

# CHAPTER 1

## PREPARING THE NEXT GENERATION OF WATERSHED MANAGEMENT PROGRAMMES

**Moujahed Achouri**

Forestry Officer, Forestry Department, FAO

It is clear that much progress has been achieved in watershed management, especially during the 1990 to 2000 period when new approaches and methodologies were developed to promote participatory integrated watershed management. However, no clear picture has been drawn as to what has really been working and what can be done to improve future watershed management programmes. In fact, there has been no systematic effort to review and assess watershed management strategies and approaches at a global scale since FAO did so at the expert meeting held in Kathmandu, Nepal from 25 February to 1 March 1985. Hence, in-depth analysis of watershed management achievements and existing gaps, with particular emphasis on the experiences of 1990 to 2002, is a prerequisite to further development of watershed management programmes.

This paper has been prepared in response to the raising of key issues of major concern to the development of watershed management. It reviews and assesses watershed management activities and provides reliable information on lessons learned and existing gaps. Such information is needed to justify investment in watershed management activities and to focus such activities on the areas where they are most needed. The assessment concept and approaches were designed to respond to the needs and characteristics of different audiences involved in watershed management.

### **BACKGROUND**

Interest in and awareness of the multiple environmental, economic and social benefits provided by watershed management and development have greatly increased in recent decades. This may be particularly true in developing countries where the economy depends predominately on agriculture, but there are also fast-growing urban populations that depend on water and food supplies on an unprecedented scale.

Degradation of natural resources is considered to be the greatest constraint to sustainable agricultural development in most developing countries. It is generally accepted that sustainable use and management of land resources will only be achieved by adopting a system of improved land, water and vegetation management and use based on an integrated approach to land resources development with the direct involvement and participation of the different actors.

Given that watershed management is the implementation of management systems that ensure the preservation, conservation and sustainable use of all land resources, the development of watershed management is recognized as a prerequisite for the sustainable management of land resources and the improvement of upland inhabitants' living conditions. In fact, watershed management integrates various aspects of forestry, agriculture, hydrology, ecology, soils, physical climatology and other sciences to provide guidelines for choosing acceptable management alternatives within the specific social and economic context.

Integrated watershed management through people's participation has become widely accepted as the approach that ensures sound sustainable natural resources management and a better agriculture economy for upland inhabitants as well as the people living in downstream areas.

As a consequence of the attention paid to and the important investments secured for the development of watershed management, much progress has been achieved in this field. However, several issues of major concern, which were raised many years ago, still require in-depth analysis and consultation among all concerned parties for better understanding and implementation of effective watershed management.

The expert meeting on strategies, approaches and systems for integrated watershed management held in Kathmandu, Nepal in 1985 highlighted the threats that represent for the livelihood of millions of people, and the related constraints to the development of a healthy agricultural and natural resources base. This meeting, which was organized jointly by FAO, the International Centre for Integrated Mountain Development (ICIMOD) and the East-West Centre, Environment and Policy Institute (EAPI), also identified and recommended relevant action for urgent implementation.

The main actions it recommended can be summarized as follows:

- develop significant policy and programme responses;
- develop national conservation strategies and frameworks to achieve appropriate and comprehensive management of mountain watersheds;
- develop relevant training, efficient applied research and demonstration projects required to achieve effective watershed management.

In spite of the progress achieved in developing watershed management approaches and application, most of the actions identified 17 years ago are still in urgent need of implementation, even though some of them were proposed with time deadlines; for example, the development of relevant policies and programme responses was projected to be achieved by 2000.

In addition, issues such as people's participation, in which watershed management scientists and practitioners feel that major progress has been achieved, are now being raised by many as requiring further analysis and clarification. Questions that still require satisfactory responses include: What kind of participation are we using? Are we achieving what was expected? and What is missing for the institutionalization of participatory approaches?

Another important issue that many consider to be a major gap in the evolving watershed management concept is the still very limited dissemination and exchange of information on achievements and lessons learned. Owing to various reasons – mainly a lack of adequate

institutional and organizational arrangements – project experiences and lessons learned are sometimes not even shared among concerned institutions of the same country.

In this connection, the World Bank carried out a review of its own watershed management projects in May 2000. The findings of this review of 42 projects, which had a total budget of US\$2.37 billion and were implemented between 1990 and 1999, also call for in-depth analysis to identify what has been achieved and what can be done to improve future watershed management programmes.

In view of these issues, an assessment and review of results and lessons learned in watershed management are considered prerequisites not only for providing answers and clarifications of the issues raised but also, and mainly, as an important preparatory stage for the next generation of watershed management projects and development programmes.

