

New Developments in Social and Economic Concepts and Participatory Integrated Watershed Management

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Objectives

- To review new developments in social and economic dimensions in the context of participatory integrated watershed management
- To understand and address critical components of the current economy and environment

What are the changing perspectives on development ?

Economic consideration has received systematic priority in development for the past four decades and, although its role is still critical, it is today being better balanced by incorporating other concerns related to basic needs, the environment, human development, and ,more recently, democracy, human rights and liberalisation.

What is an acceptable framework for development?

There is widespread debate on what is actually an acceptable framework for development. Depending on the specific problems encountered in a particular area, it is possible to come up with many different options—some of which may be mutually conflicting. The recognition that development must deal with these conflicting realities is a crucial step forward and clearly underscores the role of participatory approaches in any development effort, including in watershed management where there are many open conflicts regarding use and access of resources: e.g., between conservation and development, between uplanders and lowlanders, and so on.

What do the developing countries want from development? And what do developed countries emphasise?

Developing countries want higher economic growth, improved standards of living for their people, and greater access to developed country markets. They argue that

environmental controls should be relaxed until a certain level of development has been reached. Developed countries, on the other hand, emphasise the need for greater liberalisation and openness in the domestic economies of developing countries, greater environmental control, more human rights and democracy.

Which problems are receiving attention in all countries?

In both the developing and developed countries increasing attention is being given to the problems of women, children, minorities, and disadvantaged groups.

What is sustainable development (SD)?

There is widespread divergence in what is meant by SD. Ecologists talk about SD in terms of resources and waste management. Economists talk about basic needs, income and well-being. Demographers and biologists talk about carrying capacity. The most popular definition of sustainable development was given by the Brundtland Report which said it is 'meeting present needs without reducing the options for further generations' (World Bank 1994). Others have defined it as increases in income options without degradation of the resource base (WCED 1987). This definition is appropriate for participatory watershed management as it identifies the conditions under which incomes can continue to increase. There is some debate about the number and type of resources one should consider, but this is difficult to discuss in the abstract. Different areas have different endowments and there are always some resources more important than others. Watershed management is now 'people-based' and the local people have a major say in planning and implementation of most activities. Local people have a better understanding of the complexities in the watershed and are better prepared to deal with them than outsiders. From the point of view of watershed management, many perspectives are essential because it is, in essence, developing a harmonious relationship between the people and the watershed.

What are the guiding principles of sustainable development?

Efforts have been made to integrate all the major components. Some principles of sustainable development (World Bank 1994) have also been proposed. These are guiding principles and cannot be taken in isolation. They are all interrelated.

- **Principle of the cultural and social integrity of development.** This emphasises the notion that development cannot be imposed or imported from outside. It must grow and come from within. Every society must make its own decisions regarding priorities and how to deal with them. As a nation is a non-homogenous entity, it should develop mechanisms for similar decisions at regional and local levels. This has implications for different watersheds and the communities that live in these watersheds.
- **Ecological principle.** Development can no longer be at the cost of degradation and rapid loss of natural resources. Loss in biodiversity is reaching alarming proportions in many areas. Urgent efforts are needed to restore diversity and introduce sustainable forms of resource use. Ultimately these will also help to improve the quality of human life as their loss has some adverse effects. There are many examples in which people's participation has successfully rehabilitated degraded watersheds and local residents are receiving better economic returns than previously. Through proper management it is possible to introduce sustainable harvesting that will not deplete the environmental capital.
- **Solidarity principle.** Everyone is different culturally, socially, economically, politically and historically. These differences should be respected and at the same time should be made to work together to provide basic necessities of life and secure living, working and participating conditions for all. As far as possible, everyone should benefit from watershed management activities. Even if everybody does not gain there should be no losers. This is obviously a difficult principle to implement but needs to be given full consideration.
- **Emancipation principle.** Development must foster self-reliance, local resource control, empowerment and participation of the weaker sections of society—women, the disadvantaged, and deprived—as much or as extensively as the more fortunate members of society. In the long run most sustainable practices have incorporated this aspect. To a great extent this

is influenced by the political process and framework. Most rural development and poverty eradication programmes have incorporated this emphasis through focus on participatory processes.

