MYRADA

No.2, Service Road
Domlur Layout
BANGALORE 560 071. INDIA.
✆ : 5353166, 5354457, 5352028, 5358279
Fax : 091 - 80 - 5350982
E-mail : myrada@blr.vsnl.net.in
Website : http://www.myrada.org

Rural Management Systems Series
Paper - 24

A PARTICIPATORY APPROACH TO WATERSHED MANAGEMENT

June 1995

Paper prepared for presentation at the Symposium on Dry Zone Revitalisation and Development in Sri Lanka : April 23-30, 1995.

Mr.Seshadri Naidu, Project Officer, MYRADA Kadiri Integrated Participatory Development of Watersheds, Andhra Pradesh.

Mr. A.K. Shivaraja, Project Officer, MYRADA Kamasamudram Integrated Rural Development Project, Karnataka.

INTRODUCTION

This paper is not intended to focus on dry zone development technologies. It focuses on ***people-oriented issues*** and institutions in promoting and sustaining dryland development technologies and the problems of equitable access to the watersheds resources.

Around 1984, MYRADA began exploring the strategy of micro watershed management for the first time in collaboration with the Swiss Development Cooperation (SDC) and the Karnataka Govt. The initiative to involve MYRADA in this three-way intervention strategy was taken by SDC. MYRADA's role was to foster a process and intervene where required in this process through which families in a micro-watershed could plan, implement and sustain a programme which supported the regeneration of the entire micro- watershed, increased agricultural productivity, and provided adequate bio-mass to meet the needs of all the people with priority to the poor. In terms of people's institutions required to manage the watershed what has emerged is that the basis is still the affinity group which is small, homogeneous and voluntary and which begins by managing credit; there could be several such groups in one micro-watershed. These in turn appoint or elect representatives to form the Watershed Implementation and Management Committee which emerges as the people's main institution with which all outside intervenors have to relate whether Government or NGO. What has also emerged is that people are capable of planning and budgetting the treatment of their watershed, using Participatory Rural Appraisal Methods; they can also control and manage the implementation of this plan provided the structures are designed by them and located by consent. They also need the freedom to decide which of the treatment

activities should be given priority; in several cases they have borrowed funds from their credit groups to contribute towards the cost of gully plugs and silt traps on their lands which yield quick returns. (refer. Huthur case study)

Since the early eighties, MYRADA has been involved in reforestation of arid areas. Groups, communities, and individual farmers were encouraged to start small nurseries, large areas of revenue wastelands were reforested, programmes like insurance forestry on one-third of private agricultural drylands were supported to provide an income during periodic droughts. Towards the latter part of the eighties, MYRADA, shifted away from planting in arid areas to protection and regeneration; this is where groups had to take on the responsibility of protection, harvesting and distribution. Not only were revenue wastes regenerated, but also private fallows where people's groups entered into agreements with the owner which clarified mutual rights and responsibilities and ensured the sharing of benefits; as a result, fuel, fodder and other raw materials increased significantly.

After 1985, MYRADA moved away from supporting forestry as an isolated programme with the objectives of providing fruit, fuel and fodder, to integrating forestry in a watershed approach where trees, besides providing fuel, fruit and fodder also played an important part in controlling soil erosion and water run-off as well as in providing biomass, thus resulting in increased productivity of food and cash crops as well as in reducing their vulnerability to periods of drought during the agricultural season.

This shift in MYRADA's strategy demanded a far greater involvement of people not as individuals but as groups who could manage and sustain the resources which had regenerated as a result of interventions.

Early in the 1990s MYRADA entered into areas where forests existed, like the Western Ghats, but where degradation was evident in various degrees mainly around villages. The Western Ghats Environmental Project in collaboration with the Forest Department was launched in 1992. MYRADA's role was to expose Forest Department personnel to experiences and strategies of Joint Forestry Management, to help them and the people absorb and use participatory methods and strategies in planning, budgeting and implementing forestry programmes as well as the community organizational and management skills needed to sustain Joint Forestry Committees and to initiate and carry through micro planning at each village which interacted with the forest. The objective of these exercises was to develop a Joint Forestry Plan which would ensure people's livelihood, protect core areas of the forest from pressures, and rivers and streams from pollution. Overall the objective was to improve the tree cover while supporting the growth of appropriate people's institutions to plan, manage and sustain the joint forestry management plan which in turn contributed towards a sustainable livelihood support system.

