15 days. Many stayed in the villages overnight for better interaction with the community.

It was made clear to all the farmers that there was to be a mandatory 50% contribution for work on private lands and 25% for work on common land.⁷ All planned works were measured in the field. In a final meeting, a budget estimate (excluding the contribution part) was prepared with local rates as agreed/decided by the community. In preparing the action plan, equal priority

⁷ Though MoRD watershed guidelines talk about contribution, such arrangements were never discussed with the community in the G-G watershed and whereas in the G-N watershed the community was informed but never insisted on it.

was given to men and women. The amount of funds and the planning process were also flexible. An action plan with a detailed budget was approved for an initial two years and then later sanctioned for two more years as the project progressed. Recently another year extension has been given.

In comparison, in the DPAP funded watersheds the formats of the action plan were pre-designed and the action plans were prepared by just filling in the number of items against a list of activities printed, leaving little scope for flexibility or to accommodate local ideas and suggestions. Budgets were pre-allocated to each sector; hence the treatments along with the budgets are planned as per these pre-decided percentages. In contrast, in the N-N watershed the budget was very flexible and more treatments were added to the action plan as people's understanding of resource problems grew. Hence the treatments undertaken in the N-N watershed are more diverse than in the DPAP watersheds (see Appendix A).

Interestingly, in MoRD watersheds throughout Chittoor District bunding has not been allowed. A bund is long, raised earthen mound across the slope for arresting soil erosion and run off. This is because the District Collector (the chairman of the watershed programme in the district) found malpractices in payments for bunding works (like strengthening and shaping existing bunds to claim full payment and false claims for bunding works). He ordered all bunding to be stopped immediately throughout the district.⁸ Thus only drainage line treatment measures were included in the action plans prepared in the government funded and implemented watersheds, such as gully checks (GCs), gabions, drop spillways, diversion drains, check dams, and Percolation Tanks (PTs). Continuous contour trenches (CCTs) were used on hillocks. Other activities included horticulture (mostly mango) and tree plantations (teak and other species).

3.1.3 Implementation Phase

The G-G watershed

Yet again, the implementation approach followed in the G-G watersheds was not in line with the spirit of the participatory approach. In both G-G watersheds, only farmers who would receive direct benefits from a treatment implemented the works in the drainage lines. DPAP held PIAs responsible for any misuse of funds by the WC or farmers. So PIAs avoided giving any advance for materials/construction work fearing that people might misuse money advanced to them. As a result, only those farmers who could invest their own money initially were allowed to build structures. After the work had begun the structures were measured and payment made. Those who had no money borrowed from moneylenders or took from SHGs through their wives. However, this procedure, which was developed to curtail the so-called misappropriation of money, has gradually become the norm and is a pre-condition for requesting any structure; thus it excludes poor farmers from the opportunity to improve their land.

In both G-G watersheds, there was no attempt to identify the really needy farmers and encourage them to take up works on their land. It was only the WC members and their associates who got the opportunities. Since the programme details/information did not reach the whole community, most of the small and marginal farmers watched with suspicion. As they saw the structures grow and the benefits flowing, slowly farmers began to come forward, but the budget was already exhausted by then. Thus despite the gravity of the soil erosion problem and the need for water harvesting, lack of awareness and access to information and improper planning and prioritising of works meant that this was largely not tackled.

⁸ The Project Director later re-allowed bunding, but with certain onerous conditions to prevent malpractice.

In the G-G watershed there was greater emphasis on externally developed technologies (as opposed to indigenous, traditional structures). A comparatively limited number of standardised technological options were used, with more than 80% of project investment allocated to constructing gully control and water harvesting structures (see Appendix A). This is unsurprising as the WDT members are government technocrats and trained in a blueprint type of approach in implementing respective technical components. Local people were not involved in identifying various indigenous technological solutions for resource related problems.

The G-N watershed

Implementation was more participatory in the G-N watershed. In this watershed too the individual farmers constructed all the structures, but there were some procedures laid out at every stage to ensure people's participation and collective action by users. The interested farmer applied to the watershed committee and got signatures from neighbouring farmers (users) nominating him as the person responsible for building the structure. A rough estimate was prepared by the farmer/s using local rates. Then the Engineer of WDT visited the proposed site, assessed its feasibility and prepared a technical budget using the farmer's estimate. This was approved in a WC meeting and copies of the work order given to the concerned farmer, who then distributed them to neighbouring farmers for information. The farmer would then begin the work with his own money by engaging a mason and labour for construction.

All the payments were invariably made in the WC meetings after discussing the progress and quality of the construction in public. The PIA/WDT conducted orientation meetings for all farmers and users of the structures on work quality, time schedules for work completion, conditions for repairing a structure following a breach or leakage etc. *Vakira* (farm ponds) were the most commonly built treatments. All were constructed by local labour, mostly the farmer's family. However, farmers complained of lower payments than had been included in the initial estimated budget. This occurred when the actual dimensions of the structures did not match the required specifications given in the design.

Indigenous technological options were given due consideration for the development of private land and water resources, but very little consideration was given to such technologies for treating drainage courses and common land (Appendix A). The approved technical plan consisted of measures/structures based upon exogenous as well as indigenous technical knowledge. Nearly 70% of the investment under the project was allocated to indigenous technologies and a wide range of exogenous and indigenous technical options were included in the action plan.

The N-N watershed

In the N-N watershed, farmers implemented all the works themselves. The watershed was divided into micro-catchments and implementation carried out one after another following the ridge to valley principle. About Rs.1080/acre were spent. The Village Committee planned the works and supervised the building for works in their village/micro-catchment. They made it compulsory that every farmer must work on his land. If they could not, they sent labour on their behalf and were present when the work was going on. Priority was given to single women and landless in all the works, especially migrant labour. Labour groups were formed and trained to construct stone gully checks. Women's participation was ensured in all the works and they received equal wages. There was no constraint on selection of technologies. Bunding was allowed and in fact it is a major component in the watershed, as all the farmers preferred this technology for reclaiming their lands. The farmers worked (as labour) on each other's lands for treatments like bunding, land clearance, waste weir construction etc.,.

3.1.4 Monitoring and evaluation phase

The guidelines envisage a very active participation of community in monitoring and evaluation of watershed projects and suggest some process steps involving the community groups, PIAs, and funding agencies. I discussed below the comparative assessment of monitoring and evaluation across watersheds.

Periodic reviews and monitoring by community

At the community level, reviews and monitoring were not in done in the G-G watersheds. Works had begun when the funds were released. The Secretary/volunteer supervised the works and reported on progress to the WDT. The Chairman of WC also went around to see the progress of structures. In the G-N watershed, the community did the review and monitoring in periodic watershed committee and Grama Sabha meetings. In the N-N watershed, apart from reviewing village committees, watershed committee and watershed association, a monitoring committee was formed of active men and women to monitor the execution of physical works and their maintenance by farmers.

Periodic reviews and monitoring by funding agency

In DPAP watersheds, MDT did the review and monitoring of the watersheds that fell under their jurisdiction on behalf of DPAP. They visited watersheds once or twice in a month when they reviewed the works, checked the quality, conducted technical feasibility of structures costing more than Rs. 25,000 and interacted with the WC and farmers. The PD conducted monthly review meetings region-wise with the PIA and WDT. The issues generally discussed included monthly work progress and reporting, new circulars, field problems, funds releases etc.

In the N-N watershed, the Project Officer of RWDP visited the watershed once every three months to review progress and give advice/guidance to the WDT (Coordinators) and the community groups. In fact, all the NGO partners operating watershed projects under RWDP would meet once every six months for 2 to 3 days at a common place to share physical and financial progress, experiences, problems and issues with each other. Since this process was generally more participatory and relaxing, the NGO would feel it very enriching and helpful to facilitate the participatory watershed project in their villages. This also provided an opportunity for the funding agency to understand the field level issues and make suggestions/modifications keeping the strategies in view. RWDP did not have any fixed written guidelines for partners so this six monthly review enabled it to frame mutually agreed procedures to implement the projects while addressing any concerns.

In the DPAP watersheds, auditing of accounts and records was done by chartered accountants once a year, after the completion of the financial year. In the N-N watershed, auditing was also done annually by the auditor who audited Krushi's other projects.

Social auditing and transparency in transactions

In G-G watershed, there was no transparency in financial transactions. Only office bearers and WDT were aware of expenditures since all the transactions would take place between them. WC meetings were not held regularly. Even if held, issues like releases, withdrawals, balances, and payments were not discussed. WC members participated in discussions held for deciding the type, number and location of structures but never discussed

financial matters. Once the WC authorised a farmer to construct a particular structure, subsequently all transactions would be between him and the WDT-ENG only

Social auditing is a measure introduced by DPAP to ensure financial transparency. It involves putting up boards at prominent places displaying the details of budgets released and expenditure incurred component wise. These boards did exist in both the MoRD watersheds as per strict instructions from DPAP. The boards painted 4-year action plans with components and budget break ups onto the walls of school buildings. But the practice of updating yearly financial and physical progress concurrently was not attempted. During *Janmabhoomi*, a scheme introduced by the government where once in a month all the line department officials visit the village and interact with villagers, bulletins about watershed project were distributed as routine practice to the visiting officials, public representatives and the farmers but these bulletins only included details of total releases, expenditure incurred and balances. Detailed budget break downs were not given.

Nonetheless, in the G-N watershed there was comparatively more transparency. All transactions regarding works and payments were carried out in WC meetings and Grama Sabhas. Releases and expenditures were discussed openly. A treatment map and periodically updated works progress map were painted on the school building in Bommalakunta village. On the same wall, a social auditing board was also painted, which was periodically updated as the works progressed in the watershed. The *Janmabhoomi* bulletins in the G-N watershed were more detailed than in the G-G watersheds, containing information like the names of beneficiaries, type of structure, quantity of work, expenditure incurred, contribution, village/hamlet where works were done etc. These bulletins were also sent to Member of Legislative Assembly (MLA), Member of Parliament (MP), Nodal officer, Mandal Parishad President (MPP), MPDO, Mandal Revenue Officer (MRO), VAO, Village Development Officer (VDO) and MDT and PD to keep them informed of progress.

Since the N-N watershed is out of the purview of DPAP, the procedures were different here. The funds were received by Krushi directly and kept in its project account. Though people's institutions (VCs and WC) did not have any control over the operation of this account, systems had been laid down to ensure full accountability and transparency in all the transactions. The Coordinators (WDT) would share the information about releases and balances regularly with the watershed committee and in general meetings of the watershed association. All the payments were made after taking authorisation in the form of resolutions passed by watershed committee. The watershed map was painted on the school building in Bommancheruvu, although they did not do a social audit.

Midterm evaluation by the PIA

In the G-G watersheds, no midterm evaluation was attempted by the PIA/WDT. In fact, they never tried to take stock of farmers' needs even in the latter stages to see whether the remaining budget would be sufficient or whether any prioritisation would have to be done. In the absence of this system, the genuine needs of small and marginal farmers, especially those having lands on the ridge area, were ignored. In the G-N watershed, a participatory midterm evaluation was done involving WC members and farmers in the process. Together they reviewed the works done, identified new works based on farmers' proposals, and prioritised and prepared a final plan that was later approved by the Grama Sabha. In the N-N watershed, such evaluation was a regular process. During WA meetings and at the time of annual action plan preparation, the

communities regularly evaluated the project and this formed the basis for future planning of activities. The WDT and Chief Functionary of Krushi mainly facilitated it.

Midterm evaluation by funding agency

In Chittoor district, DPAP sent forms to PIAs (in 1999) for midterm evaluation of their watersheds. The concerned WDT members filled the forms in themselves, unlike other districts where external persons (postgraduate students, schoolteachers' etc.) did it. The forms included only physical indicators focusing on achievements and impacts; social mobilisation and institutional indicators were never included. The whole of RWDP was evaluated a couple of years ago by external consultants on behalf of the donors consortium supporting it.

3.1.5 Summary: participatory processes across watersheds

Indicators or parameters were developed for assessing the participatory processes based on the framework envisaged in the watershed guidelines. For measuring the quality of each indicator, a three point measuring criteria developed with a qualitative ranking of poor performance, average performance and good performance, and they were denoted with red, yellow and green symbolically in the same order. For transforming the qualitative ranks into quantitative form '1-10' ordinal scale was adopted with values ranging from 1-3 for red, 3-7 for yellow and 7-10 for green. To avoid cumbersome calculations, mid values 2, 5 and 8.5 were taken respectively for these ranks.

With the help of field notes and the insights gathered during intensive discussions with primary and secondary stakeholders, ranking of measuring criteria were done using the symbolical red, yellow and green. In the next step, all reds, yellows and greens were added up under each category of watershed and a summary statement about a list of parameters and their ranking under each component prepared. Then the value of parameters with each type of rank was arrived at multiplying with mid values (viz., 2, 5 and 8.5) of respective rank. Assuming that the total of each rank is equivalent to 100, under each type of rank the percentage of overall number of parameters was worked out. Cobweb diagrams were developed taking overall percent of each process theme (= % of total value of all ranks out of the maximum value derived multiplying the number parameters with 10 points) and analysed to understand the process variations through comparison of performance across the watersheds.

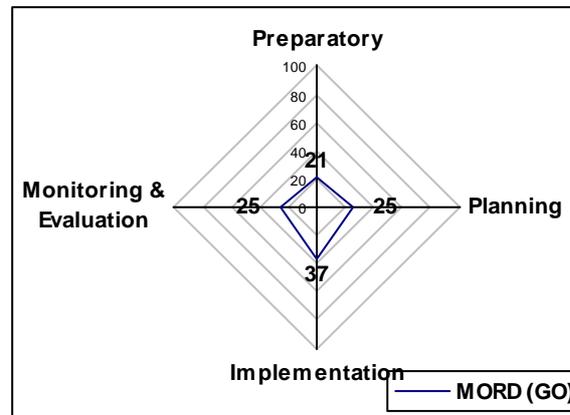
The G-G watershed

Figure 4 is a visual summary of the degree to which participatory processes took place during the different phases of the watershed project in the G-G watershed. Participation was quite inadequate in the G-G watersheds for various reasons. The preparatory and planning phases were very short and brief, and the implications of this are clearly visible. Most of the community members did not understand the main features of watershed project. Community mobilisation and organisation were not adequately done. As a result, most of the farmers did not participate. The institutions, which were supposed to play active role, could not perform their envisaged roles. The WA and UG were non-existent. The WC was formed without any preparatory processes.

Entire planning process was confined to identifying certain soil and moisture conservation works and budgeting, mainly by the WDT. People were not sensitised for the purpose, nor were their ideas and preferences sought. The implementation process began too early and continued until the budget was exhausted. Systematic participatory monitoring and evaluation related processes did not occur. The impact of all this is clear. A set of watershed

technologies was executed and only a section of farmers benefited, with no traces of gender, equity and participatory concerns under the project.

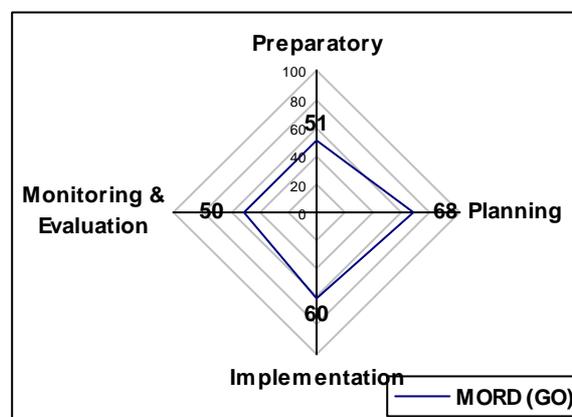
Fig. 4: Participation at various stages in the G-G watershed



The G-N watershed

Participatory processes were better here than in the G-G watershed (Figure 5). Despite following the same watershed guidelines and having the same district-monitoring agency, the organisation’s commitment to a participatory approach, working culture and previous experience in watershed project implementation helped it do a better job. Though the preparatory phase was short, because of insistence by the PD-DPAP for WC formation and submission of action plans soon after assignment of watersheds, the PIA carried out preparatory processes using the entire staff of the organisation within the available time. Awareness generation and community organisation was done continuously by the WDT for sustaining the interest and co-operation of people. Planning processes ensured more active participation of men and women. The PIA staff members were well versed in PRA techniques, which helped to develop action plans incorporating people’s needs and local knowledge. The implementation phase lasted longer and the WC/WA were actively involved in decision-making, reviewing and monitoring works execution, although fully-fledged UGs did not exist. Monitoring and evaluation processes were also better than the G-G watershed in terms of community participation and accountability of watershed institutions.

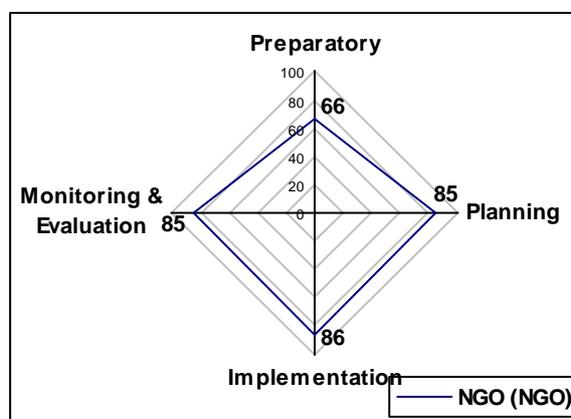
Fig. 5: Performance of processes in G-N watershed



The N-N watershed

This watershed scored the best in terms of community participation in all four phases (Figure 6). The participatory processes occurred intensively with active participation of local communities, especially dalits and women. Issues like gender, equity, cost sharing, participatory approach and institutional sustainability were given priority when implementing this watershed project. The PIA (Krushi) is committed to empowering dalit bhahujan communities and organised various forums in the area for enabling them to voice their concerns collectively. This background of the organisation positively affected watershed implementation. Development of degraded natural resources was done while addressing these concerns. Since this is the only watershed implemented by Krushi, the organisation could devote more and time and effort, along with the WDT. Another important reason for effective community mobilisation and operationalising participatory approaches was the close facilitation by male and female Coordinators (WDT).