- **Non-violence principle.** Development must be peaceful for, without peace, there is no development for anyone. This is equally true for nations, between sexes, and for communities and ethnic groups. With ethnicity becoming a major basis for violence, this principle must be better understood and practised. Being non-violent does not mean being submissive to injustice.
- **Principle of error friendliness.** There are no ultimate technical blueprints for development and the more we can accept this the better the chances are that we will look around and become more open to other ideas. Development is a dynamic process: it is not just economic dynamism but learning to develop in different ways. It is not a static process. This dynamic process must allow for mistakes—for learning, improving and obviously building a stronger basis for future development.

Will there be other principles of sustainable development? What were the problems encountered in the past in watershed management?

Yes, there will be other principles besides the ones identified above. However, what should always be emphasised is the 'opening-up' of the development debate. All ideas are relevant for participatory and integrated watershed management. In the past, implementation of watershed management activities has encountered various problems—little or no local participation, inadequate extension and technical assistance, inadequate testing and development of resource management options, a fragmented government structure, conflicting interests among various actors that are not easily resolved and various territorial questions and issues. Use of these principles will assist in resolving many of these problems. They force the 'framework' or 'approach' to open up and once this is achieved a healthy beginning for generating sound local solutions to problems is made.

What is growth?

Redefining growth

Conventionally, growth has come to be seen primarily as economic growth. Growth meant increasing the size of the economy over time, measured in terms of income

of the people. So long as incomes were growing rapidly, it was believed that other problems could be eventually tackled. This position neglected many things—environment, equity, non-material quality of life, participation, etc.

What are the main contributing factors to growth? What is the meaning of the politics of international development?

The main contributing factor to growth was believed to be improvements in technology. The challenge now—particularly from an environmental point-of-view—is to achieve a continuing process of technology development but with less and less use of natural resources, especially of those facing serious environmental problems. In other words, the emphasis in redefined growth is to substitute human-made capital for natural capital (Goodland et al. 1992). This is a slow process and cannot happen overnight. The implications of this process are far reaching because, if physical inputs are limited then, by the law of conservation of matter-energy, physical outputs will also be limited. So someone has to begin giving up and making sacrifices. This is where the politics of international development come in—who should give up? how much? how to enforce it? etc. All

