

## Context Paper Two

# Participatory Watershed Management (WM) and Key Elements of Its Processes for Planning, Implementation, Monitoring and Evaluation

### Introduction

This paper first defines a watershed with special reference to uplands, and it then defines participatory watershed management. A discussion is made about conventional and modern thinking on participatory watershed management. Since participatory watershed management is based on a process rather than on targets, the key elements of the participatory processes for integrated watershed management are described. In addition to natural resource management activities for overall human development, these elements of the participatory process must be planned, monitored, and evaluated in a participatory manner in order for successful integrated watershed rehabilitation to occur.

### Upland Watersheds

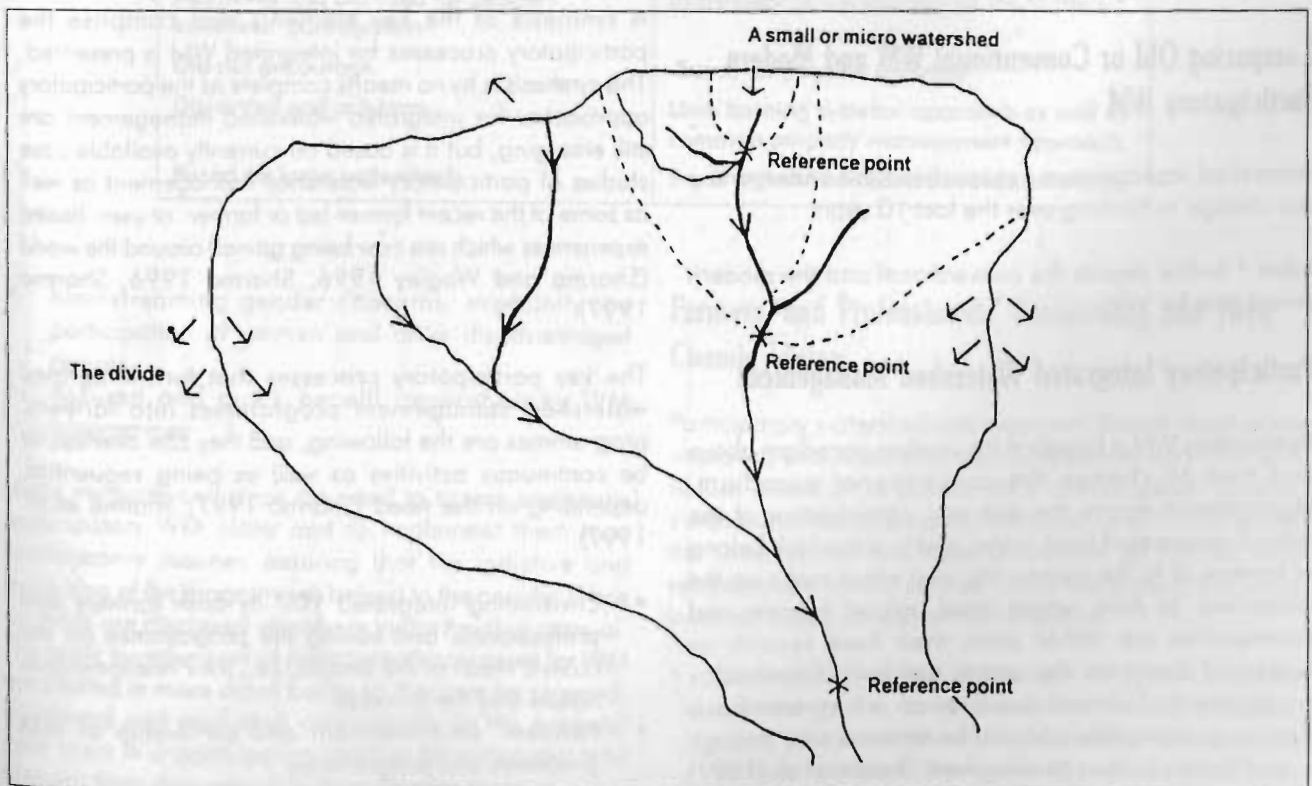
The dictionary meaning of *watershed* is the boundary which divides an area draining separately; *catchment*

means the area itself which drains separately in a natural manner. However, the words *watershed* and *catchment*, as well as *drainage basin* or *river basin*, are commonly used interchangeably. Thus, a hydrologic unit or area draining separately is called a *watershed*. The extent depends on its point of reference so that an area draining to a particular point becomes the upstream watershed of that point.