The present paper draws from the experiences of only two of MYRADA's projects: Kamasamudram in Kolar District of Karnataka, and Kadiri in Ananthapur District of Andhra Pradesh, since the two Project Officers are present at this Seminar. Other major projects where watershed management strategies have developed and made significant progress are Gulbarga, Huthur, Holalkere, and Talavadi. A few illustrations from Gulbarga have been incorporated into this paper.

CONTEXTUAL BACKGROUND

Both Projects are located in semi-arid areas. Kadiri receives an annual rainfall of around 500 mm. and Kamasamudram around 650 mm. The added problem is that most of the rainfall is received within a short period. The rainy season is also characterized by long dry spells that occur unpredictably and cause a sharp drop in yields. One of our major concerns in watershed management is to increase percolation so that the plants are able to cope with such dry spells.

Low returns from agriculture characterize both locations. Though most people are engaged in agriculture, land holdings are small and range from 0.2 ha to 1.2 ha on average. Inappropriate agricultural practices on the undulating lands have increased run off and reduced soil fertility. Finger millet and groundnut are the main crops. The few farmers that have access to irrigation grow paddy and mulberry. The Kamasamudram area has a number of small natural tanks but most have silted and water management systems are poor. Kadiri has several small seasonal streams that can be managed to the advantage of the people, but here again, there has been no initiative taken.

Erosion of the natural resource base is also characteristic of both locations. As already mentioned above the soils are depleted, much of the limited water is lost in run-off and biomass cover, even on forest lands, is negligible.

MYRADA, which entered the Kadiri area at the behest of the Government to do a rehabilitation project for landless people and released bonded labourers, and the Kamasamudram area to initiate anti-poverty programmes, soon realized that the focus had to broaden to include watershed development for sustainable increases in productivity.

The Target Population : Resource-poor farmers are MYRADA's chief focus. However in an area (watershed) development programme where land, water, and vegetation are being targeted in an integrated basis, the larger farmers cannot be excluded, just as the landless people who draw other forms of sustenance from the watershed (e.g. fodder, fuelwood) also cannot be excluded. Therefore, for purposes of watershed development, all persons owning and / or using any or all of the resources of the watershed have to be involved. MYRADA, however, does not invest significantly on the lands of large farmers.

In this context, MYRADA started with just two major objectives, both of which had to be achieved on a sustainable basis and, therefore, required the full participation of the people:

Objective 1 : Make water walk, from ridge to valley. This would result in controlling erosion and enabling greater percolation.

Objective 2 : Bring soil back to life. This would result in biomass production and increase in soil productivity.

Problem Statement : The problems we encountered were many. Determined to seek and obtain the participation of the people in all aspects of the programme (the benefits of which were so obvious to us but perhaps not equally so to the people concerned) we were faced with a complicated set of circumstances. Very briefly stated, they were as follows:

1. Lack of Organisation : There were no ready membership organisations in the villages, working on common programmes. So where to begin?

   Whom to address?

   How to get everyone involved?

2. Lack of Finance : All development measures require financial inputs. People either did not have the resources or did not see the need to make investments where gains were not immediately perceived.

3. Low adoption of dryland technologies : The farmers know best how their lands have to be nurtured. Nevertheless, we discovered that the majority had made remarkably little effort to nurture their lands. Farming agricultural lands seemed to be more of a habit than an enterprise. Lack of adequate means may have been a major problem.
   However, our own experiences later showed us that another major reason why land and water manage-ment technologies had not been adopted was because people had never been consulted or involved in planning, budgetting and implementing these measures.

4. Low motivation : Perhaps because the rains cheated them so often, perhaps because they lacked the means

and the know how to initiate regenerative action against a progressive decline of agricultural income, our initial discussions were received with little enthusiasm. Even where discussions were lively and informative, they did not result in much voluntary action.

On the other hand, we discovered that many small and marginal farmers actually found it more worthwhile to either let their lands lie fallow or even sell it and hire themselves out as casual labourers.

5. Dependency, and high expectation from others : People were used to believing that their problems must be addressed and dealt with fully by others, mainly the Government. They did not see that they could work either collectively or individually for their own betterment.