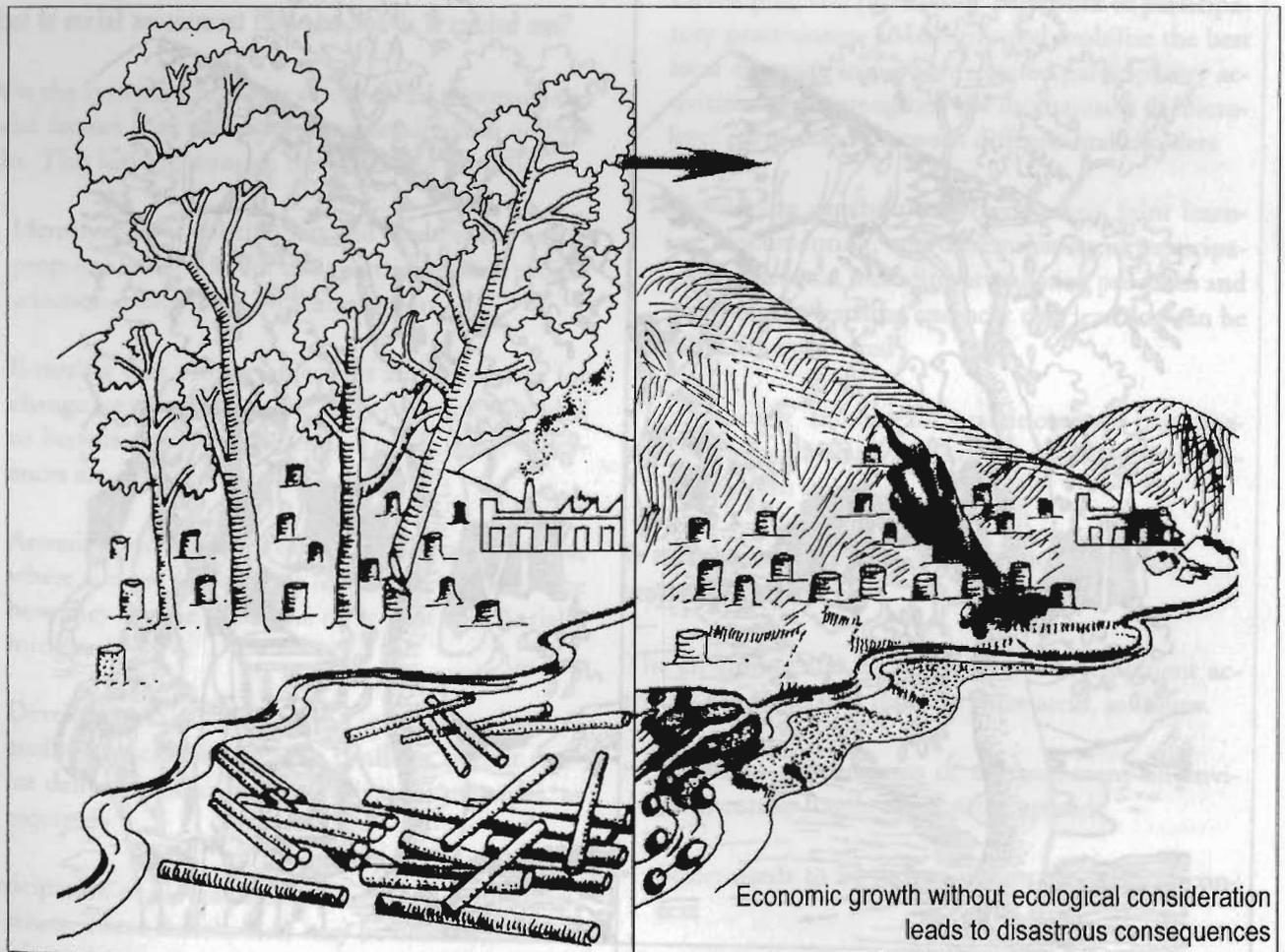
these questions are being asked quite clearly in the continuing debate on the ozone layer and global warming—between rich and poor countries, among rich countries, and between small and bigger nations both rich and poor.

Do the conflicts of redefining growth matter in watershed management?

Yes, some conflicts related to redefining growth are also encountered in watershed management. There is always the pressure to add one more development project either to use available resources or to support development objectives. This tendency does not consider the overall status of the watershed—not just in terms of pollution and resource depletion, but also in terms of 'wilderness', 'openness' and other 'pristine' characteristics that are lost to the onslaught of development.

What is meant by ecological economics?

Ecological economic principles have developed in response to the prevailing limitations of conventional economics to deal adequately with the problems of the environment, particularly those related to increasing scar-