*Upland watershed* generally refers to the upper sloping areas of a watershed which often are mountainous or rainfed. While large-scale irrigation in these upper areas is often not feasible, water harvesting or small local irrigation schemes may be possible. Mountain specificities apply to the mountain watersheds.

### Integrated Watershed Management

Watershed management may mean different things to different people, but "sustainable participatory and





integrated watershed management" (WM) deals with the use and conservation of natural resources to meet the needs of land users. Thus, modern watershed management is 'people-friendly' and 'process-based' rather than physical target-oriented (as was the case in many past government programmes), so that it fits into the pace of life of farmers and not that of donors, governments, or non-government organizations.

Integrated WM could, in the widest sense, include everything in a watershed - both human and non-human. In practice, however, the scope of WM is location-specific and geared to solving the problems and needs of the local people. In a given watershed, the activities to be undertaken have the following common primary aims:

- natural resource management (NRM) for human development within a target group,
- poverty alleviation through capital and income generation, and
- distributional equity among men, women, and all social groups, classes, and castes.

Prioritising integrated WM activities, therefore, is carried out locally through any suitable mechanisms of farmers' groups or organizations capable of expressing and representing farmers at the grassroots' level. For successful WM in any situation, a participatory and integrated multi-disciplinary and multi-sectoral approach is essential. Gender issues, the needs of disadvantaged groups, and distributional equity should be considered and the ownership of the people ensured. Good communication skills at all levels are crucial to achieve the aims of participatory integrated WM.

## Comparing Old or Conventional WM and Modern Participatory WM

Watershed management approaches have undergone a sea change in thinking over the last 10 years.

Table 1 below depicts the conventional and the modern paradigms for WM.

## Participatory Integrated Watershed Management

Participatory WM is based on the modern paradigm above and tries to change the conventional paradigm. Management means the use and conservation of the natural resources of land, water, and forests which belong to farmers or to the community, and which make up the watershed. In Asia, where most upland farmers and communities are rather poor, their food security or livelihood becomes the prime concern. Continuous improvement of natural resources on a long-term basis signifies sustainability and can be attained only through overall holistic human development. Sharma et al. (1997)

defines participatory integrated WM or sustainable WM as follows.

*Utilisation and conservation of land, water, and forest resources at farm household and community (or given watershed) level for continuously improved livelihood and human development.*

Thus, participatory watershed management (WM) consists of farmers' and community's natural resource management for poverty alleviation and farmers' overall development. Since farmers and other land users are the main stakeholders in watershed management, they themselves must take charge of the processes for development of watershed resources, if it is to succeed. A farmer-led approach is also needed to achieve their empowerment and self-reliance. It forces all technical assistance agents (government or non-government researchers, extensionists, trainers) to become facilitators of the participatory processes for integrated WM rather than agents of transfer of technology for WM.

## Participatory Processes in Watershed Management

New thinking is required to achieve the goals of participatory watershed management as defined above (Sharma 1997, Sharma et al. 1997, Sharma and Krosschell 1997). Farmers must become equal partners in development; their local knowledge and capability for continued experimentation and innovation need to be recognised. Such an approach lays the basic foundations of participatory or, more specifically, farmer-led integrated WM.

A synthesis of the key elements that comprise the participatory processes for integrated WM is presented. This synthesis is by no means complete as the participatory approaches for integrated watershed management are still emerging, but it is based on currently available case studies of participatory watershed management as well as some of the recent farmer-led or farmer- or user- based experiences which are now being gained around the world (Sharma and Wagley 1996, Sharma 1996, Sharma 1997).

The key participatory processes that turn integrated watershed management programmes into farmers' programmes are the following, and they can overlap, or be continuous activities as well as being sequential, depending on the need (Sharma 1997; Sharma et al. 1997):

- Envisioning integrated WM by both farmers and professionals and basing the programmes on the cosmic vision of the people, i.e., their relationship to nature and the universe
- Farmers' empowerment and ownership of WM processes and programmes
- Land use titling/tenure to the land users