Fig. 6: Performance of processes in N-N watershed



Higher scoring of processes in all phases indicates institutionalising participatory approaches and long-term sustainability of watershed management by local communities. The success of the participatory watershed could also be attributed to the range of interventions taken up under the project in the N-N watershed. Unlike MoRD watersheds, where watershed technologies formed the main menu for development, in this watershed various economic, social, cultural and emotional needs of communities were recognised and interventions planned accordingly. Other programmes supported by government and donors were integrated with the watershed project.

3.2. Equity issues

3.2.1 Participation of resource poor families

The participation of resource poor families (RPF) was totally neglected in the G-G watershed. The facilitators were not sensitive to this issue. Neither was this ever thought of during planning and implementation. No specific allocation of funds was made for equity-oriented development. While the chair of the WC was a Dalit, this does not indicate any special focus on RPF in works allocation. In fact, it was only when funds were exhausted and the project came to an end that many dalit families asked for works. It was too late by the time they understood the programme. In Bisanatham, some works were given to SC families whose lands were located on the ridge; those lands were treated as part of the ridge to valley principle.

Common land was developed without identifying dependent RPF and issues related to protection and usufruct allocation were not resolved.

In the G-N watershed, a mixed picture emerges. The RPF have benefited but there was no specific allocation in the project budget for equity-oriented development. The focus of the NGO PIA (GVS) is on small and marginal farmers, and especially dalit families. This reflects in the watershed project implementation too. Under the PIA's whole village approach, the RPF benefited along with resource rich families. Most of the physical works were taken up in Nelapalli village, which is populated exclusively by SC families. The common land located adjacent to these lands is under the possession of these families, though ownership is claimed by a landlord from a nearby village who encroached it. Gully checks, bunding, trenching, check walls, check dams and plantation works were carried out in these lands, which would also improve the recharge of the wells owned by SC families downstream.

DPAP's decision to stop bunding in MoRD watersheds deprived many resource poor families of taking advantage of public investment to improve their lands since bunding is a very common treatment requested by small and marginal farmers to conserve the soil and moisture in their degraded lands.

Unlike these watersheds, the N-N watershed project is primarily targeted at resource poor families. Most of the investment was allocated to improving the productivity of RPF's lands. They were given priority in the allocation of works. Leadership was built among the poor. Only a 25% (unlike 50% in the other watersheds) contribution was collected from single women. Only a 10% contribution was made into the watershed development fund (WDF—see section 3.3.2), unlike 20% in the case of resource rich families (RRF). RPF were consulted first and actively involved in project decision-making. Trainings were specifically targeted at them. Dalit women were organised into savings groups and facilitated to solve their social problems such as untouchability, bonded labour, child labour etc. Awareness was generated for negotiating minimum wages. They were helped to take income-generating activities like tamarind auction. Loans were provided to only resource poor SC, ST and BC families. A water and sanitation programme was implemented in SC colonies. Equity concerns were therefore one of the main guiding principles, and constant support and an enabling environment was created by the Project Officer (PO) and Advisory Committee of RWDP.

3.2.2 Women's participation

The MoRD guidelines provide for the institutional mechanism of Self Help Groups (SHG) for organising women and RPF to initiate income generating projects. Other than this, there is no emphasis on women's empowerment. During implementation, in G-G watershed due to lack of sensitivity, the gender concerns never received the attention of management agency (DPAP) officials. Even the minimum (formation of women SHGs and release of revolving funds) that the guidelines suggested was not followed up seriously by subsequent PDs. The revolving fund amount (see section 3.3.1) was not released to the PIA and was instead centralised at PD level and put into the common pool, making procedures of release cumbersome and depriving eligible groups of valuable funds.

The need to form SHGs at the beginning of the project, i.e., during the preparatory phase, was not recognised. In the G-G watersheds, SHGs were either not formed at all (in Bisanatham) or else formed much later to receive RFs (in KVMA). A PD's directive insisted that women members be increased in the WC. But the women in these two watersheds were generally not

encouraged to participate in planning and implementation. Hence, women were inconspicuous and their needs were totally ignored in these watersheds.

The G-N watershed project, implemented under similar conditions to the G-G one, addressed women's participation better because women's thrift and credit programmes are one of the main activities of GVS in the area and women's empowerment is on the organisation's main agenda. Hence, there was focus on women during planning and implementation, though it was not recognised as something worthwhile by the D/MDT. A senior SHG woman member was chosen as the chairperson of the WC. Participation of women was ensured in all meetings about the watershed. Equal wages were given to men and women. Women were given preference in labour works allocation. Some women were sent for training. Because of complicated procedures, not all groups could access revolving funds from DPAP. However, on the initiative of GVS women staff, these groups were linked with banks and support provided to livelihood improvement activities. Thus, to some extent the livelihood (economic) issue of women living in the watershed area was addressed, but other gender concerns were ignored due to lack of time, resources and enabling environment for focusing on the issue under DPAP.

Unlike the insignificant focus on women's empowerment in the MoRD watersheds, top priority was given to gender issues in the N-N watershed. At all levels, the Donors Consortium, RWDP Advisory Committee and Programme Office, conceptual inputs were available to Krushi. Constant guidance and support from all quarters to address gender related field level problems helped it to concentrate on the issue from the beginning. Monitoring indicators developed by all RWDP NGOs on women's empowerment provided guidance on different ways of addressing this issue and helped to check if the organisation was on the right track. A Woman Coordinator (WDT) was recruited specially for this purpose. She concentrated fully on the women of all the hamlets in the watershed. She lived in the watershed for two years and became one among them sharing the poor women's sorrows and joys. This helped her not only gain their confidence but also thoroughly understand the social, cultural and economic problems and needs of these women.

Box 1. Case study of Mrs. Kalavathamma

Mrs. Kalavathamma, is a 40 years old, illiterate, dalit woman from a poor farming family in Bogitivaripalle village in the N-N watershed. She is married and has two sons. The family possess 2 acres of dryland and 0.75 acres of wet land, but their predominant source of livelihood is working in the houses and fields of upper caste families.

In 1991, Krushi selected Bogitivaripalle village for initiating their activities and began mobilising dalit women. They faced stiff resistance from upper castes in the beginning, but staff visited persistently and organised a woman SHG. Impressed by Mrs. Kalavathamma's good comprehension, boldness and articulation of social issues, she was made leader of the group. She received several trainings on leadership, gender justice, exploitation and discrimination of dalits and women, and taken to see other relevant places. With these inputs, she started protesting against the discrimination and exploitation against dalits by upper castes and lack of government support/schemes in her village.

She began sensitising fellow women on this. Soon she was made a member of Central committee formed by Krushi for all their working villages and given opportunities to participate in Union level meetings of Sri Chaitanya Shakti (an outfit to fight against atrocities to women), which helped her comprehend issues well and gave recognition for her commitment to these issues.

She helped in accessing widow pensions, fought against police harassment and mediated several marital disputes by siding with the wives. Government officials were also impressed and recognised her concern for the poor, and extended support to her. When the watershed project was started, she took the initiative for organising poor families for it. Obviously, she was unanimously selected as Chair of the WC. Her contribution to implementing the watershed project and to address gender, equity, and participation was phenomenal. Throughout, she received the unstinting support of her husband.

Analysing Krushi's various interventions to address gender issues sheds light on the approaches that could help institutionalise women's participation in watershed management. A street-theatre group toured all six villages to bring awareness about the exploitation of dalits, especially women, as well as environmental degradation.

During PRA exercises, detailed household surveys were carried out to identify and highlight the specific problems of aged and single women. SHGs were formed for SC, ST & BC women and motivated to run thrift and credit activities. Instead of going to upper caste moneylenders, they could borrow from their own funds to start new income generating programmes. Access to collective funds (savings) has enhanced the status of women in the community. With the help of the WDT, the women groups have accessed benefits like ration cards, old-age pensions widows' pensions, flood relief and the national family benefit scheme. Land has also been allocated to 10 landless women, including 4 single women and 15 house sites.

Women and men participated in all trainings and exposures in equal numbers. Local female leadership was encouraged in a number of ways. Women Coordinator conducted separate meetings with women regularly to support the development of women's leadership. In these meetings discussed women's perception of their own skills and abilities, and they were encouraged to learn new skills, articulate their needs and try out new ideas. They were given detailed information of watershed activities, which enabled them to exert their influence with growing confidence. In all committees (WC, VC & Monitoring committee) women had equal representation, and they actively participated in decision making and project related transactions. An ignorant and illiterate woman from a dalit household, soon emerged as a strong woman leader (Box 1) under the guidance and facilitation of Krushi. She became Chairperson of WC and played a key role in the watershed project. Workshops were organised to sensitise men to women's needs and gender justice related issues. Initially men objected, claiming that women could not lift big boulders, but women argued that without mixing the small boulders the gaps could not be closed so both should work together, and finally the men were convinced.

An analysis of the number of hours worked by men and women and the range of tasks carried out by women convinced the men to allow them equal opportunities and wages. Separate organisations of women created a forum to discuss problems and solutions freely. Collective decisions were put to the committee meetings to push their agenda forward, such as demanding and receiving equal wages. They could also demand changes in discriminatory practices or decisions like payments to male members of families. The labour (work) groups were

Box 2. Case Study of a Single Woman

Ramakka is 35 and mother of two boys aged 12 and 9. She lives with her old parents because her husband died from an electric shock while irrigating upper caste farmers' land 8 years ago. She did not get compensation from the latter or from the government. Though she had 0.75 acres of encroached dryland, she eked out her family living working in OC farmer's fields and household work.

She joined in a SHG formed by Krushi and started participating in all meetings. Under the watershed project, when the focus was on single women, she was identified and included in the Pragati Co-operative Society. She was helped to get Rs. 10, 000 from a govt. scheme for her husband's unfortunate and untimely death. She also got Rs. 1, 000 from DWACRA, plus a ration card and widow pension. Stone clearance, bunding and plantation works were done on her land. Unlike other farmers, she was allowed to pay only a 25% contribution and the rest was borne by project. She is now able to cultivate her land and her living conditions have improved. She feels more secure now, as the whole group stands by her for any thing. She is now also able to send her second son, who was wandering, to school.

reorganised several times to ensure employment of women. Special efforts were made constantly to identify vulnerable women and provide them with work.

To ensure long term benefits to women, 23 single women (see Box 2) and 41 landless and very poor women were formed into a Pragati Co-operative Society. RF of Rs. 31, 000 were given to this group. They have begun brick making, small shops, trading in locally available tamarind, and leasing land for farming and sheep breeding.

Krusha helped women to meet their strategic needs (i.e., assist women in seeking gender justice). Two organisations were formed viz., the Vyavasaya (agricultural) Coolie Union and Stree Chaitanya Shakti of women, through which women's needs and demands were projected to the community and government. Cases handled by Stree Chaitanya Shakti included marital disputes, rape and cheating. They were active in confronting local elites. Identification of women with leadership potential and training, and constant moral support led to women placing demands for gender justice.

With its activist background, Krusha's strong commitment to bring about social change and the undaunted perseverance of the field team, backed by an enabling environment created by the Donors Consortium, Advisory Committee and Programme Officer of RWDP made it possible to work on organising and empowering women in the N-N watershed. In the case of the G-N watershed, the NGO had a strong inclination to organise women in watershed activities but lack of support (sufficient time and resources), appreciation and sensitivity on the part of PD/MDT for such initiatives did not motivate GVS to pursue women's agenda strongly. In the G-G watershed, women's issues were not considered by the WDT and MDT.

This analysis clearly indicates that besides the strong commitment and past experience of the implementing agency in dealing with women issues, an enabling environment and additional resources to employ women staff, plus constant encouragement with sensitivity to address gender issues, are all essential.

3.3 Financial issues

In all three watersheds financial management is moderate to good. But the processes involved are quite varied. In the G-G watershed, WC members have not played any role in decision-making about financial matters. Representatives of the PIA made all the payments directly to individual farmers after satisfactorily completing treatment works, though a developmental fund was paid into the community's bank account. The WC is not empowered and not aware of its roles and responsibilities for financial matters. A similar procedure was followed in the G-N watershed for collecting contributions but the office bearers and WC members played a more active role in finalising the budget estimates for structures and making payments to the concerned farmers.

In both these watersheds contracting to resource rich farmers has been introduced and institutionalised in the absence of an appropriate system developed by either DPAP or PIAs to give advances to the User Group representatives for building treatment structures. Since PIAs are ultimately responsible for the proper use of funds at the watershed level, they do not like to give advances from project funds. Inadequate empowerment of the WC made them also unwilling to take the responsibility for giving advances. Anyone who comes forward on behalf of a UG or himself has to put in his money initially and be reimbursed later by the WDT Engineer. In most cases this has prevented poorer farmers from creating structures and only those who could afford the initial investment benefited. However, there are instances of some farmers taking money on loan either from SHG or from a local moneylender for constructing structures.

Such mechanisms do not exist in the N-N watershed. The development fund is paid into the PIA account directly by the donor agency and the money is withdrawn for payments on the recommendation of the WC. After satisfactory completion of work, as judged by the quality monitoring committee, it is then discussed in the WC meeting and an application is given to PIA with details of the work and the amount to be paid.

Contributions are collected from users for individual and community oriented structures through a cost sharing approach, i.e., payment is made after deducting the user's share (see Box 3). This approach does not leave any scope for building a 'corpus' fund for future maintenance of the structures created. The donor provides funds only to share a part, which varies according to the component, of the total cost incurred. This approach encouraged active involvement of the user's family in planning and implementation of works to make use of the opportunity to take up desired treatment works on their lands. Much later, influenced by MoRD watersheds, a Watershed Development Fund (WDF—see below) was created and the farmers began contributing to it. This has changed the cost sharing ratios. For instance, for bunding work the user has to bear 60% of the total cost. An extra 10% of this is then put in the WDF account by the donor. slush

Box 3. Corpus building versus cost sharing approaches

In MoRD watersheds, a 'corpus building' approach was taken to create a fund for post project maintenance of treatment structures. The total project budget would be released by DPAP and contributions received in cash or kind, from the farmers taken up treatments, equal to the stipulated minimum (10% from BC & OC and 5% from ST & SC) would be put into a Watershed Development Fund (WDF). However, this approach was never an item for discussion with the community in the G-G watersheds. Likewise in the G-N watershed, though they tried to motivate the farmers in this regard initially, work achievement pressures by DPAP meant they could not pursue the matter. This new approach under a government programme needed more effort on attitudinal change and motivation among a community accustomed to a subsidised and benevolent approach, which is institutionalised deeply in the system. Due to lack of sufficient time and financial resources, The GVS, the NGO PIA, could not attempt such motivation, though they believed in it. Hence, the required 10% and 5% for private and common works was deducted respectively from those that got paid to carry out works and deposited in WDF.

In the N-N watershed a cost sharing approach was followed, i.e., funds released were matched only to the costs after deducting people's contributions. The farmers shared 50% of the total cost of private land works. Wherever the farmer engaged outside labour, the remaining amount (wages) would be borne by the farmer himself. However, in the case of common structures like gully checks the labour groups that worked paid the required 25% contribution. This deduction was felt to be fair as if these people had migrated elsewhere for work they would get higher wages but would have to pay for accommodation at the new place. Through this arrangement they were able to live in their own houses and are better off in the long run.

3.3.1 Use of the Revolving Fund (RF)

The purpose of the Revolving fund is to provide seed money to self-help groups to thrift and credit. In Chittoor district the revolving fund was not released to the PIA as per the watershed guidelines. It was centralised at DPAP level and released to the "mature" groups based on recommendations sent by the PIA. However, the records showed that the successive PDs had not

acted systematically to process the applications from the qualified groups. As a result, most of the mature groups did not receive the RF. This deprived the groups formed under watershed programme from using the RF.

In the G-G watershed, as there were no SHGs formed under the watershed project, this watershed was deprived of the RF totally. In the G-N watershed, a total of 14 SHGs existed, but only three groups got the opportunity to receive Rs. 10,000 each. Despite strong recommendations and persuasion by the PIA, the remaining four groups never got access to the RF. For those groups that did receive the RF, there were no instructions from DPAP on how the RF should be used. DPAP had never given serious thought to how the RF should be used, as envisaged in the guidelines, nor to developing new procedures for using the RF in a sustainable manner, beyond the life of the project.

In the N-N watershed, a RF of Rs. 30,000 was given to a group of single women and landless families to support their livelihoods. The six SHGs formed have accessed the bank loans and higher borrowings from the federation of SHGs.

3.3.2 Use of Watershed Development Fund (WDF)

The purpose of watershed development fund is to provide financial resources for maintenance of common structures in the post project period. In both the G-G and G-N watersheds, the contribution to put in WDF was collected from the farmers who built the structures by deducting from the payments made to them (rather than from the labour). In the G-G watersheds, most community members were not aware of the existence of such a fund. In fact, no-one was very sure how the WDF worked. The institutional arrangements to manage the WDF were not clear; so far the WDF money has not been used in either watershed.

This lack of clarity over the use of the WDF extended to the PD as well as to the PIA and CRD level. The fate of the WDF after the end of the watershed project is uncertain. An important mechanism to ensure sustainability of participatory watershed management programme is thus being grossly ignored by the district and state management agencies.

The N-N watershed did not have any WDF concept to start with, but this was later introduced (see above). It had been decided to revolve the WDF for repairing community-oriented structures, well deepening, seed purchase and IGP etc., on a loan basis to UGs or individual farmers. This would enable sustainable growth of the fund as well as availability of funds locally for the communities to meet livelihood development needs.

3.4 Management issues

Managerial mechanisms (as listed in the guidelines) such as application of PRA tools and techniques, demand-driven approach for preparation of action plan, decentralisation in technical sanctioning of action plan, elimination of contractorship for implementation of works and flexibility in modification of action plan during implementation phase have been implemented very well in the N-N watershed. PRA tools and techniques have been extensively used. The outputs were documented in a simple form for easy comprehension by community members. They were kept in the village and referred to frequently during planning and implementation. The resource map developed by the people during the PRA is used extensively. Topographical sheets and the departmental maps were never used. The locally prepared map helped the people to feel ownership of it and it was as a very useful tool for the WC and VC during meetings and

for monitoring and evaluation. A demand driven approach was followed. Coordinators and concerned users made joint field visits to identify the resource-related problems and an action plan was finally prepared incorporating the choice of options as well as their location in the field. Sanctioning of the works is totally decentralised. WC sanctioned the proposal after inspecting the site.