### **ACHIEVEMENTS AND EXISTING GAPS**

During the last few decades, watershed degradation has been seen as a serious threat to environmental conditions and to the well-being and survival of millions of people living in watershed and downstream areas. Many countries recognize the importance of upper catchment conditions, and have made reversing watershed degradation a priority.

However, many watershed management programmes have failed to achieve their objectives, mainly owing to the following reasons:

- They focused too much on natural resources conservation.
- They were designed with little attention to human activities and the priorities and needs of people.
- They neglected beneficiaries' involvement and contribution to the planning and implementation of watershed management interventions.
- They were frequently limited in span and scope, and lacked the long-term commitments needed to address underlying causes and long-term management issues in a satisfactory way.

Consequently, new concepts and approaches were developed to reverse watershed degradation and establish an improved agricultural and rural economy. In order to achieve such objectives, social and economic aspects were given particular attention in watershed management programme/project formulation and implementation. In addition, *people's participation* was recognized as being key to the success of watershed management programmes.

Recognizing that the management and conservation of land resources through physical structures, reforestation and other conservation measures would not be sustainable and replicable unless people's concerns were taken into account, the *integrated concept* was developed as a process in which community problems and needs can be considered as an important component of development programmes. People's participation was also recognized as a principal component in all phases of the development of watershed management programmes.

The *participatory integrated watershed management* approach introduced and developed over the last decade includes, in addition to the technical aspects, the economic, social, political and cultural dimensions of natural resources conservation and management. Watershed management has become a multi-disciplinary activity in which appropriate institutional and organizational mechanisms are required for the coordination/implementation of watershed management activities.

The development of concepts and approaches, and the watershed management experiences from many parts of the world now call for further investigation, analysis and consultation among watershed management stakeholders for greater consensus on what has been achieved and on how things could be done better. Stakeholders are stressing the need for a clearer overview of several key issues of major concern to watershed management development.

Although it is generally agreed that integrated watershed management can play an important role in natural resources conservation and improvement of the conditions of upland people, conflicting views on the approaches and methods of watershed management continue to be the subject of concern and controversy.

A quick overview of the last decade's findings and recommendations on watershed management activities outlines a number of key questions.

*Are we sharing experiences and lessons learned?* It is recognized that significant progress on watershed management approaches and methodologies has been achieved in different parts of the world. However, sharing these results and identifying appropriate mechanisms for disseminating such information are important issues that require urgent action in order to benefit watershed management users/new projects from experiences learned and to avoid the duplication of efforts.

*Are we using the appropriate participatory processes?* The experience of participatory approaches during the last decade has raised several issues: What kind of participation is taking place? To what extent can participatory approaches be used? Are we overestimating what can be achieved through participatory approaches?

Participatory processes are recognized as primordial in watershed management at all stages, from project identification to the appraisal and implementation of activities. Experiences have shown that one-sided bottom-up or top-down approaches do not work. This leads to the conclusion that no single approach or method can be considered as the most appropriate one, but rather a variety of approaches and methods should be pragmatically used and adjusted according to specific circumstances.

*Are the technologies developed producing the desired results?* Greater emphasis is being put on the services and benefits that watershed management can provide. Watershed management is increasingly seen as an appropriate vehicle not only for environmental conservation but also for the improvement of rural livelihoods. In this regard, there is demand for the development of appropriate technologies that can ensure sustainable development and natural resources management. Specific issues are also raised regarding watershed management scale problems, upstream–downstream relationships and the technologies and methodologies needed.

*Are project activities sustainable and replicable?* There is uncertainty about the sustainability and replicability of the technologies that projects implement. The World Bank (2000) review of watershed management projects raised this concern, stating that “many Bank projects, while able to achieve considerable gains in the short term as a result of an intensive injection of funds and expertise, are neither replicable nor sustainable following project completion”.

*To what extent have the institutional/organizational and legislative arrangements been developed?* Institution building for watershed management has been mentioned as one of the most neglected parts of watershed projects. It is recognized that there is a need for improved understanding and identification of the institutional and organizational arrangements required for effective watershed management. An appropriate legislative framework to support watershed management policies is an important tool that needs particular attention.

*Are the expected policies/strategies in place?* Recent assessments have shown that although broad environmental policies are in place in many countries, generally no attention has been given to the development of watershed management policies. Lacking or inadequate national policies, strategies and action plans are recognized as principal constraints to implementing sustainable watershed management programmes.

These are some of the relevant controversies and watershed management issues that have emerged from watershed management experiences all over the world, especially those carried out during the 1990 to 2000 period.