**Table 1: Comparison of Conventional and Modern Participatory WM Approaches**

<b>Conventional approach</b>	<b>Modern approach</b>
Executing agency-driven	Participatory, farmer-driven
Target-based	Participatory process-based
Aimed only at soil, water and forest conservation	Aimed at poverty alleviation and overall human development through NRM
Transfer of Technology (TOT) extension method	Farmers' first approach married to TOT
Extensionist and scientist-led	Farmer-led
Based on imported technology and ideas	Based on indigenous technology, traditions, and culture and cosmic vision of the local people/farmers/land users
Top-down planning, monitoring and evaluation (M & E)	Participatory planning, M & E
Land use based on land capability	Land use based on land suitability and people's needs/preferences
Did not consider structural issues, e.g., land ownership, farmers' organization, etc.	Land use titling and farmers' organization at forefront of participatory WM
Aimed at long-term benefits	Aimed at quick net benefit generation (economic, environmental, and social as well as political)
Empowered the agents of technology transfer, i.e., officials	Aimed at people's empowerment
Attended to selected generally better-off farmers	Aimed at marginal, small and poor farmers with special emphasis on equity between genders and among disadvantaged classes
Tended to be taken over by single sectors/departments	Multi-sectoral and multi-disciplinary
Engg. structures prioritised	Biological, agro-forestry methods prioritised
Incentives and aid used for people's initiatives' participation	Investment at the disposal of the farmers
Did not encourage	Based on people's initiative
Disjointed and arbitrary	Uses farming systems' approach as well as common property management approach
Based on large watersheds	Small watershed-based people's initiatives

- Mainstreaming gender concerns, especially the participation of women and other disadvantaged groups
- Assured and quick benefit generation by WM programmes

Many methods and steps are used to assess and make participatory WM plans and to implement them in a participatory manner, assuring that the initiative and ownership of the programmes belong to the people. These methods are discussed elsewhere in this training manual. The basic key elements of participatory processes for WM are treated in more detail below so they can be planned, monitored and evaluated continuously by the farmers/land users in a participatory manner for successful WM through their own overall human development.

### **Farmers' and Professionals' Envisioning and Their Cosmic Vision**

Participatory watershed management should result in an improved livelihood and social lifestyle in harmony with nature based on a community's cosmic vision. Cosmic vision is defined as people's relationship with nature and the universe. An envisioning exercise by farmers and professionals can be carried out in many ways. The steps involved could consist of the following.

- Understanding the philosophy of life of a given community, i.e., cultural practices, beliefs customs, rules, cosmic beliefs and relationships, as well as the farmers' vision of development in relation to modern integrated WM



- Finding the best-fitting dominant cultural slot in the lifestyle of a particular watershed community in which to base the participatory integrated WM programmes
- Searching for common as well as special moral values of the particular community to be used as the entry point for farmers' WM programmes
- If moral decay and degradation is found within the community or among professionals, a process of moral revitalisation and regeneration should be started by identifying appropriate leaders who could be religious persons, local community leaders, or development practitioners. Emphasis should be laid on reviving old traditions of caring and sharing to revitalise and strengthen the collective and community spirit which can further be used for participatory integrated WM.
- As most Asian cultures emphasise moral duties at an appropriate stage, a call to the people at large can be given for the common good and respect of nature and for integrated WM for their own welfare.
- Learn from examples of success and failure, both of the concerned community and of others, in order to build on success.
- Extension agents/technocrats and village/community leaders may be sent for a spiritual retreat to inculcate moral virtues and a righteous attitude in their day-to-day dealings and behaviour.
- After careful examination and assessment of the community, a need-based curriculum for training of trainers should be developed for both professionals and farmers.

A particular community's dominant philosophy should be used to spread the message, while moral inputs could be added to ensure that moral knowledge and practice combine to make the community healthier and happier. Once the people attain a certain level of awareness, some sort of voluntary code of conduct regarding community and society could be established and a structure (e.g., farmers' organizations) created to sustain it. If a social organization already exists, it could be used for this purpose.

Generally, envisioning is a continuous activity which should not be used in isolation of the objectives of integrated and participatory WM. Neither should envisioning be misunderstood as religious conversion or abstract preaching. Successful WM requires that the facilitators/trainers themselves demonstrate high moral and ethical standards in order to impress upon local people the virtue of fostering beneficial moral practices. The envisioning process should result in farmers' or community's and professionals' awakening and mobilisation for their own integrated watershed management. More detailed exposure to the participatory planning and M & E of envisioning is covered elsewhere (Singh 1997) in this manual.

## Farmers' Empowerment and Ownership

Empowering farmers and institutionalising their ownership of integrated WM programmes and processes require that

they have their full constitutional rights (individually or as a group) and are facilitated to use them. Empowerment is linked to control over resources, which in turn relates to ownership. Land ownership thus becomes an important aspect facilitating people's participation. Different types of land ownership (public, private, and community lands; tenure-ship, e.g., absentee landlords, etc) allow differently for empowerment and therefore require different approaches to management. Giving rights to people to use resources is an important means to empowerment.