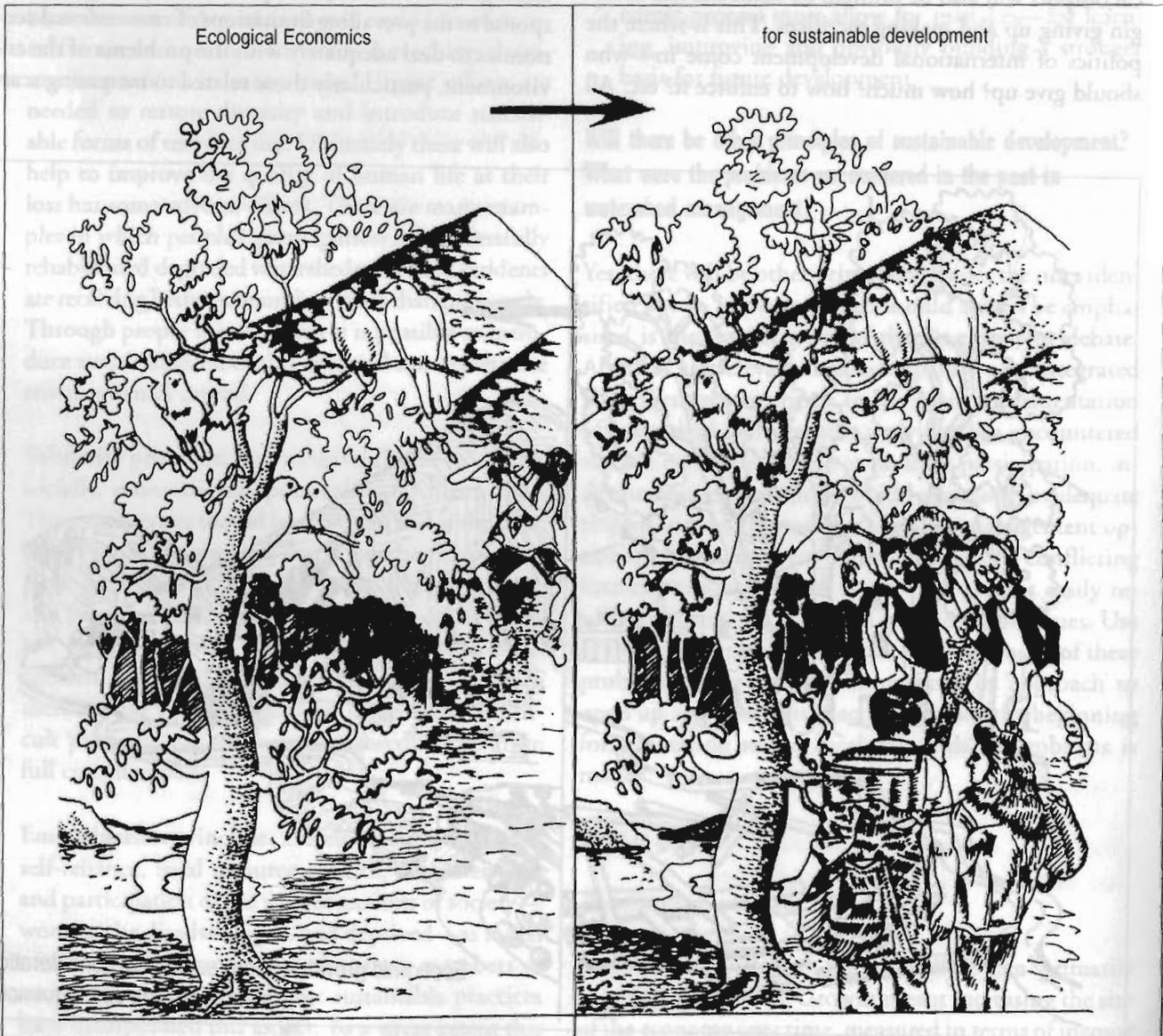


Economic growth without ecological consideration leads to disastrous consequences

city of resources and resulting from our production and consumption systems or 'externalities'. Two important reasons for the lack of adequate attention were that, until recently, most environmental goods were relatively abundant and that these have been non-tradable or non-marketable goods. Ecological economics attempt to deal with some of these problems in a systematic manner although in some aspects there are still wide differences within the discipline on how to handle these problems and issues. Some of the new thrusts (Goodland et al. 1992) are as follow.

- Reflection of the full, social marginal opportunity costs in prices. This means that we should know or at least try to find out what the society wishes to pay for a particular activity and measure this in terms of opportunity costs. There are difficulties in arriving at this measure by depending on market prices and other economic information.

- Repeal of environmentally perverse incentives such as subsidies for resettlement in forest areas, use of fertilizer and pesticides, vehicles for agricultural use, and so on.
- Use of a 'cradle-to-grave' approach in valuation by looking at the entire cycle of an activity even if this is somewhat distant.
- Use of the 'polluter pays principle'. Whoever pollutes should pay. The owners of vehicles should pay for air pollution problems in urban areas and not the rest of the nation.
- Inclusion of non-monetary values in project justification. Rigorous efforts should be made to capture all values in quantitative terms, but if this cannot be achieved, qualitative assessments should be used by assigning weightage.