All works including WHS were implemented directly by concerned users or the UG without any contracting out of work. There was high flexibility during the implementation phase. In fact, in this watershed the action plan was not prepared early on; instead it evolved as the project progressed and community capacities were built. The budget was not stipulated in advance as in the MoRD watersheds. The budget allocation was also flexible depending on local needs.

In the G-N watershed the performance of managerial mechanisms was moderately good. WDT members initially carried out PRA exercises with a group of farmers. This helped the WDT to understand the watershed, status of resources and local problems, and also allowed the people who participated in the exercises to understand the features of the watershed project. But the output was hardly used for preparing the annual plan because DPAP's instructions were that the action plan was to be prepared following prescribed budget allocation components fixed by the PD. Thereafter, however, annual action plans have been submitted for approval incorporating the demands/requests from the users for drainage course and WHS structures, without revisiting the initial comprehensive plan. Thus there was flexibility during the implementation stage. Decentralisation in technical sanctioning worked well. The farmers' proposals were discussed in WC meetings and works costing up to Rs. 25,000 were sanctioned by the WDT on the spot. A nodal person from the UG implemented the works as a contractor.

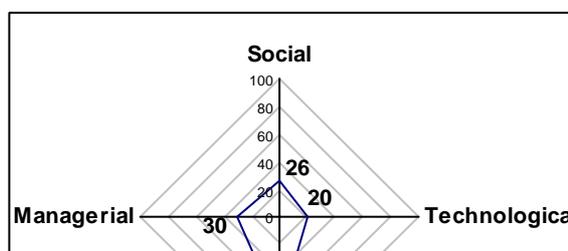
The performance of managerial mechanisms was poor in the G-G watershed. More than 60% of the mechanisms were not implemented. Inadequate specific attention was paid to using PRA tools. However, in the name of PRA a transect walk was undertaken by WDT members along with some villagers to identify field activities in their respective faculties. Initially the WDT prepared a technical plan and submitted it to the DPAP office. Mostly the WDT (sometimes the MDT) had the major say in choosing technological options and their location, though the requests of the farmers also entertained in some cases.

The MDT officer in charge of the PIA (on behalf of PD) prevailed upon WDT and sanctioned the works. The decentralised mechanism of up to Rs. 25,000 did not work, and the quality control, approvals for works and payments rested with MDT (senior Officer) in conformity with bureaucratic hierarchies.

3.5 Summary of sample watersheds' performance

The overall performance of different mechanisms across the three watersheds is analysed with the help of web diagrams below (see appendix C for all mechanisms). As shown in Figure 7, in the G-G watershed technological mechanisms have received 70 points out of total 100 (the methodology is same as that explained in section 3.15). The direct funding and contributory approach mechanisms occurred, but the processes with which they were achieved were not in line with a participatory approach. The technological mechanisms are the weakest, receiving only 20 points, followed by 26 and 30 points for social and managerial mechanisms respectively.

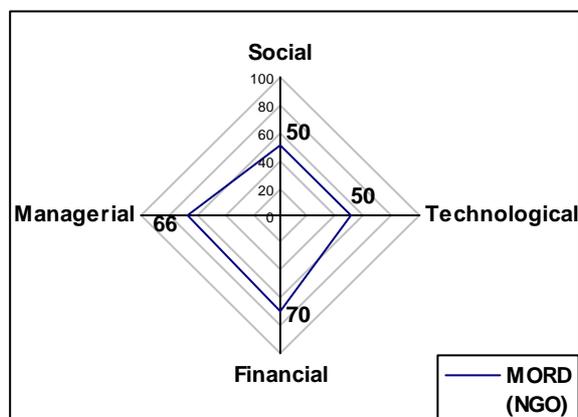
Fig. 7: Analysis of mechanisms in G-G watershed



In the G-N watershed, all the mechanisms have received more than 50 points, with financial mechanisms securing 70 points, the highest of all three watersheds (Figure 8). Though this financial score is on par with the G-G watershed, in the G-N watershed the community was more involved with financial matters. Approval of estimates and method of making payments was done in WC meetings, which has increased transparency and accountability on the part of WC members for implications of financial transactions.

Implementation of demand driven approach, decentralisation in technical sanctioning and flexibility in modification of action during implementation phase earned this project 66 points for managerial mechanisms. Including indigenous technologies in technical plans and respecting local knowledge and skills in constructing many *Vakira* (farm ponds) helped it to secure 50 points, followed by 50 points for social mechanisms.

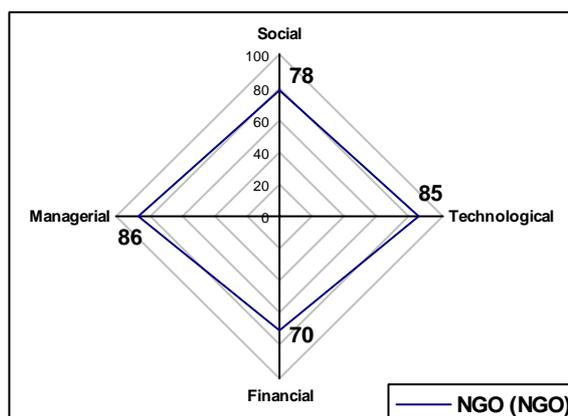
Fig. 8: Analysis of mechanisms in G-N watershed



Though the RWD Programme did not have written guidelines, when we compare performance against the MoRD guidelines, this watershed project does best (Figure 9). The managerial mechanisms have received the highest score, which bodes well for the sustainability of the social structures created. The high score for social mechanisms reflects the significant efforts put in by the PIA for community mobilisation. Diverting major investment to indigenous technologies and accommodating multiple technological options earned 85 points, because it indicates the active participation of the community. The points fell to 70 for financial mechanisms because the RWD Programme had no system of direct funding to community based organisations in view of FCRA rules.⁹

* The Foreign Currency Regulation Act (FCRA) of central Home Ministry does not permit transfer of foreign funds into community group accounts directly, which may not have FCRA.

Fig. 9: Analysis of mechanisms in N-N watershed



However, the WC indirectly handled development funds under close supervision and obtained authorisation for their use.

Table 3 provides a summary comparison of the GO and NGO-funded programmes.

Table 3. Comparison of MoRD & RWDP programmes

RWDP	DPAP
<ul style="list-style-type: none"> ▪ The programme has strategies stated 	<ul style="list-style-type: none"> ▪ There are written guidelines
<ul style="list-style-type: none"> ▪ Provides direction and allows local innovation 	<ul style="list-style-type: none"> ▪ Guidelines treated as sacrosanct but in practice more abused than adhered to
<ul style="list-style-type: none"> ▪ Systematic capacity-building to NGO and Coordinators (WDT) 	<ul style="list-style-type: none"> ▪ Though guidelines do mention about capacity building but in practice not given importance
<ul style="list-style-type: none"> ▪ Capacity-building in social, technical and cultural activities 	<ul style="list-style-type: none"> ▪ Greatest emphasis on technical aspects
<ul style="list-style-type: none"> ▪ bottom-up approach to community mobilisation 	<ul style="list-style-type: none"> ▪ No such preference
<ul style="list-style-type: none"> ▪ Thorough exposure and training to groups and the community 	<ul style="list-style-type: none"> ▪ Only office bearers received some training and had opportunities to visit other places
<ul style="list-style-type: none"> ▪ The action plan is open and evolving 	<ul style="list-style-type: none"> ▪ Action plan inflexible and planning attempted for entire stipulated budget
<ul style="list-style-type: none"> ▪ The activities are diverse 	<ul style="list-style-type: none"> ▪ Set menu for all watersheds
<ul style="list-style-type: none"> ▪ Implementation gradual & at farmers' pace 	<ul style="list-style-type: none"> ▪ Large scale & physical target oriented
<ul style="list-style-type: none"> ▪ Total bottom-up 	<ul style="list-style-type: none"> ▪ Still top-down in many ways
<ul style="list-style-type: none"> ▪ Flexibility in works execution 	<ul style="list-style-type: none"> ▪ Stick to specifications & norms
<ul style="list-style-type: none"> ▪ Close rapport with all sections and WDT totally mixed with community 	<ul style="list-style-type: none"> ▪ Relations are works oriented & turn of WDT members
<ul style="list-style-type: none"> ▪ PIA given total freedom. Now and then guidance & suggestions on approaches. 	<ul style="list-style-type: none"> ▪ More interference by MDT. Procedures imposed by DPAP
<ul style="list-style-type: none"> ▪ More integrated. WSD is one element of the agenda 	<ul style="list-style-type: none"> ▪ WSD is the main agenda
<ul style="list-style-type: none"> ▪ Convergence of services 	<ul style="list-style-type: none"> ▪ No linkages
<ul style="list-style-type: none"> ▪ Six monthly review where all partners share each other's activities and get mutual support & directions for filed problems 	<ul style="list-style-type: none"> ▪ Monthly review. One-day affair for submission of physical & financial progress formats. Conducted by PD-DPAP. Review is one way.

⁹ The Foreign Currency Regulation Act (FCRA) of the central Home Ministry does not permit transfer of foreign funds into community group accounts directly, which may not have FCRA.

4. Institutional and stakeholder analysis

It is essential to know the functioning of village based as well as external (implementing and management) institutions to understand the opportunities and constraints at various levels to institutionalise participatory approaches. I assessed the type and extent of the roles played by primary (village groups) and secondary (external agencies) stakeholders in the development of the three sample watersheds studied.

4.1 Analysis of community based organisations

4.1.1 Self-Help Groups

In the G-G watershed, only 30% of the 367 families were organised into SHGs. However, these were formed by Mandal officials before the watershed project began and had nothing to do with the watershed programme.

In G-N watershed, about 96% of the families were organised into SHGs, out of the total 146 families living in watershed area. Seven of these were women's SHGs (see section 3.2.2 for more information on women's groups). Of the 140 families organised into SHGs, 19% were landless, 52% were landowners and 29% were land and water owners. The groups had 84% of their own savings out of the total amount of Rs. 3.2 lakhs and the rest came from the banks and watershed programme. The SHGs were formed in G-N watershed in the second year after the formation of watershed committee. The PIA/WDT were not aware of the necessity of SHG formation at the beginning. Women staff from GVS supervised the groups, who were trained and actively involved in thrift and credit management. The groups had already taken bank loans by the third year and repayment was being made in time. However, these groups had not played any significant role in the watershed programme, except for working as labour. One group created a plant nursery for planting seedlings on common land.

In the N-N watershed, about 38% of the women were organised into SHGs covering poor families. After developing good rapport with the community, Krushi formed one credit group for women, initially for SC and BC families. Gradually eight groups were formed, out of which two groups men and youth and the rest were of women groups. Of the 108 families organised under all SHGs, 15% were landless, 70% landowners and 14% land and water owners. All these groups were mature, linked with the bank and had about 88% of their own savings out of the total amount of Rs. 1.27 lakhs. Besides these eight SHGs, one more group was formed which included 23 single women and 41 landless, which was given Rs. 30,000 as a revolving fund. The single women did not have to pay interest on these loans. All these groups were made members of Mutually Aided Cooperative Societies (MACS), which enhanced opportunities for taking up economic activities. Apart from SHGs, the community members were represented in other Mandal people's institutions formed by the NGO Krushi: Mandal Agricultural Labour Union, *Stree Chaitanya Shakti* (to fight atrocities against women), Small and Marginal Farmers Co-operative Societies and Tank Management Committees.

4.1.2 User Groups

Unlike the N-N watershed, in the MoRD watersheds user groups were not organised exactly along the lines envisaged in the guidelines. In the G-G watershed, individual farmers carried out the works and though other farmers would also benefit from the structures, no interaction was facilitated among them and they were not motivated for group action during planning and implementation. In the G-N watershed the 'user group' farmers were involved to some extent. In the N-N watershed, on the other hand, two kinds of UGs were formed: activity groups and structure based groups. These groups were active and works were carried out with the

help of labour groups consisting of men and women. Groups were formed around specific activities, like the well-deepening group, silt application group, low cost water-harvesting structures group, NADEP compost pit groups. This means that all the farmers executing similar activities were formed into a group. Structure based groups were formed for percolation tanks. These UG groups met regularly to discuss maintenance of works, other related issues and future activities.

4.1.3 Watershed Committee and Watershed Association

All the villages in the three watersheds were represented adequately in WCs, but caste composition and male-female ratio varies quite considerably between watersheds. In the G-G watershed, only the WC was operational and dominated by the local strong BC community. One person was chosen as President of the Watershed Association, but nobody was aware of the WA's existence and its role. In Bisanatham, 87% of WC members were male. In the beginning there was no female representation. Two women were included much later in response to the PD's instructions as suggested by the Chief Minister. The occupational profile of WC members included 71% agriculturists (medium to small farmers), 22% agricultural labour and 7% skilled. Most of the members belonged to the ruling political party.

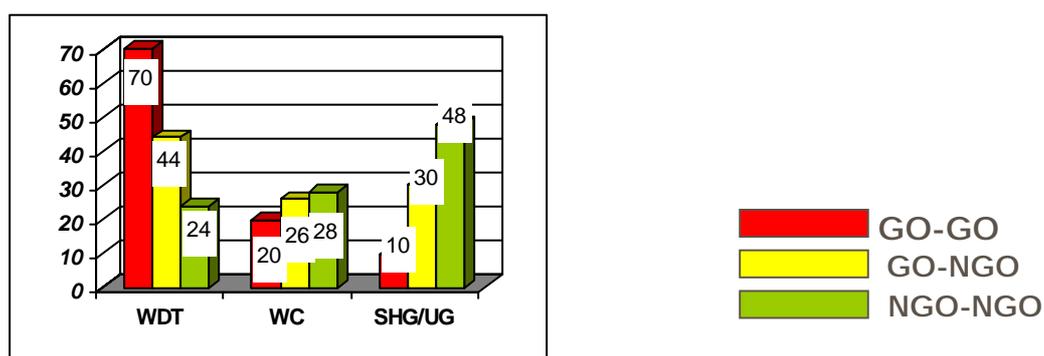
The formation of the WC and WA was more democratic in the G-N watershed. A Grama Sabha was organised at Nelapalli village. Local public announcement systems and pamphlets were used to let people know about the meeting. About 80 people attended and they were told about the guidelines, roles and responsibilities of office bearers again. The selection of President and Chairperson (a woman) were unanimous. Both of them selected the Secretary. Then other members were selected from the gathering, giving representation to all the villages located in the watershed area. Since it was made very clear that the farmers should implement all the works themselves, there was no competition to become WC members. There was more even caste representation on the WC, and of the total 14 members (including the WDT member), 71% were men and 29% women. The Chairperson was a woman, selected from a SHG in the watershed. Most of the WC and WA meetings were held together. Hence, the WA was active to some extent in G-N watershed. The occupational profile of WC members included 46% medium farmers, 46% small farmers and 8% landless agricultural labour. Most of the members (61%) belonged to the main opposition political party and only 39% were affiliated to the ruling political party.

Unlike the DPAP watersheds, in the N-N watershed village committees (VCs) were initially formed comprising six members each: three men and three women for each village (hamlet). Later in a general meeting a central watershed committee was formed with 12 members: six men and six women (two from each VC). A dalit woman was elected as the Chairperson, who was groomed with leadership qualities with special attention by the WDT (see Box 1). Later a president was nominated and a Watershed Association registered. The WC's caste composition was 25% SC, 33% BC, 16% ST, 8% OC and 17% minority community (Muslim). Most of the members (91%) worked as agricultural labourers, though they had an average of 0.5 to 2.5 acres of dryland. Nearly 60% of the members were drawn from SHGs and UGs, and 42% of the members were represented in other village institutions too. There was equal (50% each) representation from the ruling and the opposition parties.

4.1.4 Summary

The type and extent of roles played by the WDT, WC and SHG/UG vary in the planning and implementation stages in each watershed as shown in Figures 10 and 11.

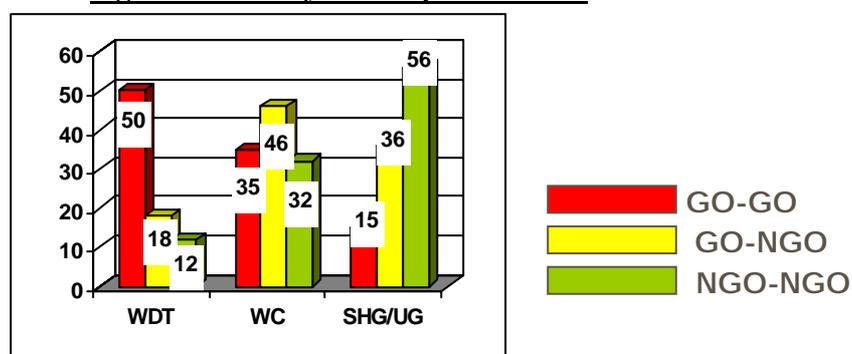
Fig. 10: Role analysis in planning



In the G-G watershed, the WDT dominated throughout the planning, along with the MDT member. From the second year onwards the WC's role was increased to the extent of helping the WDT decide the number of items under WHS component based on the requests from some enlightened farmers or of their own. The WDT did not play any role in facilitating group action and conflict resolution for community oriented works. The WDT-ENG played a major role in implementing watershed components (Figure 11). He scrutinised and approved farmers' proposals—WC members were only consulted when he needed any clarification. In some cases he identified the technology and location of structures like CDs, and supervised the construction works directly with the help of Chairman of WC. Most of the accounts and records were maintained by WDT. WC members could not collect contributions from users. The WDT collected them from nodal person at the time of making payments. The office bearers of WC, apart from supervising the construction of structures, helped the WDT-ENG with measurements and sorting out field problems. Some WC members built the structures themselves, using their position and close rapport with the WDT. Since UGs did not exist, their role was lacking in the entire process. Only the Chairperson, and to some extent President, Volunteer and WDT members, knew the details of physical and financial progress.