Lack of mission and vision within implementing agencies as well as among farmers can be a serious constraint. All concerned must have the attitude of enabling the empowering process to help farmers handle pressures from vested interests better. Farmers' group formation and networking into federations helps institutionalise the empowerment process. It requires an integrated and well-coordinated approach at field- and community-levels by all implementing agencies. Experience has shown that lack of investment is not necessarily the problem. However, improving farmers' receiving mechanisms with proper checks and balances and avoiding the abuse of funds are key in farmers' ownership of investments. Resources from local banks/district programmes and other local resources must be made available for integrated WM programmes.

The strategy for farmer ownership of the WM programme therefore requires facilitation of the empowerment process (not imposition), guaranteed long-term ownership or user rights in land and other resources to the farmers/people, changes in attitude of government departments from target-oriented to process-oriented watershed development programmes, farmers' capacity building, investments made available to farmers (both public and private), and, based on this new vision, technical support. There should be a meeting place for the exchange of ideas between farmers and government officials. This requires GO/NGO technical agents with persistence, commitment, innovation, dedication, and better communication skills to assist farmers in alternative institution building. Such planning and implementation would be based on farmers' traditional processes and, as far as possible, on indigenous technologies. Subsidies, if any, should be replaced by investments if the WM programmes are to sustain themselves.

The following three aspects are very important for empowerment of the farmers/land users of a watershed.

- The right to organize, i.e., Farmers' organization
- Right to use/own land and other resources, i.e., land use titling
- Equity among all sections of society, especially relating to gender concerns and disadvantaged groups, i.e., mainstreaming gender and other social concerns

The first aspect above is further explained below and the other two aspects will subsequently be discussed as key elements in the process.



## Farmers' Organization Network-building

Various models of farmers' organization (FO) are seen in Asia today. This includes farmers' traditional (formal or informal) institutions, e.g., successful village-level panchayat organizations in India and official men's and women's farmers' organizations in Sri Lanka, Vietnam, and China. There are also users' groups for community forestry and conservation committees for soil conservation in Nepal, farmers' associations in many Latin American countries, and farmers' saving and credit unions elsewhere.

Likewise, many efforts are being organized for people's participation in WM/NRM in the Asian region. Most recent efforts consist of some type of farmers' group formation or village-level committees representing either an entire village or only certain beneficiaries, e.g., in the case of users' groups in Nepal. With these experiences as a basis, the FARM programme in Nepal and elsewhere is successfully trying farmers' organization-building for WM by networking homogenous farmers' groups in a small watershed or village (Sharma 1995, Sharma et al. 1996). This is the initial effort to network farmers' groups into a higher level organization. Other methods of FO building, e.g., traditional village organizations, farmers associations or farmers' credit unions, farmers' associations, etc., should be encouraged if found more convenient.

Minimum funding needs are to be met as loans (not incentives or subsidies) from a farmer-managed savings and loans' rotating fund or from other investments available through established channels, e.g., agricultural credit banks. The farmers themselves decide on the management of these funds according to rules developed during the constitution-making process of the FO. The whole process empowers the farmers, strengthens the farmers' organization, and their institutional capabilities.

## Land Use Titling/Tenure

Control over land resources by both men and women has been amply demonstrated by many case studies of successful participatory WM programmes to be a prerequisite to farmers' participation in NRM/WM programmes (Sharma and Wagley (eds) 1996, Sharma 1996). Land tenure systems vary in different countries. Individual governments in the region have been or are now experimenting with various approaches to land use titling with limited success. Good examples are available, e.g., community forestry in Nepal (Kanel 1997), CARL in the Philippines (Escano 1997), the family contract system in China (Deyi 1995), etc. Although different cultural traditions, beliefs, and political environments preclude there being a universal model for addressing the issue of land use titling/tenure for all the countries in Asia and the Pacific, the following considerations must serve as the basic foundation for exploring how to provide various

types of land rights, ranging from long-term leases to full ownership, either individually or communally.

- Security of land title/tenure, whether on a lease-basis or complete ownership, if long-term plans for improving and protecting the land are to be implemented.
- Support services of the government, such as technical assistance and capital inputs for development, should be clearly defined for successful land allocation.
- Where problems exist about titling land to the users or giving them land on a long-term basis, a participatory approach to land allocation with the consensus of the people could be the best way of handling the problem.
- In societies where women do not have land titles, land titling to women will improve land use, since this will give women long-term security and control. This requires legislation from the policy level.
- Topics on watershed protection, reforestation, erosion control, watershed rehabilitation, socioeconomic, and policy aspects should be discussed comprehensively with potential end-users as prerequisites for evolving land titling/tenure policy.