In order to achieve effective watershed management, it is necessary to examine state-of-the-art watershed management programmes and concepts. In this context, the review and assessment intends to address the key watershed management issues raised, in preparation for future watershed management projects/programmes.

## **ASSESSMENT: LESSONS LEARNED AND FUTURE PROGRAMME DEVELOPMENT**

The assessment and review of watershed management activities is being conducted with the broad objective of promoting, disseminating and exchanging information on watershed management achievements and existing gaps and providing support for the development of effective watershed management through relevant projects and programmes. It aims to provide an adequate opportunity for all concerned parties to share information and contribute to a better understanding of the current status of watershed management, and to provide awareness raising and the required advocacy and support for the implementation of effective watershed management at the local, national and regional levels.

Based on the in-depth analysis of watershed management activities carried out over the last few decades, with emphasis on the last decade (1990 to 2000), and in view of important events such as the International Year of Mountains (IYM), the assessment/review initiative was developed with the main objectives of:

- assessing and identifying the nature and extent of achievements and existing gaps in state-of-the-art watershed management programmes and concepts;
- identifying lessons learned and principal issues emerging from the experiences of FAO and other relevant organizations, with particular focus on the 1990 to 2000 period;

- identifying guidelines for the formulation and implementation of the next generation of watershed management projects/programmes;
- contributing to implementation of Agenda 21, Chapter 13 (Sustainable Mountain Development) and to the outcome and follow-up of the IYM and the International Year of Freshwater.

The assessment's approach was carefully developed in order to respond to several needs while considering the characteristics of the different audiences involved in watershed management at the global, regional and national levels. It includes:

- stakeholder identification, participation and contribution;
- steps in the assessment development process that allow relevant parties to contribute;
- output that responds to the issues raised by stakeholders.

The following steps were identified as necessary for the proposed watershed management review and assessment.

**Consultation:** The review/assessment concepts and approaches were discussed in-house. Comments and suggestions were sought from technical divisions involved in watershed management activities.

**Investigation:** In-depth investigation was conducted to identify whether FAO and/or others had conducted other reviews and assessments on issues related to watershed management activities.

**Stocktaking:** FAO experiences of watershed management were emphasized, with particular attention on the period 1990 to 2000. Project formulation documents, evaluations and findings, recommendation reports and the outcomes of watershed management events such as seminars, conferences and workshops represent a principal source of information for the assessment. To be in line with the assessment objectives, experiences and information from other relevant organizations were taken into account during this phase of the assessment.

**Case studies:** Selected case studies treating watershed management issues were identified for in-depth analysis to provide reliable information on state-of-the-art watershed management. By highlighting what does or does not work, the case study analysis can also orient the formulation and implementation of the next generation of watershed management projects. Ongoing work on sustainable mountain development case studies could be a good source of information for the watershed management activities assessment.

**Workshops:** In order to learn from regional experiences, regional workshops were conducted. Watershed management experts who had been involved in watershed management shared experiences and lessons learned. Workshop participants commented on the outcome of the assessment steps, and contributed to the exercise's findings and recommendations.

**International conference:** An international conference was planned where key partners in watershed management could discuss the findings/recommendations of the review and guidelines for the next generation of watershed management programmes for dissemination at the global scale.

**Dissemination of results:** The review and assessment results will be disseminated through reports and relevant Web sites. An FAO Conservation Guide on future watershed management programmes is an outcome of this exercise.

The potential users of the watershed management activities review and assessment include FAO and other relevant international organizations, national institutions/decision-makers dealing with watershed management activities, and watershed management specialists, including researchers involved in watershed management development activities.

Potential uses include: sharing/promoting lessons learned from past experiences; greater streamlining and consensus on the issues raised; raised awareness on the role of watershed management in rural development/poverty alleviation programmes; development of future watershed management plans and strategies; guidance for policy development and formulation of relevant projects/programmes; and orienting research action to identified key issues for the development of watershed management programmes.

The findings and recommendations of the watershed management activities review and assessment will be presented in an FAO Conservation Guide. The results are also available through relevant Web sites.

## REFERENCES

- FAO. 1986. *Strategies, approaches and systems in integrated watershed management*. Conservation Guide No. 14. Rome.
- FAO. 1998. *Developing participatory and integrated watershed management*. Community Forestry Case Study Series No. 13. Rome.
- United Nations. 1992. Agenda 21, Chapter 13 “Managing Fragile Ecosystems–Sustainable Mountain Development”. Rio de Janeiro, Brazil, Earth Summit (UNCED).
- World Bank. May 2000. *Watershed management: A review of the World Bank portfolio (1990–2000)*. Washington, DC, World Bank, Rural Development Department.