As shown in Figure 10, in the G-N watershed the role of WDT was confined in the planning stage to only a facilitating role. The WC shared the major part of responsibility for facilitating group action, collection and processing of proposals from farmers and resolving conflicts. The nodal person of each UG took the responsibility to get the consent of UG members, sort out conflicting interests and prepare a rough estimate of the structure using traditional wisdom.

Fig.11: Role analysis in implementation



The WDT's role was also reduced during implementation (Figure 11) because the WC accepted farmers' proposals/applications, processed and approved them. UGs were recognised around the structures. The nodal farmer did the construction, but with good interaction by neighbouring

farmers. They participated in endorsing the allocation of construction responsibility and in some cases visited the construction sites. SHG members worked as labour in the works, but they did not play any role in implementation.

In the N-N watershed, the SHGs/UGs played a more major role in planning than the WC and WDT in identifying the problems and suitable technologies for development (Figure 10). The final choice of technology and location was made by the UGs and most technologies chosen were indigenous (see Appendix A). Concerned farmers played a major role in executing individual works (Figure 11). Labour groups built the community-oriented structures along with members of the two kinds of UG.

4.2 Analysis of implementing agencies

The differences in the backgrounds, composition and experiences of the PIAs had a major bearing on the participatory processes in the sample watersheds (Table 4). In this section, I analyse how organisational factors affect the institutionalising of participation.

4.2.1. The G-G Project Implementing Agency: DPAP

As stated already elsewhere, for this watershed project the PD-DPAP was the PIA on paper and the MDT acted as PIA. WDT officers were deputed from the Forest, Agriculture and Engineering line departments. None of them had worked in a watershed project before. The profiling of WDT reveals that there was a high turnover of staff. Some were transferred to other districts and a few were repatriated to parent departments. On average, each officer served as a WDT member for about one to three years. These frequent transfers created severe communication gaps, undermined rapport building with communities and hindered works execution. There was never a social mobiliser in the team.

These officials largely received no proper induction into participatory watershed management. They had nowhere to turn for guidance, clarifying doubts and seeking innovations. Only one officer got some training in soil and water conservation measures (2 months) and watershed management (1 month), both organised by state government, plus water harvesting structures (3 days) at APARD (Andhra Pradesh Academy of Rural Development) and watershed management (2 days) at MANAGE, a Ministry of Agriculture organisation. He worked longer than the others and played a more active role. But he felt that he was not allowed to use his skills and knowledge in implementing the watershed programmes. The strong hierarchical culture of government departments was a major obstacle, with the Multi-Disciplinary Team (MDT) interfering at all stages. Departmental hierarchies played a prominent role in their relationship. They never held discussions to shape decisions or develop new ideas: the MDT simply issued instructions for the officer to obey as a 'subordinate'. Discussions with a group of WDT and MDT officials revealed that overall there was no change in their attitudes to field approaches and people-centred development. They believed in more control, closed decision-making and involvement of few for the 'welfare' of all.

Unlike the NGO PIAs, the MDT had no financial freedom and no separate PIA bank account. The expenditure related to administration, training and community organisation were met directly from DPAP funds. Similarly, the WDT did not have the flexibility to cover field expenses. Every expense (even minor stationery) needed to obtain prior 'sanction' and money was reimbursed after submission of 'statement with bills'. The PD approved all the financial transactions (advances and expenditure). The WDT members were given Rs. 1200 per month for fuel expenses and one jeep was provided to three members for field travel, but this was shared

with the DPAP office for other purposes too. In effect, they mostly used their own bikes for travel. They were being paid Rs. 70/day, which they felt was too low for the kind of work they were expected to do. There were no incentives like increments, rewards etc., for better performance.

4.2.2 The G-N Project Implementing Agency: GVS

GVS already had experience of implementing various natural resource development activities including conservation of soil, water and other natural resources for cost effectiveness, improved productivity and sustainable land use through watershed development. Recognising this experience and reputation of the organisation in the area, in 1995 the PD invited the organisation to develop four watersheds. This gradually rose to 18 watersheds. From the beginning the Chief Functionary (CF) closely supervised the programme. The two senior staff, who had worked in donor supported watershed projects before, and who had technical and social sciences backgrounds, became the WDT. Other members were drawn from the open market. The WDT liaised closely with the CF and got constant feedback, direction and guidance on project matters from him. Close regular interaction left no room for hierarchies and flexibility was allowed in planning individual activities.

The WDT members were trained in many aspects of watershed management. In addition to DPAP arranged trainings, they were given wide exposure through different programmes accessed by GVS from other contacts and sources. However, WDT staff turnover was also quite high, mainly for new entrants and especially those with good qualifications. The reasons were low salaries and inability to cope with fieldwork in remote rural villages. They were offered Rs. 2000 as a salary and Rs. 200-300 towards conveyance allowance. The senior staff provided strong continued support, and part of their salaries was met from other projects in order to keep them with the organisation. Each WDT member looked after 2-4 watersheds, drawing support now and then from other WDT members. The WDT-ENG was the most important and sought after person in the programme. He was the busiest WDT member and always-in demand as watershed technologies included mostly gully control works and WHS.

Table 4. Comparison of GO & NGO PIA/WDT

GO PIA/WDT	NGO PIA/WDT
1. PIAs have no freedom to share or react to the instructions given by PD from time to time since his open sharing might invite disciplinary action or taken as disobeying orders of superiors.	PIAs can express their views on the practicability of orders/instructions and give their feedback/suggestions since they are not part of a government structure.
2. The WDT, who are government officials, never try to be innovative (due to the departmental training over the years) or question or critically look at the instructions by PIA head or representative. There is no regular internal sharing among the WDT and the PIA (PD or MDT)	The WDT closely moves with the PIA. The PIA also visits the field and provides moral support & encouragement. It inspires and provides enabling environment for the staff to be innovative. Regular back up support is available by giving timely guidance.
3. The PIA/WDT regard this work as part of their routine government service. There is no recognition or any special incentives for exemplary work. Facilities are poor. Top-level bureaucracy is not sensitive to their needs and the changed roles & responsibilities. Routine	Genuine NGO-PIAs wants to do good work to attract other donors or get some more watersheds/programmes from the government. So they regularly review the WDT's work, concentrate on their capacity building & work output. As far as possible they provide facilities

government rules are only applicable for travel and dearness allowances, which may not be sufficient under new approach of implementation.	like vehicles, and pick up incidental expenses etc.
4. WDT officials, who are used to having 2 or 3 supporting staff are suddenly left with alone to do everything by themselves.	NGOs, if working in their operational villages, will use staff of other programmes at times of need. Sometimes consultants may be engaged. The WDT are prepared to work under rural conditions.
5. PIA/WDT officials are not trained to work under participatory approach. May not be sensitive to socio-economic problems of rural vulnerable sections.	Most of the staff are trained and experienced in implementing rural development projects, though levels of commitment vary from NGO to NGO. Exposed to rural psyche & village dynamics and possess organisational skills.
6. PIA/WDT officials get little opportunity to acquire new concepts or ideas (gender, equity etc.). Few to attend trainings even if interested. Departmental rules like seniority, financial or procedural hurdles do not allow them build their capacities.	Constantly exposed to new concepts and concerns. Opportunities aplenty for trainings and workshop. Free to attend national and international trainings mobilising donors' funds.

The PIA funds for community organisation (CO), training and administration were not released to the PIA as envisaged in the guidelines in percentages annually. Only the administration funds were released to the PIA, although irregularly and after much persuasion. The CO and training funds were centralised at DPAP, which hindered the PIA/WDT from organising need-based community mobilisation and capacity-building events in watershed villages in time.

There was no provision for vehicles in the administration budget. Dependence on public transport would not help in making frequent and timely visits to remote villages. Hence, GVS mobilised some funds from other sources for purchasing two wheelers. Though CF closely supervised and gave lots of time to the programme, there was no honorarium/salary earmarked for him.

4.2.3 The N-N Project Implementing Agency: Krushi

Under RWDP, Krushi implemented one watershed project. The husband and wife team, who ran Krushi, were very closely participated and monitored the watershed project development. The WDT consisted of two members, one man and one woman, known as coordinators. They were given systematic training in cultural, technical and social aspects. They stayed in the watershed villages and developed very intimate relationships with the communities. A group of young people from the watershed villages was also trained in various aspects of watershed development. These volunteers played a crucial role in supervising the works, making payments, resolving conflicts in the village, and providing strong support to the WDT. At times the Krushi staff were also involved, especially in the beginning for community mobilisation and planning. The PIA (Krushi) handled both the project and management budgets. The relationship with the project management agency was cordial and very supportive. There were never any budget constraints. Project funds were flexible and released in response to local needs within the programme conditions.

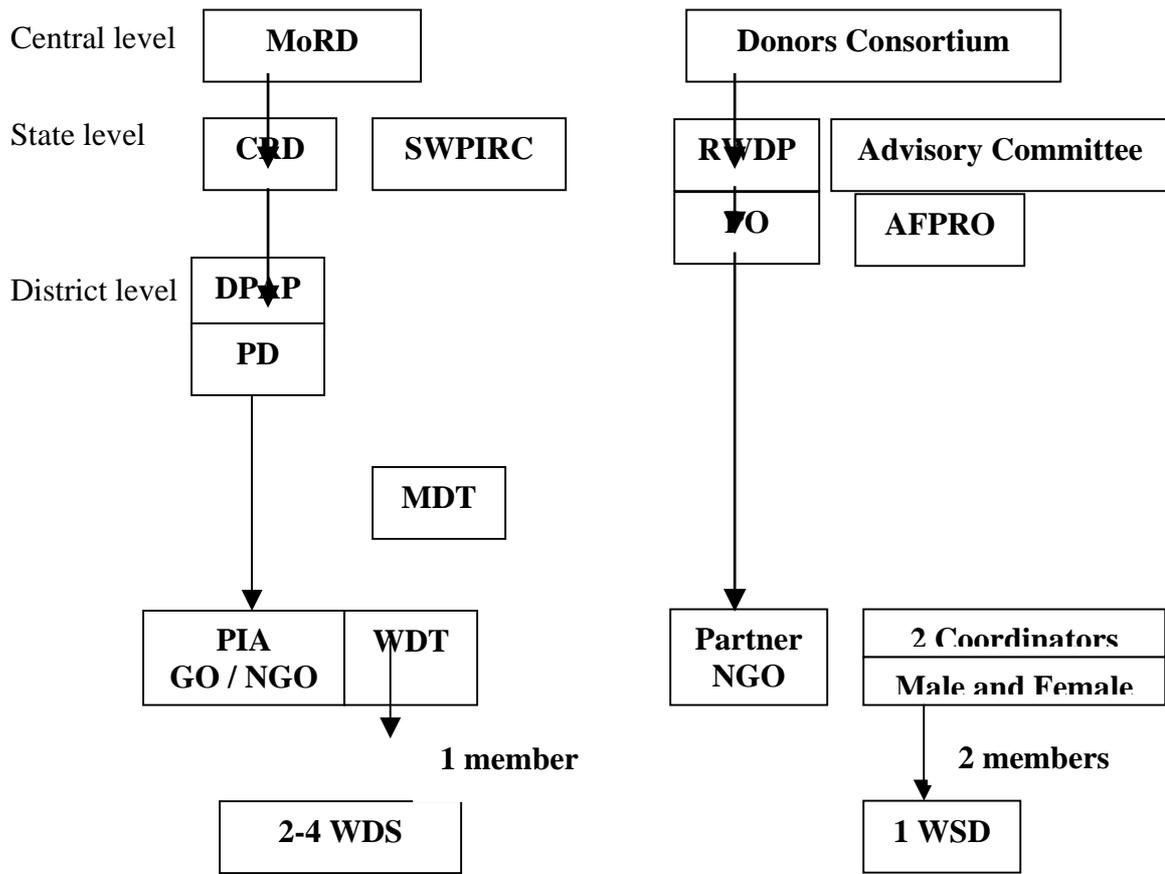
4.2.4 Summary

In summary, the organisational background and approaches of the PIAs reflected in their approach to implementing the watershed projects and addressing concerns like participatory approach, equity and gender. Unlike GVS, Krushi had only one watershed. This enabled the latter to fully focus their human resources and play its role effectively in facilitating participatory watershed works. And in the G-N and N-N watersheds, the Chief Functionaries of GVS and Krushi were actively involved in the entire process. Initially they played a major role in watershed area identification, data collection, awareness building and organising the communities. They trained the WDT members on the job in various aspects of watershed development and gave priority to their capacity-building. They were constantly available and accessible to the WDT to sort out field problems and provided necessary backstopping support. They visited the watersheds regularly and closely monitored progress. They participated in WA and WC meetings and motivated them to implement projects in the right direction. This is in stark contrast to the role played by the DPAP PIA (Table 4).

4.3 Project management agencies

There are two categories of external organisations viz., the management agencies at the Central, State and District levels to provide policy support, enabling environment to the down below and handle the financial and coordination responsibilities (Flow chart 1). Comparison and critical analysis of institutional arrangements is very essential to understand their performance in providing intended facilitating support and enabling environment to support participatory approaches in the watersheds.

Fig. 12: Comparison of Institutional Arrangements in MoRD & RWDP



4.3.1 DPAP

Project Director

The Project Director (PD) was vested with full powers and responsibilities to co-ordinate the watershed development programme in this district. Thus his role was crucial, as he/she is the main centre of power. The selection of PIAs, allotment of watersheds, funds release and review of physical and financial progresses are some of the PD's important roles. The decisions/instructions issued by PD orally and in written form (see Appendix B) influenced the implementation process in watersheds. At the district level he/she reported to the District Collector,¹⁰ and worked in close contact and with guidance from The Commissioner, CRD at Hyderabad. The Collector ratified all the programme decisions, especially the financial transactions (releases to PIAs). In Chittoor district over the past five years there have been four PDs.

However, there was no proper criterion for identifying suitable officers for the post of PD. They did not have any orientation/trainings after induction into DPAP to equip them to

¹⁰ In Chittoor district, the Collectors were very influential, as we have seen in the case of bunding. Another Collector diverted watershed funds to other programmes leading to delays in releases to PIAs, which affected field works. The Collectors were not given any orientation on the spirit and approach of participatory watershed development. Ignorance of the bottom up approach and the objectives envisaged made them insensitive to this special programme.

facilitate the participatory watershed programme. Thus their performance depended entirely on the personality of the individual in the post, with great implications for the programme (see Table 5). Instead of developing appropriate systems to facilitate participatory processes at the field level, they preferred more controlling procedures, which became counter productive and stifled people's participation. The classic example is the stopping of bunding work totally. Empowering local institutions to monitor the works execution, as was done in case of the N-N watershed, would have arrested malpractices and encouraged participation of small and marginal farmers in a big way.

There was no support structure to guide or advise, either in the district or at state level. The District Watershed Advisory Committee (DWAC), which was envisaged in the guidelines to perform such an advisory function to the PD, was totally absent in Chittoor district as no PD took it upon themselves to convene such a body with line department heads.

Table 5: Changing PDs: changing approaches/innovations

Tenure of PD	Approaches & changes introduced
1996 – 1997	<ul style="list-style-type: none"> - Identification of DPAP mandals and watersheds - PIA selection - Allotment of I batch of EAS & DPAP watersheds to GO & NGO PIAs - Trainings & exposures to WDT - Ruling party favoured - Corruption high - Project reviews randomly
1997 – 1998	<ul style="list-style-type: none"> - Watershed Field Manual released for distribution - Fast releases of project funds - More field visits for inspection - Fixed uniform rates to physical works introduced - MDTs more influence in decision making - Project reviews randomly - Bunding works stopped following The Collector's instruction
1998 - 2000	<ul style="list-style-type: none"> - Greater concentration on capacity-building for office bearers of WC/WA, WDT: once every 3 months at block level - More training manuals on different subjects produced - Skills training to young people (one per watershed) & supply of implements - Introduced Grama Sabha once in a month. WC meetings twice in a month - Introduced Praja (people's) Estimate for works - Close monitoring by giving instructions for participatory approach - Computerised formats and reports - Fixed project review meetings were introduced to WDT - More accessible to people on telephone - More transparency insisted upon. Emphasis on social audit boards - Flexibility in funds allocation, and using interest on watershed funds - Funds release easily - Collector meetings with PIAs - More importance to other govt. programmes - Agricultural loans to watershed farmers during Kharif season
2000 – till now	<ul style="list-style-type: none"> - Regular PIAs meetings introduced

	<ul style="list-style-type: none"> - Women SHGs allowed to take up physical works - Asset registers introduced - Water level measurements in selected wells for impact monitoring introduced - Sericulture and bio-gas promoted - Introduced compulsory regular checking of works by MDT - Identification cards issued to office bearers
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Source: Based on feedback from PIAs/WDTs and village institutions in the field

The PD's office had very poor data management systems and PIAs were often asked for the same data repeatedly. New PDs would invariably find it difficult to get a clear picture of DPAP funds and spent most of their time calculating the correct figures, as any misappropriation in the previous PD's tenure would also fall on the head of current PD, thanks to institutionalised bureaucratic procedures. It was reported that there were no proper accounts for certain expenditures.

MDT

In Chittoor district there were five MDTs. Each MDT should support 50 watersheds. Officers from the Agriculture, Forest and Engineering line departments were deputed into MDT. Interestingly, there were no criteria for identifying suitable candidates based on previous watershed experience, track record, willingness to work with people etc. Therefore, their attitudes and working culture did not change and their bureaucratic approach was quite evident in all transactions. For some corrupt officials, MDT was a lucrative post and they remained there by using their clout. As for the PD, there was no proper induction process for MDT members. Hence, there was severe lack of role clarity among MDT members. All MDTs contained many vacancies, reportedly because of lack of funds. The government created new PD and MDT institutional structures for effective implementation of watersheds in 1995, but additional funds were not allocated. As a result, 5% of PIA funds per watershed were deducted and put towards the establishment costs of DPAP. The MDTs were decentralised by placing them in different parts of the district. But they had no proper office and supporting staff. Hence, each MDT member was handling 30 to 40 watersheds.