## Integration of Gender Concerns

Most farmers in upland watersheds are women. In most Asian countries, women spend long hours on agriculture as well as on other natural resource management activities in addition to managing their households. However, until very recently, the WM policy-makers, planners, and technicians failed to realise this. Many WM/NRM professionals working in the field are not fully aware of the gender issues, which have not yet percolated to the implementation level. Urgent action is needed to correct the problems caused by lack of awareness. Failing to integrate gender concerns resulted in WM programme designs that were insensitive to women's needs as well as to the needs of other disadvantaged social groups. There are many myths about women farmers (Krosschell 1997), e.g., that they only do domestic work, that a given technology is good for both men and women, that women cannot work as well as men, that women's concerns can be expressed correctly by their male relatives, and so on. These myths must be seen through so that the real farmers/land users, both women and men, in upland watersheds can participate in a WM programme.

## Mainstreaming Gender-Sensitivity into WM Programme Design

Gender-sensitivity and remedies for alleviating inequalities vis a vis disadvantaged classes/castes must be built or 'mainstreamed' into watershed development programme designs. Some steps that assist in this process are as follow.

- Design WM programmes with the realisation that both women and men farmers/land users are managers of the watersheds.



- Design capacity-building for women and other disadvantaged groups into the programmes in all aspects of WM/NRM.
- Assign staff positions to women and other disadvantaged groups in the programme at all levels. These staff should be especially trained in communication methods with farmers.
- Sensitise the organizational structures and laws governing them so they provide a friendly environment for women and other disadvantaged groups.
- Design WM/NRM activities which save time, reduce workloads and risks, but increase income quickly.
- Design control over resources by women and disadvantaged groups. Particularly plan on land-use titling, equitable control over water resources and ownership of forest resources for women and other disadvantaged groups. However, allocation of land and other resources should be designed in a participatory manner rather than imposed. This also requires that the WM/NRM agencies have the authority to allocate the resources.
- Design gender audits in WM programme planning, implementation, monitoring, and evaluation; i.e., ask at every step if women (as well as other disadvantaged groups) are better off with the WM programme implementation or not.

## Facilitation of Women's Participation at Field-Level

For integrating women's concerns in WM, field-level training in methods for quick and direct benefit and income-generation should be held as near as possible to women's residences. As many women are illiterate, unorthodox and non-formal methods (e.g., posters and other visual materials) should be used for their training in WM action planning, implementation, and monitoring. Training and using local women facilitators can be helpful with local educated women leaders acting as liaison personnel. The training, as well as other surveys (e.g., PRA), should not be so long that busy women cannot participate. Using existing women's groups or informal networks, or encouraging new groups and networks which can be merged later to mixed groups once women feel more confident, can help their empowerment and participation in WM programmes. If women's participation is found wanting, use of affirmative action (e.g., quotas) may be helpful, at least in the beginning. However, it should not result in pushing women in ways that are culturally insensitive - such as speaking in public forums.

## Gender-Sensitisation Training at Institution Levels

Most development organizations in Asia are not very gender-sensitive. They need to be made more attractive to women so they can encourage more women graduates, especially in government jobs for which stronger linkages between education and implementation agencies are needed. Similarly, at the design stage, development

project activities need to be segregated for women and men. Gender analysis training must be imparted to both women and men at all levels and also should be introduced in formal and informal education/in-service training curricula so that gradually and subtly attitudes can change and gender concerns be institutionalised. Women professionals likewise need to be sensitised and their constraints removed as they often work in institutional frameworks designed for men only. Men should be encouraged to recognise their responsibility to play key roles in supporting women so that the impact of WM programmes can be for the whole household rather than the men only.

## Assured and Quick Benefit Generation

It has become clear that unless WM/NRM activities result in quick (preferably within one crop season or one year) net direct benefits to participating farmers, participation cannot be expected. Lacking such immediate benefits, on-farm level watershed management or conservation and better utilisation of natural resources will not occur. Similarly, if common property resources are to be managed better by the people, they must produce visible benefits. Thus, gender sensitive processes and activities that assure quick economic, as well as environmental and social, benefits are needed. If a WM/NRM activity does not quickly lead to such benefits, the people will not implement it.