6. Insufficient technological knowledge : Practices handed down from generations continued to be followed but not improved upon in the wake of new knowledge (e.g. composting and compost use). With the exception of new seed varieties sold by private companies, other advancements in agricultural knowledge did not often reach the farmers.

7. The problem of common resource management and equitable sharing benefits : Common lands were used by all to graze livestock, gather firewood, etc. The question of sharing benefits would arise if these properties were being managed to begin with. But upto now, there were no systems of management and no measures to replenish the depleting resources. Later in the programme we discovered that this was always going to be a difficult issue to tackle. Everybody wanted access to use common resources but who would take the responsibility to develop and manage common resources?

8. Lack of Departmental (i.e. Governmental) involvement where required : In some of the watersheds, significant tracts of land are owned by the Government (e.g. the Forest Department, the Revenue Department, etc.) Securing Departmental cooperation — which was particularly important if such lands were in the upper reaches — was, and

continues to be, very difficult.

9. Securing the cooperation of all farmers : This again was difficult. In our analysis of watershed populations we discovered that there were farmers who lived within the watershed but owned land outside it; there were those who lived outside but owned land within the watershed area; there were those whose lands fell in two separate micro watersheds (requiring their presence in two watershed associations); there were landless people who used the common resources of the area, etc. Absentee landlords had to be tracked down and involved; big farmers who had other business interests and were not particularly dependent on agricultural income had to be persuaded to cooperate; seasonal migrants had to be motivated to take interest in the programme; farmers who were unwilling to be a part of any credit / watershed association had to be separately convinced. And occasionally, a farmer would refuse to get involved for no particular reason other than that he or she did not feel like getting involved.

10. Inadequate efforts to involve women in planning & management : Not deliberately but by default, women were left out of discussions and meetings and their absence had to be pointed out before it began to be noticed.

11. The question of landless people and their livelihoods : In a land-based programme such as water-shed development it is often forgotten that the landless poor are also dependent on the area's resources and need to be involved in the programme and benefit from it. This fact was often overlooked or ignored.

Before going on to solution strategies used to overcome the above problems we present a brief statement of the activities undertaken in Kadiri and Kamasamudram in the last 4 - 5 years :

Sl. No.	Activities	Kadiri	Kamasamudram
1.	Physical measures for erosion control (earthen bunds, boulder bunds, gully	Yes	Yes

Sl. No.	Activities	Kadiri	Kamasamudram
	plugs, silt traps etc.)		
2.	Surface water harvesting and storage for percolation and protective irrigation (farm ponds, weirs, tank desilting, etc.)	Yes	Yes
3.	Afforestation (on private and public wastelands)	Yes	Yes
4.	Protection of existing forest vegetation to promote regeneration (i.e. natural forest regeneration)	Yes	Yes
5.	Protection of all watershed vegetation (stump protection)	Yes	Yes
6.	Fodder development	Yes	Yes
7.	Bio-mass production (green manure)	Yes	Yes
8.	Simple Composting	Yes	Yes
9.	Fuelwood production	Yes	Yes
10.	Horticulture promotion	Yes	Yes
11.	Fisheries promotion (in existing and newly created water bodies)	Yes	Yes
12.	Bio-gas promotion	Not taken up	Yes
13.	Promotion of fuel efficient and smokeless ovens	Yes	Yes
14.	Promotion of solar cookers	Yes. In a very small way	Not taken up
15.	Training programmes and exposure visits (for staff and farmers)	Yes	Yes
16.	Training & using farmer instructors from among the watershed farmers	Yes, to some extent	Yes
17.	Credit Management/ Self Help Groups formed	Yes	Yes
18.	Watershed Associations formed (inclusive of credit management group members & others)	Not taken up (See next point)	Yes
19.	Task related committees formed (from among credit management group members)	Yes	Not taken up (See previous point)

The impact of these efforts has given us enough reason to believe that we were right in stressing on a participatory approach. And this brings us to the solution strategies we used to address the problems mentioned earlier.

Organising people : We used the strategy of motivating resource-poor farmers to form savings and credit management groups. There are now 53 such groups in Kadiri with a total common fund of Rs.789,800/-. In Kamasamudram, there are 162 groups and their total common fund is Rs.5,151,215/-. Watershed development activities were taken up for discussion at their credit group meetings. This also became the forum for initial planning and budgeting. In Kadiri these groups have continued to serve adequately for planning, executing, and managing all watershed activities, and task-related sub-committees were formed for various works. In Kamasamudram, there was a gradual realisation of the need to integrate other watershed users who were not in the credit groups. This has led to the formation of Watershed Associations.