Departmental training and working culture mainly influenced the MDT's approach. In our discussions with MDTs we found that they unclear about their roles. Present roles mainly include inspecting physical works; scrutinising estimates and submitting feasibility reports to PD; recommending releases by submitting utilisation certificates obtained from PIAs; and organising trainings in their operational area as and when PD instructs. They were not convinced of the merits of a participatory approach because of lack of systematic orientation and training to change their attitudes and behaviour. As a result, they were always suspicious of actors below them. Most of the time individual faculty biases were seen in promoting certain components in watershed works. They ignored the process and concentrated on physical achievements. There was no change in the way they dealt with communities. In effect, they played more of a policing role than a supportive role.

4.3.2 RWDP

RWDP is funded by four agencies: OXFAM, ASW, Christian Aid and Bread for the World. OXFAM and ASW play a more active role in the day-to-day implementation of the

project since they are located in Hyderabad, but the other European donors are also fully involved in policy formulation and review.

Programme Office

The RWDP provides support to six watersheds (each implemented by a different NGO) located in different districts of the Rayalaseema region. The RWDP Programme Office is housed in the Centre for World Solidarity (CWS), one of the Donor Consortium members of RWDP. A full-time Programme Officer, an agriculture engineering graduate with a lot of field experience, coordinates the watershed programme. He is supported by a Joint Director from CWS who gives about 75 days a year. This core team visits each watershed once every two months and acts as a link between RWD Advisory Committee (see below) and the project partners. It provides support to the six watershed PIAs on capacity-building (trainings, exposures and review meetings), data collection and documentation, community organisation, guidance on technical aspects, project planning and monitoring. It also carries out day-to-day administration, correspondence and any other responsibility entrusted to it by RWDAC. The Administrative Officer of OXFAM helps the core team to monitor cash flows and financial reporting. A financial consultant regularly visits the watersheds to provide guidance on accounting systems and ensures that adequate financial management systems are in place.

Rayalaseema Watershed Development Programme Advisory Committee

Unlike SWPIRC¹¹ and DWAC of the MoRD watersheds, the RWD PAC played a very conspicuous and important role in developing and providing proper direction to the programme. RWDAC plays a key policy-making and supervisory role. It meets four times a year and comprises a Chairperson and members.¹² A finance committee, a sub-committee on non-pesticidal management, the core team and the project partners also participate in RWDAC. The members of RWDAC provide inputs to the programme on women's empowerment, planning and management skills and developing a system of financial management practices for RWDP. Other functions include:

- financial approvals of the project
- reviewing progress
- providing overall direction to project implementation
- participating in trainings and partners review meetings
- policy influence and advocacy
- guiding programme matters (like equal wages to men and women, reducing people's contribution to a particular group etc.)
- resource mobilisation
- communicating to donors about project progress, changes et
- providing appropriate guidance on field issues
- appointment and review of consultants

¹¹ Like DWAC, the State Watershed Programme Implementation and Review Committee (SWPIRC) has not played any visible role, though the guidelines visualised an important role for it in monitoring, reviewing and evaluating of watershed development programme in the state.

¹² The Regional Representative of OXFAM; the Project Officer of Bread for the World; the Coordinator of AFPRO FU-IV; the Coordinator, Training of Trainers (ToTs) from ICAR AP Office; the Agricultural Consultant, ASW; one project officer each from ASW (Environment) and OXFAM; and two people nominated by Christian Aid and Bread for the World.

- midterm and final evaluation of the programme.

Thus Krushi has a strong supporting mechanism at management agency level. The PIAs of the MoRD-funded programmes had no such supportive and facilitating environment.

The above critical comparison of institutional arrangements in MoRD with RWD programmes shows that adequate attention was paid on this aspect while designing them for creating an enabling external environment to scale up participatory WSM projects. But however there is a huge gap in terms of their effective functioning in actual sense to promote new social groups through participatory approaches and processes on the ground. Comparatively, the vertical structure of RWDP is much simpler and enabling to the actors below, although the scale of handling watersheds is negligible compared to the MoRD programme, which is very vast and handling huge number of watersheds on a massive scale. However, the actors taken into the former are from the open markets (development sector) with strong pro-poor bent of mind. They do not have institutionalised bureaucratic attitudes and behaviours unlike MoRD where the positions are filled with officers taken on deputation from the administrative services and the line departments. Due to the massive nature of the programme, the vertical structure is complicated and the power is vested in several intermediary hands, which often gives a scope for misuse and make it counter productive to the participatory approach that the structure is expected to promote on a large scale.

Involvement of more institutions and the actors in MoRD has only complicated the relationships among them and at times become hostile to the purpose for which they are created. In the process some have become ineffective or totally defunct ex: DWAC and SWPIRC, and they still remain hanging in a rudimentary form in the existing institutional arrangements. It can be noted that the downward accountability is yet to be realised and still the top down approach is being promoted by default all through the massive organisational structure from the Centre to the watershed village level.

4.4 State level organisations

Several institutions and individuals have influenced the participatory watershed development programme at the state level.

4.4.1 Commissionerate of Rural Development (CRD)

Among its many roles, CRD also acted as the nodal agency for the MoRD-sponsored watershed programme at the state level. On behalf of the state government, it liaises with MoRD for funds, submission of utilisation certificates and progress reports and maintains close contact for coordinating the watershed programme. Other important responsibilities include releasing funds to districts based on number of watersheds sanctioned, periodic monitoring of physical and financial progress, capacity-building of PMA, appointing/deputing PDs and MDT, and conducting evaluation studies to assess the impact and identify field constraints for procedural/policy modification etc..

CRD made some innovations in the programme, for example creating DPAP as a separate wing at the district level (see Figure 12), separate from District Rural Development Agency (DRDA). Creating MDT in the DPAP office to support PD was another innovation. The most noteworthy action of CRD is issuing a circular empowering WDT-ENG to approve proposals up

to Rs. 25,000. This tremendously contributed to decentralised decision-making and funds allocation at the field level and helped move towards a more participatory approach.

However, CRD did not have full control over the district administration to ensure compliance with programme guidelines. As a result, the whims and fancies of Collectors and PDs prevailed and led to several anomalies across districts.

4.4.2 Training/support organisations

Several central and state level organisations in the state capital have played important supportive roles to the MoRD watershed programme. MANAGE, a Ministry of Agriculture organisation, prepared the watershed guidelines based on Technical Committee recommendations incorporating the successful approaches of NGOs across the country. It also developed Operational Manuals to guide field level processes, but MoRD did not approve them. It took up watersheds as a PIA to learn from field realities of implementing participatory watershed programme as per the guidelines. It contributed to the improvement of field processes and to policy debates. Finally, it organised training for PIAs, WDTs, MDTs and PDs on various aspects of participatory watershed development within and outside the state.

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The National Institute of Rural Development (NIRD) is another central government organisation that conducted training at national level. It also conducted a study on 'Operationalisation of Watershed Guidelines' (Purandare & Jaiswal 1999) and recently produced the 'Operational Manual on Watershed Development'. Andhra Pradesh Academy of Rural Development (APARD) is a state level organisation that played a greater role in capacity-building of WDTs, PIAs and MDTs in the state. It offered trainings on various aspects drawing expertise from different sources and organised numerous exposure trips. Watershed Support Services & Activities Network (WASSAN), a registered trust, conducted several trainings for NGO-PIAs and WDTs.

These organisations have functioned more or less independently in designing and conducting trainings, though they are all located in Hyderabad, incidentally in the same locality (except WASSAN). There is no co-ordination and/or collaboration among them. The training they provided did not synchronise with field processes. As a result, the participants had no scope for using what they had learnt and there was no follow up/hand holding support after the training. Most of the trainings were organised based on assumed needs and thus did not meet participants' individual needs. The inputs that were provided could not be applied back home due to lack of co-ordination with PDs. The high turnover of WDT members also made the investment in training futile. Most of the training focused on watershed concepts and guidelines, PRA tools and management aspects. There was little focus on concerns like gender, equity and sustainability and there was inadequate focus on demystifying technologies and popularising indigenous technologies, which have a bearing on the participation of small and marginal farmers. The outcome of the studies was never used to influence policies and procedures to improve field implementation.

4.4.3 The Chief Minister (CM)

The state's CM has greatly influenced the watershed programme. Out of sheer enthusiasm to see the impacts immediately and impress the masses, he reviewed the weekly and monthly progress in all districts during the summer through teleconferences. Without allowing

for field realities, he put a lot of pressure on PDs to take up more WHS. This resulted in 'cooking up' figures by PDs to save their skin and encouraged contractors to speed up construction works. He insisted on implementing Continuous Contour Trenches (CCTs) compulsorily in all watersheds, irrespective of the terrain and feasibility for such structures. This had multiple repercussions for the participatory watershed programme at ground level. Budgets were diverted to CCTs at the expense of local watershed action plans. Often machines were used to dig trenches to meet the targets, meaning that local labour lost employment opportunities. Before digging, aligning and marking on contour lines required technical skill. Trenches were dug without any regard to these aspects. As a result, most of the places they became erosion gullies and counter productive.

He addressed huge gatherings of WA and WC office bearers from all watersheds in the state twice at Hyderabad during the project period of 4 years. He used these occasions more for sharing government achievements for boosting his public image, though it did have some inspiring effect on office bearers. The cost of these visits was taken from the training budget. In fact, they were the only events shown as capacity-building initiatives in the G-G watersheds.

4.5 Summary: Capacity-building of different stakeholders

To institutionalise participatory watershed projects, capacity-building of different stakeholders on relevant aspects is crucial, especially in the government bureaucratic machinery. But as we have seen in this section, this was never prioritised by the secondary stakeholders in MoRD watersheds. Some training programmes were organised on the initiative of the Commissionerate of Rural Development (CRD) and the PD of DPAP, but they had little impact for various reasons. Mainly there was no capacity-building strategy at these levels. There was no identification of training needs for primary and secondary stakeholders, no development of appropriate materials, and no timely trainings followed up by hand holding or refresher courses in tune with field processes. Eswaran Committee, a committee constituted by MoRD to study and suggest capacity building strategy, brought out clearly the gaps in capacity-building and recommended measures. But these were never taken seriously by those concerned. In the beginning, between 1996 and 1998, state level institutes such as MANAGE and APARD and the national institute NIRD did offer a series of trainings (see above). But today, though the watershed programme has scaled up much more, such efforts seem to have dwindled.

In Chittoor district, the training budget of DPAP watersheds was centralised on the pretext that it was being misused. Instead of developing appropriate systems for controlling this, the administration chose to centralise it and release it against the training action plans submitted by PIAs but funds were rarely released for this purpose. Of the four PDs, only one took some initiative for capacity-building, based on his own beliefs and understanding of the component. But the general lack of importance attached to capacity-building efforts by PIAs by PDs & MDTs meant that no systematic approach was followed. This was clearly visible in both the G-G watersheds.

In G-N watershed, lack of financial flexibility meant that it was hard to bring in outside experts to conduct training in the watershed villages. The senior WDT members did most of the training for different groups (WC/WA, labour groups and UG farmers). On the job sharing on technical and programme aspects helped to generate reasonable awareness and capacities to participate in planning and implementation. The WDT did not receive any special training under DPAP. Their previous field experience and trainings received from outside sources through PIA

contacts helped them to facilitate this watershed project. While some of them did attend some sporadic trainings in the district organised by DPAP, their impact was negligible.

In contrast, the range of subjects covered under trainings in the N-N watershed was much greater and a systematic, proactive approach was taken to training the PIA/WDT, community groups and office bearers. The management agencies regularly reviewed training needs and arranged appropriate inputs. Several awareness camps and exposure visits helped to generate good understanding about various issues and aspects among community members. Cultural media were used extensively for training. The WC, VCs, UGs and SHGs received lots of training in topics such as land development, integrated pest management, sustainable agriculture, compost manure, livestock management, gender sensitisation for both men and women, leadership development, and income generating activities etc.

5. Post project sustainability

One indicator of the institutionalisation of an approach is the extent to which it keeps going after a project has formally ended. In this section I assess the status of participatory watershed projects in the post project phase.

5.1 Functioning of new institutions

In the MoRD watersheds, since WA membership was automatic, there was no sense of ownership among community groups. There was no broad based agenda for the WC/WA, hence the members/office bearers saw no reason for continuing meetings after the completion of project. This clearly shows that such institutions will only be sustained when there is a continuous agenda that is relevant to their livelihoods. Ambiguity existed in the case of the Secretary's post and the honorarium to be paid. Little was done to integrate these organisations with other village institutions and line departments. Lack of capacity-building focusing on institutional sustenance and resource mobilisation posed a serious threat to post watershed project sustainability. The women's SHGs were only formed so they could qualify for Revolving Funds, and they did not see any role for them in watershed management. They did not play any meaningful role in watershed activities, except as labour. There was no clarity as to how gender and equity concerns could be addressed. User groups were not formed in the strict sense; the person who built the structure was expected to maintain it. There was no interaction among the benefiting neighbouring farmers.

In the N-N watershed, WC and VC meetings were held regularly. The agenda for these meetings was broad-based, covering issues like social discrimination, gender justice, human rights, livelihood issues, convergence of government schemes, NRM based IGP etc., besides watershed development activities. The two kinds of groups, activity based and structure based, still regularly meet to discuss various relevant topics. The SHGs have been federated into Mandal Samakhya and can access more money for production related purposes. The SHG leaders were also members of other Mandal level institutions viz., Stri Chaitanya sakhti, Agricultural Labour Union etc., promoted by KS. The young people trained as volunteers took over most of the roles of the WDT and facilitate the meetings of these village institutions. The number of visits of WDT fell considerably. Based on this, it can be concluded that the social structures promoted under N-N watershed are more sustainable than the G-G and G-N watersheds. Though these institutions were quite active during the project implementation in G-N watershed, due to lack of efforts to introduce a broad based and continuous agenda to them, they had almost stopped

meeting. With no further funding or direction from DPAP, GVS shifted its concentration to newly sanctioned DPAP watersheds in the neighbouring Mandals, leaving these institutions to fend for themselves. The institutions are totally defunct in G-G watershed in the post project period.

5.2 Functioning of new physical structures

The banning of bunding in MoRD watersheds has seriously hindered small and marginal farmers from participating in the project. Mango was the only crop promoted under the programme's horticulture component. By and large, the resource rich families have benefited from this component because the presence of an irrigation source was the main criteria for distributing mango grafts. This excluded resource poor landowners. Non-local skilled labour tended to be employed for building the stone and masonry structures, depriving local labour of acquiring new skills and gaining employment. The WHS are, by and large, located on or close to lands belonging to resource rich farmers who could afford to invest the money initially.

Disputes over common land marred community initiatives to develop, manage and allocate usufruct rights in favour of the poor. There is no social regulation over use of water in check dams (CDs), so the neighbouring resource rich farmers were seen pumping out water for growing water intensive crops. Augmentation of resources such as soil, water and vegetation (fruit plants and tree species) had been more or less done sectorally. The inter linkages or the need to integrate them to derive maximum productivity benefits did not receive any attention by the planners. The resource development benefits were not linked to increasing the agricultural productivity with initiatives in the latter component.

In the G-N watershed, *Vakira* (farm ponds) that were constructed by the farmers themselves, were being maintained well by the concerned farmer. Other structures like gully checks, check walls and CDs, the adjacent farmers were taking care of. So far, major repairs were not reported. It remains to be seen how the community would respond in the event of major damage. However, at community level so far there has been no discussion about developing an appropriate maintenance mechanism in the event of any such occurrence, although community members were confident that they would attend to the repairs collectively.

In the N-N watershed, a second phase of the project is focusing on production related activities. Improving the livelihoods of the resource poor by supporting their agriculture, and developing productive assets for income generation, were the main components in this phase. Hence, all the concerned farmers were actively taking care of their treated lands and the common structures in gullies and the streams.

5.3 Promoting agricultural sustainability

As stated elsewhere already, production related activities did not receive much attention in MoRD watersheds during the programme's four years. Soil and water conservation works were the main components. Though the watershed guidelines did mention production activities, in practice the menu of watershed activities/technologies did not prioritise agricultural development. However, the water recharge and storage created by check walls and CDs has brought adjacent fields under cultivation, encouraging planting of crops like paddy and tomato. But since bunding was banned, the drylands, especially the marginal lands, could not be developed/reclaimed. Hence, there was no impact of the programme on dryland agriculture, except for lands closer to WHS.

In the G-G watershed, poor communication between line departments meant that two CDs were constructed in a stream as part of the watershed programme, downstream of a big tank constructed by the Panchayat Raj department. As a result, the CDs became obsolete. Moreover, tanks located downstream of the CDs were not taken into consideration and villagers with land in the command area were deprived of water. The large tracts of common lands in G-G watershed were planted with Eucalyptus species primarily influenced by the forest department plantations. No-one thought to plant multipurpose tree species to meet the communities' timber and usufruct needs.

In the N-N watershed, agricultural development of small and marginal farmers was the top priority and hence all the treatment activities aimed to strengthen this. Examples include diversion drains, *Vaddukattalu* (diversion drains in the streams) bunding, land clearance, well deepening etc. Sparing runoff for downward flow in the streams was done consciously. Soil nutrient management and pest management were promoted through organic methods.

5.4 Social regulation against over exploitation of natural resources

Poor consideration of resource use rules has undermined some of the efforts made in all the watersheds. In the G-N watershed, pumping of surface water collected near WHS, which is meant for percolation, had been banned. In the absence of such a voluntary ban in the G-G watershed, adjacent farmers were siphoning out the water. However, in both watersheds the communities did not ban digging private bore wells due to inability to impose and practice any social regulation on groundwater exploitation. Creating a buffer zone around drinking water bore wells to ensure optimum sustainable recharge was also not attempted.

In the N-N watershed, surface water pumping had been banned, but the issue of digging new private bore wells was not tackled with the community seriously, as influencing neighbouring resource rich OC farmers, who are not part of the project, would be difficult. In both the G-N and N-N watersheds, clear arrangements for social fencing (the community voluntarily abstains from grazing their cattle or cutting trees) had been created before investing in the development of common lands (see Appendix A). In the G-G watershed, a watchman was hired to protect treated common land without involving the community in the process. It was reported that pilferage of Eucalyptus timber has increased of late as surveillance reduced after the completion of the watershed project.