- Use of environmental accounting to separate what is a liquidation of natural capital from what is income. Decapitalisation should not be confused with income. Environmental accounting helps to monitor the drawing down of natural capital. For example, harvesting plants provides incomes but there may also be a loss of biodiversity. Bringing marginal land under cultivation gives food but the loss of forests, topsoil, and flora and fauna is a depletion of natural assets. Using iron ore to make a plough depletes the stock of minerals. Thus while the plough is a useful piece of capital, its valuation should incorporate the loss of natural resources.
- Use of the transparency principle to emphasise the critical importance of not hiding information. Without appropriate information, awareness and action will not be forthcoming. All sectors and sides should make their decisions transparent and encourage wider sharing and participation.

Most of these concepts are being applied to some extent already in watershed management decisions. The place to apply them is in the preparation of watershed management plans and the implementation of project activities.

What is social assessment (SA) and how is it carried out?

SA is the systematic analysis of the social processes and social factors that affect development impacts and results. This is done through the following process.

- Identifying key stakeholders and establishing an appropriate framework for their participation in project selection, design and implementation
- Ensuring that project objectives and incentives for change are acceptable to the range of people intended to benefit and that gender and other social differences are reflected in project design
- Assessing social impact of investment projects and, where adverse impacts are identified, to determine how they can be overcome or at least substantially mitigated
- Developing capabilities at the appropriate level to enable participation, resolve conflicts, permit service delivery, and carry out mitigation measures, as required.

Participation of the stakeholders helps to identify critical issues. These stakeholders may be officials, NGOs,

beneficiaries and affected groups. Depending on the objectives and complexity of the area, SAs can be carried out by either a team or an individual. SAs are not only useful for planning but also for monitoring and evaluation of programmes and objectives.

What is participatory action learning (PAL) and how can it be promoted?

PAL seeks to promote participatory development and is defined as a process through which stakeholders influence and share control over development initiatives and the decisions and resources that affect them (Ladekodi 1992). This shift towards participation emphasises the increasing role in development of ownership, commitment, and sustainability. There is a critical gender dimension to participatory development. Based on experience the following activities are carried out to promote PAL.

- Establishing a database of existing participation capacity and experience
- Developing strategies and action plans to strengthen capacity
- Developing and promoting a network of participatory practitioners to identify and mobilise the best local expertise to support selected participatory activities and to strengthen the mechanisms of micro-level partnerships between different stakeholders
- Developing capabilities for systematic joint learning, documenting, and disseminating of participatory experience, including articulating processes and products for learning and how that learning can be captured and shared
- Supporting training for practitioners of participatory approaches and in the design of supportive communication strategies

Is environmental screening of development activities/projects important?

The environmental impacts of most development activities can be seen in terms of three areas, as follow.

- Location: proximity to or encroachment on environmentally fragile or sensitive uplands
- Scale: needs to be judged within the country context

- Sensitivity: refers to issues such as impacts that are irreversible, affect vulnerable ethnic minorities, or involve involuntary resettlements, etc

Projects can be then be grouped into three categories

Category A. A complete environmental assessment (EA) is required. These would be carried out for dams and reservoirs, forestry production projects, industrial plants and estates, irrigation, drainage and flood control, land clearance and levelling (excluding terracing), mineral development (including oil and gas), port development, reclamation of new land development, resettlement, river basin development, thermal and hydropower development, manufacturing, transport, and use of pesticides or other toxins and/or hazardous materials.

Category B. Although complete EA is not required, environmental analysis is needed. The projects may have adverse environmental impacts that are less significant than the category A impacts. Few, if any, under B are irreversible. The impacts are not as sensitive or numerous. Preparation of mitigation plans could be sufficient.

A mitigation or management plan should include

- identification and summary of all anticipated significant, adverse environmental impacts,
- description and technical details for each mitigation measure,
- implementing schedules,
- monitoring and reporting,
- cost estimates and sources of funds, and
- measures to strengthen environmental management capability: staff development, technical assistance, procurement of equipment and supplies, and organizational changes.

Projects in this category would be agro-industries, electrical transmission, aquaculture and mariculture, irrigation and drainage (small scale), renewable energy, rural electrification, tourism, rural water supply and sanitation, watershed projects (management and rehabilitation), rehabilitation, maintenance, and upgrading projects.

Category C. Environmental analysis is normally not required because the project is unlikely to have adverse

impacts. Judgement indicates that either these are marginal or not evident. Most projects here deal in education, family planning, health, nutrition, institutional development, and most human resource development activities.