Such quick income-generating activities could be a combination of both mechanical and biological (agro-horticultural-forestry) activities for land, water, and forest conservation. As far as possible, they should result in little loss of land, and should be labour and input-saving (e.g., by cover crops, compost, crop rotations, hedgerows of income-producing/soil improving plant materials, etc). There are many examples of activities which produce direct benefits within a crop season. Incorporation of better agronomic practices, cash crops, animal husbandry, off farm-income-generation, better storage of farm produce, value-added products, marketing and rural infrastructure (e.g., farm roads, rural roads) require attention. Community facilities (e.g., ponds, community forestry) leading to direct farmers' income-generation need to be strengthened. Farmers' capacity for investments must be promoted. Rather than subsidies, incentives, or other forms of government-determined funding, promotion of investment from both farmers and government programmes result in quick economic, environmental, and social benefits.

## Other Important Aspects of Participatory WM

To facilitate implementation of the above key elements of the participatory processes for integrated WM/NRM and other WM/NRM activities, the following aspects (Sharma and Krosschell 1997) must also be planned, monitored,



and evaluated. This brings about farmers'/land owners' empowerment and true ownership of the WM/NRM programmes.

- Farmer-led facilitation
- Farmers' capacity building
- Farmer-led planning
- Farmer-managed funding
- Farmer-led implementation
- Farmer-led monitoring and evaluation

These aspects of the participatory process dialogue are important for achieving true participatory watershed management. Farmers need opportunities to express their views and opinions, to identify problems, and to share their ideas with researchers, extensionists, and managers. Local (or farmers') organization and institutional strengthening is an important development objective. Such an approach boosts farmers' confidence and helps spread innovative ideas from farmer to farmer (Sharma and Krossschell 1996).

One serious problem is that GO/NGOs dealing with farmers may be unable to cope with poverty alleviation and participatory approaches. As the farmers or the affected communities are the direct beneficiaries of a WM programme, only they can alleviate their own poverty. GOs/NGOs are needed to facilitate the processes for farmers' capacity-building.

### **Role of Government, Non-Government Technical/Extension Personnel**

It is frequently said that participatory approaches, especially farmer-led approaches, allow no role for technical/extension agents. In practice, however, the process usually generates so much demand for farmers' capacity-building, technical assistance, and research that the existing extension services may be insufficient. The technical/extension/administration is put at the service of the people, on their demand. This requires a thorough change in the attitude of these personnel as they become facilitators and motivators of the processes. Once this happens, the participatory process will also empower the GO/NGO personnel as they gain more trust and respect from local communities.

### **Participatory Watershed Planning, Monitoring and Evaluation of What?**

Despite the recognition that participatory WM/NRM should be process-based rather than target-based, a recent expert consultation of the Participatory Watershed Management Training in Asia (PWMTA) programme of the FAO/Netherlands/UNDP, GCP/RAS/161/NET (Sharma (ed.) 1996), revealed that most WM/NRM-related professionals do not know the processes involved in sustainable WM/NRM. Shortly thereafter, the process

elements explained above were derived from recently-conducted case studies (Sharma and Wagley 1996, Sharma 1996, Sharma 1997).

While previous watershed planning, monitoring, and evaluation were generally carried out in a top-down manner by the concerned officials, the advent of participatory methods and tools such as RRA and PRA and assessment tools for gender analysis began to make it more participatory. However, participation remains limited to WM/NRM social and biophysical resource assessment and activity planning and M & E of the same, and thus it is still affected by the target-based approach. Many process elements were also known but in a disjointed and unrelated manner to WM/NRM. Once again these were like planned activities that fell under the jurisdiction of different departments and sectors rather than forming a continuous process. It is thus urgent that these processes be understood carefully and that the entire process be planned, implemented, monitored, and evaluated. The same tools and methods, e.g., RRA, PRA, and gender analysis tools, can be used for planning, monitoring, and evaluation of the process elements also.

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## Role of Government, Non-Government Technical Extension Personnel

Participatory Watershed Planning, Monitoring and Evaluation of Watershed

Despite the recognition that participatory WWM should be a process-based approach, the WWM extension personnel of the Participatory Watershed Management Training in Asia (PWMTA) programme of FAO/Netherlands/UNDP/SCN/IAS/INM/NET/UNDP/FAO, established in 1997, involved not only WWM extension personnel but also WWM extension personnel from other organizations to help in the process of WWM extension.

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