6. Issues affecting people's participation and recommendations

Based on the above analysis, I have identified the following issues that have affected participatory approaches and their institutionalisation in watershed management. The nature of these issues, their implications and recommendations to address them are discussed primarily focussing on the District. Nonetheless, most of them are also applicable to other Districts in the State as the situation is more or less the same.

6.1 Social Issues

1. Lack of community awareness of the main features of the project

Nature of the issue: Most people were not aware of the guidelines and the participatory approach they promote. As a result, they did not actively participate in the programme.

Implications: Participation of all, especially the small and marginal farmers and women, is limited. The local institutions SHG, UG, WC & WA are very ineffective largely because of the way that they have been formed, capacitated and empowered to play their roles. As a result, planning and implementation of soil and water conservation works were done more or less through a top-down approach. Sustainability of the institutions formed and the works done is doubtful beyond the project period.

Recommended action: The entire first year should be given to the PIA for carrying out the vital preparatory and planning phases, which are very important for laying the foundation for participatory approaches. Capacity building of PIA and WDT in participatory approaches and socio-technical aspects of watershed management should be done soon after the allotment of watersheds, and periodical backstopping should be provided. Awareness and capacity-building material for local institutions should be developed centrally by DPAP and made available to the PIA/WDT for offering regular guidance to plan and implement the mobilisation and awareness building events. The progress review meetings of PD/MDT should give equal importance to the social mobilisation process as to physical progress. Achievement indicators have to be developed for participatory monitoring and evaluation.

2. Little participation by poorer families

Nature of the issue: Poor families own lands that are mostly assigned, small in size, degraded and uncultivable. They lack investments to develop and cultivate these inhospitable lands. They are vulnerable and often migrate away due to lack of employment opportunities locally. The landless and assetless are the worst sufferers. Their needs are not being addressed at all under the watershed project. Due to a lack of specific focus on the poor, the facilitators often ignore them. The project budget is invested mostly in physical works, which benefits mainly the resource rich. This skewed investment is depriving the poorer sections of development opportunities. Domination, discrimination and exploitation of the poor by the resource rich, often upper castes in the village, has undermined the organisation of these groups by creating problems for PIA/WDT.

Implications: The poorer sections of the community are overlooked in terms of development of their lands as well as participation in decision-making processes.

Recommended actions: Community mobilisation and organisation should begin from the bottom i.e., dalits and resource poor families (as was done in the N-N watershed). Cultural media are a powerful tool to generate awareness among these groups and bring them into the mainstream. Production problems and options faced by poor families should be identified during the planning process. They should be organised into SHG/UGs. Organising the groups of poor/women around their livelihood concerns with thrift and credit should be the basis for group building. Strategically, the representatives of these sections should be brought into the WA/WC. There should be a sub plan (within the overall watershed action plan) to focus on developing their lands, asset building through IGP and converging government schemes for their welfare. Priority should be given for the treatment of poor people's lands using indigenous technical knowledge and low cost methodologies. The landless and regular distress migrants should be identified and organised into labour groups for better employment opportunities and for negotiating better wages. They should be given priority in treatment provision and should be

trained to do all kinds of civil works in the watershed. Their capacity should be built with upper caste landlords to ensure their share of opportunities/benefits.

3. Total marginalisation of women in decision-making

Nature of the issue: Except for organising a few women into SHGs to receive RFs, women do not play any role in the watershed programme. There is no focus on involving women in planning and implementing watershed treatment measures on their own or common lands. Women members of the WC are not actively involved in the events and decision-making because of low confidence and lack of encouragement to participate.

Implications: The women SHGs' primary concern is thrift and credit, as they were not aware of their role in the programme. Attendance of women members at WC meetings and capacity-building events is very poor. Male members of the WC are insensitive to women's concerns and their strategic needs while planning and allocating financial resources for various activities. Women are totally marginalised in planning and implementation. As a result, the gender concerns in sustainable natural resource management are totally overlooked.

Recommended action: A woman member should be included in the WDT for close interaction with and motivation of the women in the watershed villages. Separate meetings should be held for women to generate awareness and understand their needs and aspirations. Equal participation of women in all the meetings, exposure trips and training camps should be ensured. There needs to be a special focus on building women's leadership and active participation in the committees. Awareness camps for men to make them gender sensitive and supportive of women are also needed. Ensuring equal opportunities, wages and participation in decision-making processes should be the norm. Destitute, old and single women need to be identified and efforts made to develop their assets and give them access to government schemes. Women's groups should be trained in dealing with gender inequality, atrocities and strategic needs. Watershed action plans should have activities related to women's agenda and women should be involved consciously in planning and implementation. Women's participation should be included as an indicator in the progress review formats for regular monitoring.

4. Neglect of artisans and occupational groups

Nature of the issue: The artisanal and occupational groups like shepherds, small ruminant and milch animal rearers etc., who are mainly dependent on common lands for grazing, were not consulted to identify their problems and needs during the planning of development measures for the common lands.

Implications: Development measures on common land can not be sustained without identifying the dependent user groups.

Recommended action: During the planning stage, occupational groups, their livelihood sources and problems need to be identified. They have to be actively involved in planning and implementing the various developmental measures of their choice on common land. A contributory approach will ensure their accountability. Handing over of management responsibility after sufficient capacity building will ensure sustainable livelihoods for these groups.

6.2 Participation issues

1. Participatory methodologies are not effectively used

Nature of the issue: Participatory approaches involve very active participation of local communities. Participatory methodologies like PRA tools can achieve this. Hence, the guidelines emphasise using PRA tools in all stages of the project. But in practice they are not used, especially in GO-PIA watersheds. In the case of NGO-PIA watersheds these tools are used ritualistically mostly in the beginning, but the outputs are not used subsequently in project planning and implementation.

Implications: Action plans are prepared without people's participation. Traditional wisdom of local communities is not made use of. Treatment measures are not targeted to the greatest areas of need. The most needy areas/farmers are left out, as they were not visited/consulted during the planning.

Recommended action: Procedures are required to ensure participatory methodologies are used and that their outputs are used by the PIA/WDT in the watersheds for planning, implementation, monitoring and evaluation.

2. Lack of exposure trips

Nature of the issue: Participatory approaches to natural resource development are new to the facilitators as well as to the community. Hence, exposure visits to other watershed projects could play an important role in generating awareness of and confidence in the approaches and watershed technologies. But despite adequate financial resources, exposure visits have not been organised for the groups and management bodies.

Implications: This results in low awareness of project approaches and components and poor participation of the community in planning and implementation.

Recommended action: Procedures are required to allow exposure visits for all categories of community groups at appropriate times. And it should be part of the monthly progress review of the PD and MDT.

3. Implementation of works by contractors

Nature of the issue: The nodal farmers, office bearers of WC/WA and WDT in some cases in GO watersheds have executed most works using contractors due to the lack of UGs.

Implications: There is no community ownership of WHS. Project funds have been misused. Labour groups have been deprived of their wages. The sustainability of these structures is therefore precarious.

Recommended action: Appropriate procedures have to be developed to discourage contracting and ensuring implementation of works by groups through collective action.

4. Lack of participatory monitoring and review

Nature of the issue: Participatory monitoring and review are essential for institutionalising participatory approaches in watershed programmes. But this has not been given any emphasis. In the four years of the watershed project there has been no midterm evaluation of project activities, including works undertaken, budget spent and balances, balance of works and requests and prioritisation of works for ensuring the project's sustainability.

Implications: There is no way of assessing progress on the active involvement of local communities and facilitators together. Community groups have no access to project details, such as budgets spent and works undertaken, or the classes of people who have benefited.

Recommended action: Procedures are required to ensure that participatory monitoring and review are conducted periodically in the watershed by local institutions. The PIA/WDT should be sensitised to the importance of participatory monitoring and the PD should review it during the monthly reviews.

6.3 Technological Issues

1. Poor delineation and demarcation of the watershed area

Nature of the issue: The watershed area was not delineated along drainage patterns and the size of the area is bigger than the allocated budget per watershed.

Implications: Treatment measures are scattered over a large area, thus reducing their cumulative benefits. This has also made clear identification and mobilisation of the target community difficult.

Recommended action: Topographical sheets and village maps should be used by DPAP (MDT-ENG) to broadly demarcate the watershed area before allotting watersheds to PIAs. Later they should be finalised by PIA/WDT using a participatory approach so as to take into consideration the aspirations and suggestions of local communities.

2. Benchmark data was not collected from the primary sources

Nature of the issue: Only data collected from secondary sources (government records) was used for planning the watershed development measures. This is often outdated, inaccurate and does not reflect local realities. The MDT did not attempt to collect data from primary sources (the people themselves), using participatory methodologies. Such information would be more authentic and owned by the people.

Implications: Accurate data on community composition, number of poor families, landless, land holdings, animal statistics etc., were not available and as a result planning could not be done properly and the poor and really needy missed out in the planning and implementation processes. Identification and assessment of problems associated with natural resources was also impossible.

Recommended action: The WDTs (both GO & NGO) should be trained in using participatory methodologies. Data has to be collected from the people and documented properly for regular use during the planning and implementation, after cross-checking and collating with secondary data.

3. Watershed development plans prepared in a non-participatory manner

Nature of the issue: Despite clear guidelines to the contrary, the action plans were prepared without involving the community. Instead the WDT prepared them following the guidelines given by DPAP in prescribed formats and they only included activities listed on those forms.

Implications: The aspirations and needs of local people are not accommodated in the programme. The poor and disadvantaged are overlooked. ITK is never appreciated nor finds place in the menu of watershed technologies. Common property resource (CPR) development does not receive any importance. Except for the RF, the SHGs do not get any investment for addressing their needs. No negotiation takes place with the concerned farmers for contributions. Lack of UGs for proposing and planning the structures during this process endangers the sustainability of entire programme.

Recommended action: Adequate process steps are given in the guidelines for developing plans through a participatory approach. So procedures are needed to ensure that these steps are actually taken.

4. Using machines for construction

Nature of the issue: Often heavy machines (e.g. hydraulic excavators) are used to construct Continuous Contour Trenches (CCTs) diversion drains etc., so that targets are met on time.

Implications: Local labour is deprived of employment opportunities. It means that outside contractors benefit from the watershed budgets at the expense of the poor and women.

Recommended action: Policy and procedures are required to ban heavy machines in watershed works and to ensure that local labour groups are organised to do the work instead.

5. Absence of field bunding on private and common lands

Nature of the issue: Field bunding, the most important soil and moisture conservation measure in watershed projects, was banned to curtail the misuse of development funds. Gully control and water harvesting structures are the main types of watershed technologies in the action plans.

Implications: One of the main objectives of watershed i.e., *in situ* soil and moisture conservation is not achieved due to lack of bunding on private and common lands. As a result, small and marginal farmers are deprived of public investment and their participation is seriously limited in the watershed development process. The sustainability of WHS is affected due to unabated soil erosion on private and common lands.

Recommended action: Bunding should be allowed. What are needed instead are appropriate systems and mechanisms to check corruption and to increase the participation and accountability of concerned farmers, UGs, and the WC/WA.

6. Lack of effort to identify/promote indigenous, low cost technologies

Nature of the issue: The technologies promoted were the typical menu of watershed development projects. No efforts were made to identify indigenous, low cost technologies.

Implications: Top-down imposition of treatment/development measures undervalues local farmers' wisdom and innovations, which are likely to be more appropriate for local conditions and hence more sustainable, and ultimately their ownership of the programme.

Recommended action: The WDT officers should be trained to identify and appreciate indigenous technologies. Action plan formats should include columns for information about existence of ITK in the watershed area. Preference should be given to ITK over externally imposed technologies in the action plans. The PD and MDT should be sensitised to promote ITK and they should consciously scrutinise the action plans to ensure inclusion of local and low cost technologies when approving them.

7. Monocropping of mango

Nature of the issue: Under the horticulture component, only mango plants were promoted because of their availability and ease of handling, the fascination for orchards among medium and big farmers, possibilities for making profit margins etc..

Implications: Mango plants were only given to those farmers who have relatively better land and water facilities. As a result, the marginal farmers, who have no irrigation source, were not able to benefit. Monocropping mango over a large area might pose problems in the future in terms of pest and disease management and marketing.

Recommended action: Policies are needed for introducing mixed fruit species like Amla, ber, tamarind, pomegranate, guava etc., which can thrive on the marginal lands owned by the poor. Preference should be given to the resource poor farmers for plant distribution with support for drip and other water efficient methods converging with the government schemes and critical investment from the development fund.

8. Insignificant impact of afforestation efforts

Nature of the issue: Under the afforestation component, considerable amounts of project funds were spent raising the plants in nurseries and planting them on degraded tracts of the middle and upper reaches of the watershed. But the survival of plants has been poor due to lack of protection and watering during the summer months. Promotion of certain species like Eucalypts as monocrops, which will be clear felled after few years leaving the land barren once again, is another problem.

Implications: Catchment protection and local environmental regeneration is not achieved. The usufruct needs of the people will not be met by Eucalypt plantations. Local ecological balance and stability will be threatened.

Recommended action: Policy support is required to ensure plantation of multipurpose mixed species and to provide a budget for watering the plants during the initial years. Protection should be provided through social fencing in common lands to prevent stray grazing.

9. Lack of focus on agricultural development

Nature of the issue: During the four years of the watershed project, the emphasis was only on resource conservation at the expense of agricultural production, especially providing support to agricultural inputs and promoting low external input agricultural practices.

Implications: Cultivation of food crops continues to suffer from lack of credit/investment for critical inputs. A shift towards commercial cropping is continuing, and is not helping small and marginal farmers to improve their land-based livelihoods.

Recommended action: Policy support is required to allocate a percentage of the development budget to crop production and to provide the necessary agricultural inputs. Action plans should include analysis of local farming systems, package of practices, and availability of internal and external low and high inputs. Production enhancement measures should receive high priority. Small and marginal farmers should be the main target group under this component.

6.4 Financial issues

1. Centralisation of community organisation (CO) and training budgets in DPAP

Nature of the issue: The funds earmarked for community organisation and training were not released on time and in full as suggested in the guidelines because of fears of misuse.

Implications: PIAs were not able to carry out community organisation properly through awareness camps and exposure trips during the preparatory phase. This constrained the capacity-building of stakeholder groups and undermined people's participation.

Recommended action: Action plans similar to the watershed development plan should be developed for CO and training and a budget should be released for these plans. This will not only curb misuse of money but will ensure a systematic strategy and approach for both these components. The PD and MDT should be sensitive to the importance of these components and the need for timely payment.

2. Fixed percentages of funds for different components

Nature of the issue: The development budget is divided among the main components of development measures (soil conservation, WHS, afforestation and horticulture) by fixing certain percentages by PD–DPAP.

Implications: This undermined community groups' decentralised decision-making processes. The action plans tended to be guided by these allocations rather than the actual needs of a given watershed and its inhabitants. This goes against the mechanism of direct funding to the communities contained in the watershed guidelines.

Recommended action: Budget allocation to different components should be left to the communities to decide and should depend on local needs and the feasibility of various activities. Developing appropriate scrutinising systems at community and facilitator (PIA/WDT & MDT/PD) levels should prevent the skewed allocation of budgets to certain components by some vested interest.

3. Linking release of PIA administration funds with expenditure of programme budget

Nature of the issue: There was too much emphasis by DPAP on physical works and spending the programme budget. The time spent by PIA/WDT on community mobilisation was not recognised as valuable and any expenditure on these activities was seen to be a 'waste' when little expenditure is shown under the programme budget. Hence, in order to increase the spending on works/physical structures, administration budget was not released as per the year wise percentages suggested in the guidelines.

Implications: Most of the time the PIA did not have money to pay the WDTs' salaries and travel expenses, which meant that the community mobilisation process was neglected and the physical works were executed without community involvement.

Recommended action: The PD and MDT should be sensitised on the importance of community organisation and a full year should be allotted for community organisation. Works selection and execution should not be forced in the first year. Timely budget releases to the PIA will ensure timely and effective action by PIA/WDT and the project progresses when the community is properly organised and capacitated.

4. Over-emphasis on WHS

Nature of the issue: Pressures from DPAP for quick financial progress forced the WDT/PIA to promote more expensive structures like WHS and check dams at the expense of cheaper options like bunding.

Implications: Resource poor farmers who could not afford to pay up front for such structures missed out. As planning and implementation of these structures did not involve any community interaction and collective action, the richer farmers became the owners and beneficiaries of the structures they could afford to construct.

Recommended action: Participatory planning and implementation would prevent the elite from cornering the benefits. Sub plans for poorer communities and ecologically fragile areas would help address equity concerns in terms of investment and sharing of benefits in the watersheds. Sensitisation and establishment of social regulation norms for ground and surface water use would avoid misuse of harvested and/or recharged water resource by selfish individuals.

5. No strategy for the revolving fund (RF)

Nature of the issue: The revolving fund is expected to help the SHG members to take up livelihood promotion activities. But there is little clarity on the concept of RF and procedures for using it.

Implications: The groups that have received RF have either distributed it equally among them or by rotating it around the group. They have not repaid it as there is no clarity as to who will handle this. DPAP has not developed any procedures for the sustainable rotation and use of the RF. Consequently most SHGs are also deprived of using the RF.

Recommended action: The RF should be at the disposal of the federation of SHGs and they should process the requests democratically and continue to give it to the needy groups

beyond the end of the watershed project. Proper checks and balances involving other CBOs may minimise misuse of these funds.

6. Lack of transparency on financial matters

Nature of the issue: Information on financial transactions was confined to the office bearers of the WC, WA and WDT. In one watershed, only the Chairperson and WDT were aware of expenditures.

Implications: Lack of awareness on allocation and use of funds for the watershed programme did not motivate people to propose development plans and ask for investment on their land. It also allowed mismanagement and unfair allocation of funds and works. As a result, participation of all sections of the community was undermined.