How have the main concerns and gaps in watershed management been corrected and the focus shifted recently?

Watershed management has come a long way since the days when a few technical solutions for runoff control and afforestation were its main concerns. A major gap was the watershed community and this neglect was corrected only after a string of failures in watershed management. In spite of the shift in focus from biophysical problems to people, the approach was still top-down, expert-oriented, and technology-driven and the role of external inputs was high. Over time even these ran into problems, but not without displaying other problems and conflicts within the watershed community, economy, and biophysical space. Loss in biodiversity was not compensated for by increases in monospecies' afforestation. Increase in the number of development projects hastened resource extraction and degradation, highlighting the urgent need for balancing development with conservation. Whose development it was became a difficult question as it was realised that women were in many ways worse off than before and poorer groups were losing access to resources that were critical for their survival. Development was creating a few prosperous groups, but many others were being degraded, marginalised, displaced, and sadly, in some instances, even forced to fight for their space in the watershed. Inappropriate concepts and methods have contributed to some of these problems. The present situation in which substantial efforts are being made to deal with these problems conceptually and empirically will hopefully contribute towards participatory, integrated watershed development in the future.

References

- Court, Thijs de la, 1992. 'Critique of the Dominant Development Paradigm'. In *Development 1992:2, Journal of SID*, pp 42-45.
- Goodland, R. and Daly, Heman H., 1992. 'Three Steps Towards Global Environmental Sustainability (Part I)'. In *Development 1992:2*, pp 35-41.
- Goodland, R. and Daly, Heman H., 1992. 'Three Steps Towards Global Environmental Sustainability' (Part II). In *Development 1992:3*, pp 64-71.

Jodha, N. S. and Banskota, M, and Partap, T. (eds). *Sustainable Mountain Agriculture*. New Delhi: Oxford and IBH Pvt. Ltd.

ment Bulletin, Fall Issues. Wasinghton DC: World Bank.

Ladekodi, Gopal K. 1992. 'Paradigms of Sustainable Development'. In *Development* 1992:3, Journal of SID, pp 72-76.

World Bank, 1996. 'Participation Action Learning at the Country Level: The PAL Programme' Summary Proposal'. EDI World Bank. Wasinghton DC: World Bank.

World Bank, 1994. 'Social Assessment: Incorporating Participation and Social Analysis into the World Bank's Operational Work'. In *Environ-*

World Commission on Environment and Development (WCED), 1987. *Our Common Future*. Oxford: Oxford University Press.

Objectives

- To examine social dynamics that affect performance and to gain a better understanding of the dynamics of group action so that factors that reduce and encourage group action for the mixed-use water-agriculture system can be identified
- To understand better the factors and processes associated with community approaches and usage of natural resources in mountain areas under traditional and present-day systems
- To identify factors that could promote participation and collective action in watershed management and the choice of watershed use and approaches to spatial or participation

Deliverables

Diagnosis of local ecological conditions, integrated water resource management implies recognition that water is a common property resource that should be managed collectively. This requires a new approach to the management of natural resources based on recognition of their common property nature.

What is participatory watershed management? How can it be implemented? What are the key elements of a participatory watershed management approach?

This study is a part of a larger study on the participatory management of water and land resources in mountain areas. The study is a part of a larger study on the participatory management of water and land resources in mountain areas. The study is a part of a larger study on the participatory management of water and land resources in mountain areas.

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Approaches to watershed management: the village pattern

The extent of resource degradation (or, again, regeneration) is closely linked to the degree of institutional internalization of resource use. Increased institutionalization of resource use, unaccompanied by appropriate water use for conservation of the resource base through re-planting, hedgerows, and natural forest regeneration, reduces the chances of the user base for better watershed management. Degradation does not imply that watershed management is not possible. It only implies that watershed management is more difficult. Every watershed user should be encouraged to adopt low-cost, low-input, and low-risk watershed management approaches. For instance, such watershed management approaches largely focused on riparian zone activities, such as hedgerow, grassland, and other agricultural initiatives. Specific watershed management activities include the forest component as well as riparian zone activities. Higher yields in watershed management.

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