Motivating People : Helping them form groups and establishing a credit management system helped. This was followed up with intensive awareness building efforts, training programmes, and exposure visits to other successful projects. MYRADA also assisted the villages in other needbased programmes such as health care, veterinary care, drinking water, working capital loans (through credit groups) for income generating programmes, etc., The people were also assured of MYRADA's continuous presence and support for watershed development activities.

One strategically important effort was that MYRADA did not go to the people with a pre-formulated, prescribed package of activities; rather, we facilitated many participatory discussions, provided a lot of explanations, incorporated many of the people's own suggestions and traditional practices into the action plan, and enabled the people to see their watershed holistically (this is why we choose to work in micro watersheds that can later integrate into mini and macro-watersheds.)

Reducing Dependency : We can claim to have reduced but not entirely eliminated dependency, particularly financial dependency. The following actions have helped in this process:

- Participatory analysis, planning, budgeting, implementation, and management of all activities.
- Full involvement of people in decision making and quality control.
- Detailed analysis of available resources and prioritization in resource allocation.
- Inculcating cost consciousness due to participatory analysis.

- Fund management by the people, including making all payments (financial assistance from MYRADA goes to the group account operated by selected group members in rotation. Payments are made by the group after verifying the quantity and quality of work done).

- Encouraging atleast 30% contribution from the people for works done on their lands (this has worked with greater success in Kamasamudram than in Kadiri).

- Periodic participatory evaluations.

Increasing People's Knowledge of Regenerative Technologies :
External science-based information and technical guidance was mobilized from several sources:

a) MYRADA employs technically qualified staff who are available to the people at all times.

b) MYRADA seeks and obtains expert advice from Agriculture Universities and scientists whenever required, on a consultancy basis.

c) In Kamasamudram, MYRADA has entered into a formal collaboration with the Philippine-based International Institute of Rural Reconstruction whose scientists visit the project site regularly - at six monthly intervals - and provide technical guidance and management advice, including advice related to documentation of project activities.

The information thus obtained is not only used in discussions but also integrated into farmers' training programmes.

Financing dry zone development programmes : To a large extent, the financial support has come from MYRADA which, in turn, mobilises funds both from the government and from external aid agencies. However, local contributions are also insisted upon, to the extent possible and this has taken several forms:

- Work on common lands & large structures such as weirs : Mostly grant funding. People's contribution is in the form of free labour for approximately one day in a week. All benefitting families have to arrange for free labour as agreed in the group / watershed association meeting.

H Work on individual lands : a. The concerned families have to contribute free labour or work at lower wage rates for a specified number of days.

b. An agreed amount is paid by the concerned families as financial contribution. This may either be pre-financed by the project and treated as a loan, or the families may straight away borrow from their groups to pay for a part of the works.

Often, the project finances the group on a grant basis but the group advances (a part of) the money to farmers on a loan basis. The recovered amount is kept in a separate fund and used to undertake maintenance and repair works.

Increasing the rate of adoption of technologies : All the above factors have succeeded in promoting the adoption rate of dry zone management technologies. However, the financial factor is the most crucial factor in translating motivation into action. Willing and motivated farmers are still constrained by their inability to make the necessary investments on the full basket of technologies necessary for dryland management. An equally crucial factor is the control of finances. Full participation is possible only when the farmers understand how the various parts of the watershed interact with one another, the role of the different technologies proposed, and when they are involved in planning as well as budgeting for the proposed works, and not just in their execution.

A few other important observations on the question of technology adoption have been made towards the end of this paper.

Management of Common resources and equitable sharing of benefits continue to pose the most difficult management problems; MYRADA has experienced as many failures as successes. Large communities, heterogeneous populations, and the presence of powerful farmers with vested interests make it very difficult to arrive at decisions that are acceptable to all. Projects planned and executed entirely by the people have shown a better rate of success. However, MYRADA's experience has been that each situation has to be separately dealt with. The most obvious problems (e.g. controlling grazing on common lands) have to be addressed and resolved even before any work is begun or any investment is made. The decisions on how to manage have to be arrived at by the people themselves, and responsibilities have to be clearly defined and allocated, with penalties for violation.