Recommended action: Procedures are required to make the community aware of financial transactions. Apart from the social audit board, estimate sanctions and payments should be done in the WC meetings. Regular WA (general body) meetings should be held and information shared on financial matters. Periodical financial reviews in WC meetings would also be helpful.

7. Lack of accounting procedures and systems

Nature of the issue: There were no specific accounting procedures and systems for the participatory project despite the operational guidelines stating that these systems should have been developed at DPAP level centrally and that PIAs/WDTs should be trained in them so as to establish them in their watersheds. PIAs were forced to develop their own systems.

Implications: No uniformity in accounting procedures established at watershed and PIA levels. Lack of clarity on procedures and systems meant confusion over to how to maintain records, vouchers, cash handling and accounting etc., by the WC and UGs. The PIAs found it difficult to conform to the changing instructions from successive PDs. Lack of sound procedures and systems might result in weak financial accountability on the part of the PIA/WDT and make sound financial monitoring by DPAP difficult.

Recommended action: The CRD and DPAP should give serious thought to developing appropriate and simple accounting systems within the spirit of participatory approaches (ensuring they are maintained by the concerned stakeholders after adequate capacity-building).

8. Lack of vehicles

Nature of the issue: The watershed villages are in remote areas. Public transport is not dependable to make regular visits in time and as needed. DPAP does not allow purchase of vehicles like two wheelers because assets should not be purchased under the project.

Implications: The PIA/WDT found it very difficult to visit the villages and the work sites. This deterred frequent visits and close interaction with the communities, affecting the social mobilisation and collective action process.

Recommended action: Under the administration funds, the PIAs should be allowed to purchase two wheelers for WDTs. The PIA should develop appropriate procedures to curtail the misuse and ensure efficient management of these vehicles by the WDT. Adequate field allowances for travel should be paid to motivate them to make frequent visits and thus improve interaction with the communities.

6.5 Institutional issues

1. Lack of criteria for identifying suitable officials for PD and MDT

Nature of the issue: There is no vision or criteria for identifying suitable officials for the positions of PD, MDT and WDT in the management agency for supporting participatory watershed management projects.

Implications: Officers with very diverse backgrounds have filled these positions. There is a striking mismatch between what they can do and what they are supposed to do. Lack of knowledge, field experience, orientation and inclination to work in a participatory environment makes them rather counter productive to the success of the watershed programme.

Recommended action: Criteria are needed for selecting suitable people for these positions. As far as possible, the person selected for the PD post should have qualifications and training in natural resource management. Previous working experience in such projects should be prioritised. A track record of promoting/working in people centred development should be a priority. This is also true for the MDT and WDT positions.

2. High turnover of WDT staff

Nature of the issue: The high turnover of WDT staff was mainly because the salary offered was not commensurate with their working conditions. Hence, qualified persons with technical backgrounds are not attracted. The heavy workload¹³ and lack of basic amenities, besides lack of adequate compensation packages often make them quit the job early.

Implications: High turnover of qualified and trained WDT staff often negatively affects project implementation. Often watersheds can go for some time without any full time person taking care of day to day activities. The training and the rapport WDT had developed with the community groups all go to waste.

Recommended action: A policy is required to increase salaries and change the ratio between each WDT member and the number of watersheds that s/he is supposed to look after.

3. No strategy for induction or capacity-building for PD and MDT staff

Nature of the issue: The PD, MDT and WDT staff were not given any orientation and training to familiarise them with the participatory watershed programme. In some cases they

¹³ Each WDT member looks after about 3-4 watersheds and also provides services in his faculty in all other watersheds of PIA

were sent to APARD and other places. But due to lack of systematic and need based trainings, these trainings were ineffective.

Implications: The PIA and WDT were not able to fulfil their roles effectively. They did not understand and appreciate the usefulness of participatory approaches. They were insensitive to the spirit of the guidelines and lacked the capacity to support the programme adequately. Lack of a support or fallback system for guidance and counselling made the project vulnerable to their whims and fancies.

Recommended action: An induction strategy is needed for all categories of government officials employed and sufficient time and resources have to be allocated for this purpose. The guidelines envisaged systematic capacity-building of WDT/PIA, but in practice this is not happening. The PD should take the initiative in developing a strategy for capacity-building of PIA/WDT. Team resource persons should be identified for providing inputs. Training on various aspects should be developed in the local language and made available to the PIA/WDT. A stipulated training budget should be put at the disposal of PIAs, and MDT should monitor them planning and organising (in house or external as the case may be) appropriate capacity-building events periodically depending upon the project needs.

4. Lack of transfer policy for PD, MDT and GO-WDT

Nature of the issue: These officers were frequently transferred or repatriated to parent departments. Some influential officers continued for too long.

Implications: Project implementation was undermined by lack of continuity. Training and field experience are lost when someone leaves prematurely.

Recommended action: A policy is required for keeping suitable officers in post for at least five years.

5. Defunct District Watershed Advisory Committee (DWAC)

Nature of the issue: DWAC is expected to play a very important role in guiding and developing policy framework to allow for the smooth implementation of the participatory watershed programme in the district. But it has not been constituted in this District, as none of the successive PDs took the initiative to do so.

Implications: The PD and MDT were deprived of expert advice from the heads of line departments. Field level issues were unresolved and decisions taken without seeking expert advice will be counter productive to the entire programme, for example, the ban on bunding. The line departments were not informed of such a major natural resource development programme and their services in terms of information and expert advice went unused.

Recommended action: DWAC should be organised immediately and made active in the programme. This would solve many field level problems and provide for a sound policy making framework for implementing the guidelines at the district level.

6. Lack of criteria for PIA selection

Nature of the issue: All kinds of GO and NGO agencies have become involved in running the programme. Inexperience, no local presence and poor commitment to people-centred development on the part of some PIAs is threatening the quality and sustainability of the programme.

Implications: Participatory approaches are not promoted in the watershed programme. Top down approaches and corruption may creep in.

Recommended action: Criteria are needed to select PIAs. These may include the agency's working experience in NRM, age of the institution, staff pattern and capacities, local presence and credibility, community mobilisation skills, willingness to take up innovative activities etc.

7. Inability to de-select non-performing PIAs (GO & NGO)

Nature of the issue: Once selected, PIAs can not be removed even if their performance is not encouraging or if they are found guilty of misusing funds.

Implications: The implementation of watersheds is affected. The participatory processes and approaches are not given any importance and works are executed mostly under contractorship.

Recommended action: Policy and procedures are needed for de-selecting non-performing PIAs. PIAs should be assessed after a year using a set of performance indicators for deciding whether they can continue as PIAs.

8. Lack of capacity-building for local watershed institutions

Nature of the issue: For various reasons, the SHG and UG groups were not given adequate training in group management and empowerment or technical activities. The members of the WC were also not given proper orientation on programme aspects and their roles and responsibilities.

Implications: The role of SHGs was almost insignificant and did not affect the programme in any way. The UGs were not formed and the works were executed through contracts by those who could afford advance investment, office bearers of WC, WA etc.. The role of the WC members was almost negligible. Only the office bearers had all the information and they took the decisions.

Recommended action: A capacity-building strategy is needed for the watershed groups and management bodies. Time and resources should be given to the PIA/WDT to build such capacities in the first year and beyond.

9. Undemocratic selection of WC and WA office bearers and members

Nature of the issue: The selection of office bearers for the WC and WA was mainly done through nomination without seeking most of the community's opinion. They were usually chosen because of their influence in the village or in order to give representation to the hamlets. These institutions were also formed without adequately informing the community

about their roles and responsibilities. As a result the community meekly witnessed the proceedings of their selection in a “grama sabha”.

Implications: The office bearers did not represent the aspirations of people. There was a communication gap between them and they have no accountability. Most of the decisions mostly benefited the office bearers or their relations. As a result, the poor and needy were completely marginalised from the programme.

Recommended action: The WC and WA should only be formed after sufficient awareness-building in the community and by drawing representatives from mature SHGs and UGs.

10. Lack of sustainability of new village institutions

Nature of the issue: The groups (SHGs and UGs) and management bodies (WC and WA) created under the watershed programme were not sustainable. No UGs were created at all. The members of the SHGs that were formed for receiving RFs were not given proper training in group management and resource mobilisation. They operated in isolation of the watershed programme and in most cases they were totally neglected after the watershed project was over. The WA was non-existent, except for the President. The WC ceased to function soon after the end of the project due through lack of follow up.

Implications: Lack of groups resulted in poor maintenance of physical structures created. Resource conservation activities soon became useless due to siltation caused by lack of maintenance. Resource degradation continued like in the past. Despite investing huge financial resources in watershed development, the livelihoods of people were not improved.

Recommended action: The sustainability of the new institutions depends heavily on the sustainability of the SHGs and UGs, which are the primary building blocks. During the preparatory period, SHGs should be formed based either on socio-economic homogeneity or similarity in livelihood/enterprise. UGs should be organised on the basis of common resource related problems or on the basis of continuity in ownership of land and water resources. They should be made into thrift and credit groups, which allows them to meet regularly, maintain records and become eligible to mobilise resources from banks and line departments. Maintenance of common structures should be done as a group through collective action.

The WC and WA should only be formed after the capacity of SHGs and UGs has been built. Membership of the WA should be restricted to those who are members of SHGs/UGs. A nominal annual fee should be charged to members, which will build their stake in the programme. The WC should be formed of representatives from SHGs and UGs in the grama sabha and the Chairperson should be chosen from these members. The positions of President and Chairperson should be rotated once in two years. Need-based capacity-building events need to be organised at different stages for these institutions to allow them to function in a sustainable manner even beyond the project period.

11. Centralisation of Revolving Fund (RF) at DPAP

Nature of the issue: Contrary to the guidelines, the RF was not released to the PIAs for distributing to the mature SHGs. It was kept at the DPAP office as a common fund and released to the groups recommended to the PIAs by the PD.

Implications: Because of this centralisation, the PIA/WDT have no say in handling this fund. Though there are mature groups which PIA/WDT feel deserve RFs, they can do nothing except submit applications to DPAP. But delays in processing these applications centrally make it a cumbersome procedure and in most cases the funds were not released during the entire project period.

Recommended action: The SHGs formed in the watershed should be federated and registered under the Mutually Aided Cooperative Societies (MACS). Then the RF can be released to the groups mainly for promoting resource based livelihoods.

12. Centralisation of Watershed Administration Budget at PIA level

Nature of the issue: The administration budget managed by the PIA included the share of administration costs at watershed level. But this was often not shared with the local watershed institutions. As a result, the WC/WA depended on the PIAs for expenses. But the PIA used the budget to cover the WDT's transport and expenses for conducting the meetings.

Implications: There was no money for meeting the administrative expenses of the local institutions.

Recommended action: The watershed share of the administration budget should be released to the WC, with proper checks and balances to prevent misuse and guidance to ensure the money is used transparently and accountably.

13. Political interference

Nature of the issue: As the watershed programme has money and power, local politicians tend to interfere in order to gain political mileage and benefits. The district and mandal level politicians try to unduly influence the PIAs to include their cadre in the office bearers of local institutions.

Implications: The PIA/WDT find it difficult to facilitate participatory approaches due to group clashes and factionalism provoked by political motives. Politically active individuals occupy the leadership positions.

Recommended action: This is happening due to poor understanding of the spirit and approaches of participatory watershed implementation. Hence, the political leaders of the district should also be given orientation on the programme. This should be done by DPAP centrally at district level. PIA/WDT should take the responsibility of sensitising the local (Mandal and watershed) level politicians. Strong SHGs and UGs can prevent political turmoil at the watershed level.

6.6 Post project sustainability

1. Lack of withdrawal strategy and procedures for PIAs

Nature of the issue: The PIAs have no strategy for empowering the watershed institutions to continue functioning after project withdrawal. There is also no process for withdrawing the PIAs from the watersheds after their allotted four years. This was never viewed as an important matter either by DPAP or the PIAs.

Implications: This results in chaos in the watersheds as projects end. The PIA/WDT stops going to the villages because the project has finished and the funds are exhausted. Suddenly the institutions are left to fend for themselves. The PIAs are also in dilemma since there are no guidelines for handing over project documents.

Recommended action: A withdrawal strategy is needed. The PIAs should from the beginning be conscious of this and develop watershed specific strategy for withdrawal. The DPAP should help PIAs to develop strategies through capacity building and developing operational guidelines in this regard.

2. Lack of operating procedures for utilisation of WDF

Nature of the issue: The community contributions towards works were deposited in the community watershed development fund (WDF). But there is no guidance for using this fund in the guidelines. Nor has the CRD/DPAP tried to develop such procedures. The money (about Rs.1 to 2 lakhs per watershed) is lying idle in the bank accounts.

Implications: The sustainability of watersheds depends on the sustainable use of the WDF so that it can be drawn on for repairs and maintenance of watershed structures. In some cases repairs were required, but due to lack of clarity and necessary instructions from PD for using the fund the money was not used. There was even more confusion once the project ended as the accounts were opened with one WDT member and the President of WA as co-signatories. After the completion of the project, the concerned WDT members left without clarifying who will operate it now.

Recommended action: Appropriate operational procedures have to be developed for the sustainable use of this fund. It could be given as a loan to the UGs, to be paid back to the WDF at the normal rate of interest. The farmers in the UGs could also be given loans for agricultural purposes and repayments could be collected at harvest. This would ensure the sustainable growth and use of WDF in each watershed.

3. Too narrow a focus for the watershed institutions

Nature of the issue: The institutions (WA, WC and UGs) formed under the watershed only had a purpose during project implementation. They became redundant after the project

¹⁴ Each WDT member looks after about 3-4 watersheds and also provides services in his faculty in all other watersheds of PIA

¹⁵ Check dams construction by Panchayat Raj department in the same watershed villages is quite common

ended, mainly because they did not have any other agenda to pursue, other than the watershed project.

Implications: These institutions die over time.

Recommended action: Procedures are required to build the necessary capacities and generate multiple agenda for the institutions to function and last beyond the watershed project. They should take up agricultural and allied subjects for improving the livelihoods of small and marginal farmers and resource poor families.

4. Lack of interaction with other CBOs

Nature of the issue: The watershed institutions and other natural resource based institutions like water user associations, forest protection committees etc., do not have any external institutional or programmatic linkages.

Implications: There is no interaction between all the NRM-based CBOs. Opportunities for integrated development of natural resources for sustainable livelihoods are therefore limited and the financial resources allocated under different programmes are not used optimally.

Recommended action: Policies are needed for integrating the watershed institutions with other village based CBOs.

5. Lack of maintenance mechanisms for soil conservation structures

Nature of the issue: There were no UGs in a strict sense in the watersheds. With most structures built by contractors, neighbouring farmers did not take any responsibility for maintaining them. For WHS located on a farmer's land, he/she assumed the maintenance responsibility. But where structures were located on common land, their maintenance was nobody's concern.

Implications: Only a minority of farmers benefited from WHS. Though groundwater recharge does benefit neighbouring farmers, they have no rights or responsibilities. On common land, a poor sense of ownership meant that pumping water from CDs was common, at the expense of the downstream recharge-dependent farmers. Lack of bunding means their water courses may soon get silted up through unabated soil erosion from adjacent lands. The WC has neither responsibility nor accountability for maintenance. And the lack of clarity on use of the WDF meant that minor repairs were neglected.

Recommended action: Procedures are required to develop sustainable maintenance mechanisms for WHS and soil conservation works through collective action.

6. Lack of use rights for resource poor families on common land

Nature of the issue: Usufruct rights to new biomass on common land were not formally allocated in favour of resource poor families. Plantations were protected by a paid watchman but after the project ended his job was discontinued. Now poles from the planted trees are being cut once again.

Implications: The investment in CPRs is threatened by a situation of open access, at the expense of the neediest families. The management of CPRs and their productivity is not assured.

Recommended action: The resource poor families who depend on CPRs should be given the responsibility for developing their productivity as well as maintaining them in a sustainable manner.

6.7 Project Management Issues

1. Absence of general guiding norms and procedures for programme management at the district level

Nature of the issue: There are few administrative rules and systems developed at district level, leaving those responsible for running the programme without any support or guidance. As a result every PD on taking over the office tries to start from square one by developing his/her own procedures.

Implications: New PDs find it difficult to function and take appropriate and timely decisions and actions. Often the decisions are contradictory to the systems developed or promoted by their predecessors. The procedures for monitoring and approvals also change, which is inconvenient for PIAs.

Recommended action: Appropriate norms and procedures have to be developed to guide officers in the DPAP office, but leaving them adequate flexibility for innovation where appropriate.

2. Lack of close supervision by WDT because of heavy workload

Nature of the issue: Operationalising the participatory approaches require very close facilitation and supervision by the facilitators in a project like watershed development. But each WDT is given 2-4 watersheds for facilitation. As the project related activities have to be carried out simultaneously in these watersheds, WDT members have overly heavy workloads.

Implications: WDTs can not concentrate adequately on rapport building and community organisation in all watersheds. They are forced to meet targets and hence planning and implementation are not done as visualised using a participatory approach. Most of their time is taken up by paperwork, filling in monitoring sheets etc.. Supervision of seasonal works becomes very difficult. This results in inadequate attention and supervision of processes involving the local communities. The involvement of the poor and women is ignored.

Recommended action: The WDT should have more members, at least one WDT member per two watersheds. Women members should be increased in the WDT to organise the village women and poor communities. This proves to be one of the key determinants for institutionalising the people's participation

3. Poor links with other developmental departments

Nature of the issue: The line departments are not involved in the watershed programme, though they are a good source of information on local natural resources and technical assistance. Local officials are not informed of project activities.

Implications: Misunderstandings occur among these departments, as there is lot of money available for the watershed programme. Local officials view the PIA/WDT with suspicion and non-cooperation is not uncommon. The funds available in these line departments are not used properly in the watershed villages.

Recommended action: Linkages need to be built between the local line departments during and after the watershed project, without giving them undue influence. This would be especially important post-project, when the local institutions could draw support from them for maintaining structures and to taking up production related activities in agriculture and allied subjects like horticulture, animal husbandry etc. The existing schemes run by these departments could complement the watershed projects for integrated development.

6.8 Conclusion

The watershed programme is being scaled up at a rapid rate in the District as well as elsewhere in the country as a popular programme. But hasty expansion and lack of adequate preparation will lead to a reduction in quality of performance. If the various problems that we outline here are not resolved, the projects are likely to be developed under a more or less top-down approach and the participatory approach will become irrelevant.

Before this scaling up proceeds, appropriate institutional reforms and capacity building are needed among the management agencies at the State and District levels, as described above. The PIAs should then be given a limited number of watersheds first; additional watersheds in adjoining areas can be added gradually based on the PIA's performance and the response of the community. This approach would enable PIAs to get hands-on experience in participatory approaches at a small scale initially before scaling up the programme based on the understanding and capacities built. This approach will go a long way to institutionalise participatory approaches in sustainable watershed management in the dryland areas.

Appendix A: Main Features of the New Watershed Guidelines 1994

In 1994, the Ministry of Rural Areas and Employment issued new 'Guidelines for Watershed Development' (GoI 1994) in respect of the schemes, projects and programmes within its mandate. The basic features of these guidelines are grouped into four categories: administrative, financial, institutional, planning and technical, which are presented below.

Administrative Arrangements

1. District rural development agencies (DRDAs) and *Zilla Parishads* have overall responsibility for programme planning and implementation in the district (para 29). *In AP, the government created a separate wing 'Drought Prone Area Programme (DPAP)' with a Project Director heading it.*
2. The DRDA (or Zilla Parishad) appoints a 'watershed-development advisory committee' with multi-source membership of officials and non-officials. This committee advises the DRDA/DPAP on the selection of project implementing agencies, watershed-development team members, watershed-development planning, training, community organising, etc. (para 30).
3. The DRDA/DPAP appoints project implementing agencies, which are responsible for appointment of the watershed development teams, recommending villages for watershed programmes, planning, implementing and reviewing of watershed programmes through village-level organisations, and maintenance of accounts of funds to be spent by the implementing agency and through watershed committees (para 31)
4. A watershed development team has a minimum of 4 members representing relevant disciplines such as agriculture, engineering, life sciences, animal husbandry and social work. The team shall work exclusively and full-time for the watershed programme. The team is to be located close to project villages (para 35)
5. In each village, the watershed association (WA) shall be registered under the Societies Registration Act. The association will appoint the watershed committee (WC), which will consist of representatives of user groups, self-help groups, Gram Panchayat and watershed development team (paras 36,37,80 and 81).
6. Each watershed committee shall have a secretary, who will be a paid employee of the watershed association and will be responsible for maintaining records and accounts of the watershed programme (para 38).

Financial Provisions

7. The funds will flow directly from the national and state governments to the DRDA or Zilla Parishad/DPAP. Depending upon the region, Rs. 3000-5000 of funds are allotted per hectare. The average and most common provision is Rs. 4000/ha. Each micro-watershed will consist of about 500 ha; at the rate of Rs. 4000/ha, this means about Rs 200,000 will be available. This should be spent over four years in the following manner:

Entry- point activities - 5 per cent;
Community organisation – 5 percent ;
Training programme – 5 percent ;
Administration of project implementing agency and watershed association - 10 percent;
Watershed works – 75 percent.

The DRDA or Zilla Parishad/DPAP will make 25 percent of the funds available to the implementing agency. It will make the remaining 75 per cent available directly to the watershed committee on the advice of the implementing agency, depending upon the capability of the watershed committee and the progress of implementation (para 41,49 and 51).

8. People's participation is to be assured through voluntary donations and contribution in terms of labour, raw materials, cash, etc., for developmental activities as well as for operation and maintenance.

The minimum norms prescribed are:

5 per cent for community works;

10 percent for work on private property. This will be 5 per cent in case of scheduled castes or tribes and persons identified as below the poverty line (para 5).

9. Maintenance fund against such contributions from the community, an equal amount in value will be withdrawn from the watershed works budget and deposited in a separate fund called Watershed development fund (WDF), for the future operations and maintenance of community assets (but not for private property). The users shall operate this fund themselves (para 25 and 84).

Planning Process

10. Participation of the village community and groups is central to the watershed programme. The guidelines therefore lay down a detailed process to be followed for ensuring participatory planning.

Participatory rural appraisals: The watershed development team has to conduct various participatory rural appraisal exercises to identify potential programmes and the concerned user groups (para 66)

Basics surveys: Collection of various details through surveys (engineering, socio- economic) by the watershed development team and volunteers (para 69).

11. This process will lead to the development of a watershed plan and will contain the details of various activities, a list of user groups, fund requirements and users' contributions. The watershed- development plan will be approved by the watershed association, and then submitted to the DRDA/DPAP through the project implementing agency (para 86).
12. This project plan will be prepared by the watershed development team in consultation with the watershed committee, according to the schedule of rates approved by the DRDA/DPAP (para 46).
13. Implementation starts after the plan is approved by the DRDA/DPAP. There is no mention of formal of formal technical approval (para 29).

Technical Parameters

14. The watershed approach gives significant benefits through various treatments intended to arrest soil erosion, restore soil fertility, and recharge groundwater by harvesting rainwater. According to the Guidelines, the planning unit has to cover all lands, irrespective of ownership, including forest, revenue, Panchayat and private lands (para 42).
15. Since the watershed development programme plans for development of all resources within the watershed, including land, water, vegetation, animals and human resources, in an integrated manner, an organisational structure at the village level is conceived, which has to be developed in a participatory way. The project-implementing agency has overall responsibility for the programme and for institutional arrangements at the village level. The agency, which will employ a multi-disciplinary team (WDT) to implement the watershed, programme in an integrated manner.
16. Each micro-watershed will be about 500ha (para 13). If a village is larger, it can be allotted and additional area, to be brought under the programme after the watershed association has shown its

capacity for promoting people's institutions, and for planning and implementing a watershed programme covering (particularly) the public lands.

17. Each project-implementing agency (PIA) is expected to handle 10 micro-watersheds, totaling 5000-6200ha (para 26).
18. Through a participatory process, the user groups and watershed committee, with the support of volunteers, will prepare a watershed development plan, which will have appropriate programme activities depending upon the agro-climatic situation of the watershed. Para 42 indicates the variety of activities that can be taken up under watershed programmes.
19. Works and activities should be low-cost, simple, easily operated and maintained (para 42). The watershed development plan should be based on local technical knowledge and solutions related to specific problems, supported by expert knowledge of the watershed team, district officers and research organisations. Around 80 per cent of works and activities should be based on local knowledge (para 20).

Source: Farrington et al (1999): Participatory watershed development: Challenges for the Twenty-First Century, Oxford University of Press, New Delhi.

Appendix B: Mechanisms for operationalising participatory approaches in watersheds

S. No.	Category	Mechanisms
1	Social	<ul style="list-style-type: none"> - Awareness building among community members about main features of the project - Commitment from community before selection of village - Organisation of community into a new institutional set up - Social auditing and transparency - Capacity building for participatory management of project
2	Technological	<ul style="list-style-type: none"> - Investment on indigenous as well as exogenous technologies for development of natural resource - Implementation of multiple technological options rather than a limited number of standardised solutions
3	Financial	<ul style="list-style-type: none"> - Direct funding to community - Contributory approach for developmental component
4	Managerial	<ul style="list-style-type: none"> - Application of PRA tools and techniques - Demand-driven approach for preparation of action plan - Decentralisation in technical sanctioning of action plan - Elimination of contractorship for implementation of works - Flexibility in modification of action plan during implementation phase

Source: MoRD common watershed guidelines 1994

Appendix C: Analysis of Project Interventions

Private cultivated land

Development of private cultivated land has received very little attention in both GO and NGO watersheds implemented under MoRD guidelines. Out of the total cultivated area of 544 ha and 306 ha existing in these two watersheds, only 2% and 1% of the areas respectively have been treated (Table 6). This is because the District Collector found malpractices in payments for bunds work (like strengthening and shaping of existing bunds to claim full payment on par with new bunds). He ordered all bunding to be stopped immediately throughout the district. The Project Director later re-allowed bunding, but with certain conditions to prevent malpractice.

Table 6: Development of private cultivated land in sample watersheds

S No	Particulars	Present status in different watersheds		
		Funding by MoRD		Funding by NGO
		GO	NGO	NGO
A.	Extent of private cultivated land Developed (%)	2	1	100
	Undeveloped (%)	98	99	0
	Total cultivated area (%)	100	100	100

Total cultivated area (ha)	544	306	214
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These elaborate and unfeasible conditions have discouraged many a PIA from proposing or entertaining farmers' requests for land development. Gradually, avoiding bunding works has become an accepted norm in the district and all PIAs have started submitting annual action plans which omit this component totally. Hence, private land development has not been taken up fully in MoRD watersheds, though there is a need and farmers are interested.

Since land development component is a core element of watershed strategy in drylands, this is generally the major activity in watershed projects. Instead of introducing appropriate monitoring mechanisms to prevent leakage, the Administration has chosen to avoid or complicate the issue. Due to this, all the landowners, especially small and marginal farmers who got the opportunity to develop their lands through public investment, are prevented from participating in the watershed programme. This has also resulted in skewed investment in developing watershed resources.

In case of N-N watershed, the total cultivated area of 214 ha included within the watershed boundary has been developed. All those farmers who agreed to abide by the conditions of the project have all got the opportunity to develop their lands and participated in project processes actively.

Table 7: Adoption of indigenous and exogenous technologies on private cultivated land

Type of technology	Present status in different watershed		
	Funding by MoRD		Funding by NGO
	GO	NGO	NGO
Number of technological options			
Indigenous (%)	100	100	100
Exogenous (%)	0	0	0
Total options (%)	100	100	100
Total options (No.)	1	3	8
Total watersheds (No.)	1	1	1

In all three watersheds, indigenous technologies have been adopted for developing private lands. However, the number of indigenous options was higher in N-N watershed, indicating farmers' involvement in technology identification and adoption. They are as high as 8 different types in N-N watershed and the number decreased in the order of 3 and 1 in G-N and G-G watersheds respectively, though the area developed is very less in them. In all three watersheds the main purpose of developing these lands was to improve productivity for growing food crops. Diversification to high value cash crops was not found to be a priority of farmers.. This indicates that local food needs are valued more highly among farmers than market-oriented cash crops. It also shows that there was focus on small and marginal farmers to improve their subsistence farming for sustainable livelihoods.

Table 8: Use of development fund for different components in watersheds

Components	Present status in different watershed		
	Funding by MoRD		Funding by NGO
	GO	NGO	NGO
Development of natural resource (%)			
Soil conservation measure (in private land)	1.5	3.6	67
Gully control structures	27	16	5
Water harvesting structures	58	62	14
Plantation of trees in common land	13	18	12

Plantation of horticulture in private land	0.5	0.4	*
Development of livelihoods (%)	0	0	2
Total amount (%)	100	100	100
Total amount per watersheds (Rs. in lakhs)	15.3	16.46	13.3
Total number of watersheds (No.)	1	1	1

Out of the Rs.13.3 lakhs invested in the development of N-N watershed, the lion's share of funds (about 67%) was used to implement soil conservation measures in the undulating, drylands belonging mostly to dalit farmers (Table 8). In G-G and G-N watersheds this represented only 1.5% and 3.6% of the Rs. 15.3 lakhs and 16.46 lakhs that were spent in these watersheds respectively.

Private fallow land

Private fallow lands have not been fully developed in G-G and G-N watersheds for the same reason as private cultivated land, while all such land (38ha) has been developed in N-N watershed (Table 9).

Table 9: Development of private fallow land in watersheds

Particulars	Present status in different watershed		
	Funding by MoRD		Funding by NGO
	GO	NGO	NGO
Extent of private fallow land Developed (%)	6	49	100
Undeveloped (%)	94	51	0
Total fallow area (%)	100	100	100
Total fallow area (ha)	96	65	38
Total watersheds (No.)	1	1	1

The purposes for which these private fallow lands are being put to use after treatment vary across the watersheds (Table 10). While all treated land is used for growing perennial trees in the G-G and G-N watersheds, in the N-N watershed tree plantation is taken up in 63% of private fallow land out of the total 38 ha developed. In the remaining area, 26% is being used for cultivation of annual crops and 11% is left for grazing by animals.

Table 10: Purpose for which private fallow land has been treated

Purpose	Present status in different watershed		
	Funding by MoRD		Funding by NGO
	GO	NGO	NGO
Cultivation of annual crops (%)	0	0	26
Plantation of perennial crops (%)	100	100	63
Livestock grazing (%)	0	0	11
Total fallow area (%)	100	100	100
Total fallow area developed	96	65	38
Total fallow area (ha)	96	65	38

Drainage courses in Private fallow and cultivated lands

Gully control works have been given high priority in all three watersheds, with 1,405 structures built across the three watersheds. In the MoRD-funded watersheds the gully control works were all built to control erosion in the gully bed. But in N-N watershed there were other reasons: 42% were built to control gully bed

erosion, 50% to cultivate crops of the bottom of the drainage course and the remaining 8% to protect existing crops from flooding at the request of adjacent landowners.

Table 11. Adoption of indigenous and exogenous technologies in drainage course

Type of technology	Present status in different watershed		
	Funding by MoRD		Funding by NGO
	GO	NGO	NGO
Number of technological options			
Indigenous (%)	0	0	100
Exogenous (%)	0	0	0
Total options (%)	100	100	100
Total options (No.)	1	3	8
Total watersheds (No.)	1	1	1

The percentages of the expenditures incurred for constructing the structures (Table 8) show that though the type of technological option and the number of structures constructed are more or less the same for the three watersheds, the design, size of the structure, need based locations, rates used for estimates/payments, cost sharing approach etc., have made the difference in utilisation pattern of development fund. For example, expenditure on gully control measures is as high as 27% in the G-G watershed because of the design, big size of the structures, Scheduled Standard Rates (SSR) for estimates/payments and the corruption.

In the G-N watershed gully control expenditure is 16% of the total budget. Those farmers who could afford to invest did the initial construction and were paid once the structures were measured. In the N-N watershed, out of the total Rs.13.3 lakhs spent, only about 5% has been used for gully control structures. Here they have taken a cost sharing approach; the concerned farmers have borne 25% of the total cost of constructing the gully control measures.

Common Land

Nearly 50% of the total area of G-G watershed is common land belonging to the Revenue Department. Of the total 454 ha of common land, about 26% of the land has been treated. The technology (continuous contour trenches) used was the same for all this land, and was externally derived rather than being indigenous. In the case of the N-N watershed, all 64 ha of common land have been treated using four different techniques (indigenous techniques accounted for 75% of the area treated). In the G-N watershed, about 70% of the total 43 ha of common land has been treated, using two different technological options, both of which were exogenous.

With regard to the management system, in the N-N watershed biomass regeneration and its protection have been achieved through constructing social fencing around the treated common land. In both G-G and G-N watersheds new plantations of forest trees have been created on the common land, using 13% and 18% of the total budget amounts of Rs. 15.3 lakhs and 16.46 lakhs respectively. The trees are protected by social fencing and a watchman in the G-N watershed and by a watchman only in the G-G watershed.

Usufruct rights to common land vary across the three watersheds. In the G-G watershed there is open access to biomass for the whole community despite the presence of a watchman. In the G-N watershed, ownership of the biomass may be given to the Panchayat, which may manage it through open auction. The resource poor families of SHGs are given usufruct rights to

the biomass of common land. In N-N watershed, social fencing (i.e., community voluntarily deciding to keep away) is strong for protecting the common lands and poor people are given usufruct rights.

Water harvesting structures in private and common lands

In the N-N watershed, 110 water-harvesting structures (WHS) were built, the most in all three watersheds. These structures were all indigenous, earthen structures comprising five different technological options. The G-G watershed has only 17 structures constructed, 70% of which are exogenous, cement structures. The remaining 30% are indigenous earthen structures comprising six different technological options. In the G-N watershed, 68 structures were built: 60% earth and 40% cement. Six different technological options were used, of which 67% are indigenous and 33% exogenous.

Though water harvesting structures have been constructed predominantly for harvesting rainwater to increase the ground water recharge, the main purposes of different structures vary depending upon the farmers' main needs (Table 12).

Table 12. Purpose for which WHS have been constructed in different watersheds

Purpose	Present status in different watershed		
	Funding by MoRD		Funding by NGO
	GO	NGO	NGO
Number of structures			
For providing irrigation to crops (%)	59	76	98
For providing drinking water to human beings and livestock (%)	18	24	2
For increasing / harvesting base flow in drainage course (%)	23	-	-
Total structures (%)	100	100	100
Total structures (No.)	17	68	110
Total watersheds (No.)	1	1	1

More than 50% of the total budget (Table 8) has been used in both the G-G and G-N watersheds for constructing water-harvesting structures. This figure is only 14% for the N-N watershed because of the cost sharing approach taken here.

Appendix D: Analysis of Government Orders/Circulars

The management agencies have coordinated the watershed programme by issuing circulars/orders. We analysed these to assess how these circulars/orders issued from time to time from the DPAP office have facilitated the field implementation of participatory watershed guidelines. The main findings of the analysis are the following:

(i.) Looking at the type and nature of the circulars issued, it appears that the programme was totally controlled by the PD. They reflected also the working pattern and change in the procedures from PD to PD.

(ii.) More than 90% of the circulars issued for the past four years were about the procedures (instructions) to be followed in finances, planning, implementation and other programme related matters. The remainder were of a general category like informing people about meetings, asking for information on village institutions (SHGs, UGs, and WC/WA), works etc.

(iii.) Circulars emphasising participation of poor and women were almost absent. Review formats had no scope for details about community mobilisation & organisation efforts by the PIA/WDT at watershed level. Qualitative process related aspects were never recognised as part of the progress review and targets to be achieved in participatory watershed development. Only quantitative information was sought. Some formats were repetitive and sought the same information in different ways.

(iv.) Many aspects were centralised like purchase of polythene covers, seed purchase, plants (horticulture) supply etc., at PD level, which are in fact the subjects of village institutions and PIA/WDT.

(v.) Through circulars certain components were imposed without paying attention to the watershed level actions plans and requirements, for example, CCT, diversion of entry point activity money for gully control works, use of machines, etc.