Securing Government involvement : In Kadiri and Kamasamudram, these problems have not been solved. Elsewhere within MYRADA (e.g. PIDOW Gulbarga) formal agreements have been made with the Government prior to the commencement of project activities, and this has definitely helped to address land-management issues that crop up from time to time.

Involving Women : By making it compulsory for credit groups / watershed associations to include the representation of women, MYRADA has successfully created conditions for women to be present at meetings where decisions are being taken and responsibilities are being discussed. However, partly because most of the land is owned by men, and partly because men are generally expected to do outdoor work, conduct land-related negotiations, and engage in financial transactions, the role of women has still not developed to the ideal extent. (Recently an effort has been made in Gulbarga to implement activities in one watershed entirely through women, including handling finances, making purchases, and engaging and paying labourers for work to be done. This effort has not yet been evaluated. It is interesting to note that the initiative for this came from the women themselves, when they saw that the men's groups were

generating surpluses out of their fund allocations for watershed works simply by using management systems that were locally more appropriate.)

Livelihoods for landless people : MYRADA has been sensitive to the problems of the landless poor. However, in watershed development projects it is a fact that the majority of the benefits go to landowners. MYRADA's efforts upto now with regard to the landless families have been:

∴ To ensure that they are members of savings and credit groups, which gives them access to credit to meet production and consumption needs.

∴ To protect their access to common resources such as grazing lands, and to ensure that they have a share in the benefits if any, accruing from common resources.

∴ To create wage earning opportunities by undertaking watershed works.

∴ To create alternate, non-landbased income earning opportunities for them (e.g. petty businesses, skill training, etc.), and give priority to the landless in non-watershed activities.

∴ To make efforts to secure land for the landless where surplus lands - government and/or private - are available, and help them develop these lands for productive use.

To conclude are a few principles on which MYRADA now bases its watershed programmes:

1. The micro-watershed approach : People must be able to see their watershed, appreciate how the different parts of a watershed interact with one another, and understand how the different activities impact on one another to increase the life and productivity of the area as a whole.

2. Budgeting for enough time and manpower : Participatory processes are time consuming and labour intensive; nevertheless, they are the only means to ensure sustainability. Meeting people at a time of their convenience (generally after 7.30 p.m.), organizing them into credit groups and watershed associations, interacting with them on a daily basis, conducting training programmes and exposure visits, being present at the times when conflicts have to be addressed - have all to find a place in the management plan. A team of one technical staff and one community organizer can manage approximately 700 acres of land and around 5 to 7 credit groups, provided they work together as a team.

3. There is no shortcut to consultations with the people and participatory planning, implementation conflict-resolutions, monitoring, and evaluation. Participatory Rural Appraisal (PRA) techniques are effective in getting this process started, but are by no means the end of the process. PRA techniques have to be followed up with building and strengthening grassroot level institutions that have a major role to play in watershed development (e.g. credit groups / watershed associations).

4. MYRADA has found the Credit Management Group to be a sound base and basic building block on which to develop watershed management programmes.

5. Keeping aside some provision for other needbased programmes: Poor people who are lacking in other basic requirements such as drinking water, health facilities, timely credit, etc., will involve in watershed activities much better if such other basic concerns are addressed on priority. It is necessary to make budgetary provisions for such eventualities.

6. The question of acceptance and adoption of technologies requires a separate and special mention. In a recent exchange of experiences at MYRADA's Gulbarga Project it was possible to isolate some of the most crucial issues that have to be addressed with regard to the promotion of physical structures relating to dryland development (since they generally constitute the major and most expensive part of the basket of technologies) and ensuring farmer participation with regard to the same:

    a. Awareness of the need among farmers for treatment measures to manage water and soil.

    b. The types of measures to control soil erosion and water run-off.

    c. The actual design of the structures.

    d. The skills required to construct the structures.

    e. The materials required to construct the structures.

    f. The cost of the structures.

All of the above have to be understood by the farmers, acceptable to them, and affordable in terms of maintenance costs.

Farmers are also inventors, experimenters, builders, and managers. They hold opinions and also have a wealth of practical experience. If this fact is forgotten, then the Best Practice Manual on Dry zone Development can never be written.

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[1] **Note :** Illustrations for all the above mentioned issues and experiences are available but not included in this paper.