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International Centre for Integrated Mountain Development

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

SUSTAINING UPLAND RESOURCES

PEOPLE'S PARTICIPATION IN WATERSHED MANAGEMENT

Anis A. Dani and J. Gabriel Campbell

ICIMOD OCCASIONAL PAPER NO. 3

Kathmandu, Nepal
July, 1986

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FOREWORD

This review of people's participation in watershed management activities in the Hindu Kush-Himalaya Region reflects a concern, shared by the Food and Agriculture Organisation of the United Nations (FAO), and the International Centre for Integrated Mountain Development (ICIMOD), that upland conservation can only be successful if local people are involved in its planning, implementation and benefit from investment programmes for sustained utilisation of mountain watersheds.

The present study identifies watershed management and other related projects in which upland communities participate to a varying degree, with a view to assessing the strategies presently employed and to identifying promising approaches that might warrant further analysis and dissemination.

We wish to express our sincere gratitude to the two authors, Anis Ahmad Dani and J. Gabriel Campbell, and to the many people who gave their time during field visits and interviews and contributed in many other ways to this document.

It is hoped that the study will further stimulate interest in the development of people's participation in upland conservation activities through a clearer understanding of the respective roles of Governments, project managers, extension staff and the upland communities themselves.

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An earlier version of this paper was presented at the International Workshop on Watershed Management in the Hindu Kush-Himalaya sponsored by the Chinese Academy of Sciences (CAS) and ICIMOD at Chengdu, Sichuan, in October 1985. A revised version was discussed at an informal seminar held at ICIMOD in December 1985. The authors are grateful to the participants at these two meetings who provided numerous valuable comments and suggestions.

Ms. Frances Ramble contributed substantially to this paper by helping to collect, analyze and prepare the information obtained from the project profiles and working as an untiring and valuable Research Assistant.

The authors also wish to acknowledge the creative, yet strict, role in improving the contents and style of this paper played by the Editorial and Publications Unit of ICIMOD.

Most importantly, the authors thank the project personnel listed at the beginning of Appendix 3, for their time and devoted assistance. Theirs is the responsibility for actually working with local people to translate ideas into action. We dedicate this study to their partnership with local people of the Hindu Kush-Himalaya Region.

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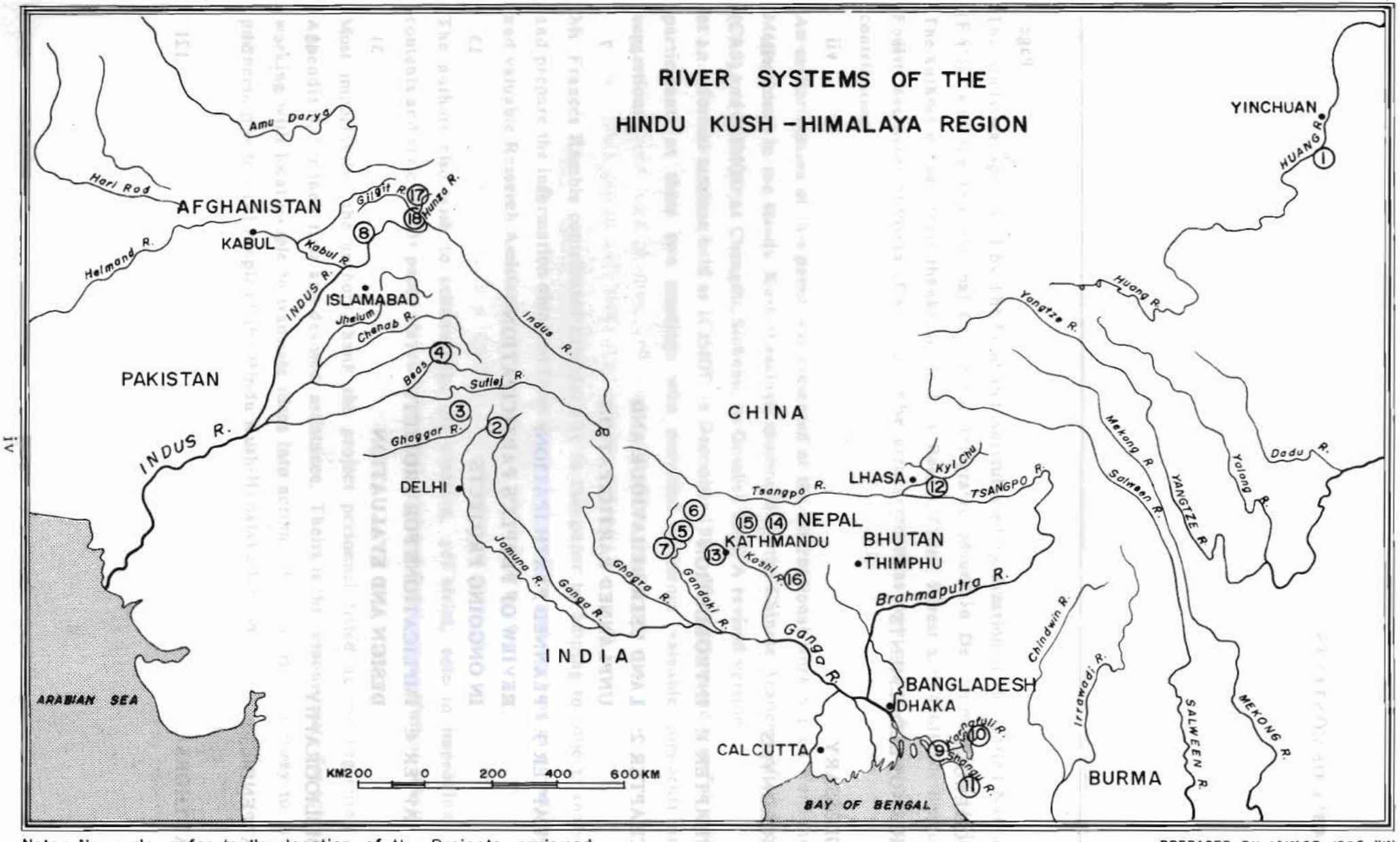

Note : Numerals refer to the location of the Projects reviewed.
Refer Appendix III

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GLOSSARY

ashre	communal cutting of grass
chowkidars	guards/watchers
chulha/chulho	improved woodfuel stove
cown	oryza rice variety
dao	sickle
gaun sallah	village consultation
goshalla	community grazing land
gram sabha	village assembly
jhum, jhuming	slash and burn agriculture
khas land	government land
kuhl	irrigation channel in high mountains of Pakistan
Mahila Mangal Dal	women's organisation
naike	nursery foreman
numbardar	village headman
pancha	elected member of village assembly
panchayat	village unit, or elected assembly
pradhan pancha	elected village headman
rastriya panchayat	national legislature
samiti	committee
sarpanch	elected village headman
shamlat	community grazing and forest land
tuki	local activator and motivator for rural improvement
union parishad	union council
ward	sub-panchayat level assembly

ACRONYMS

ADAB	Australian Development Assistance Bureau
AKRSP	Aga Khan Rural Support Programme
APROSC	Agricultural Projects Services Centre
BARI	Bangladesh Agriculture Research Institute
BSCIC	Bangladesh Small and Cottage Industries Corporation
CCC	Catchment Conservation Committee
CFDP	Community Forestry Development Programme
CHTDB	Chittagong Hill Tracts Development Board
CISNAR	Commission for Integrated Survey of Natural Resources
CMU	Central Management Unit
DFC	District Forest Controller
DFO	District Forestry Officer
DSCWM	Department of Soil Conservation and Watershed Management
FAO	Food and Agriculture Organisation
GOI	Government of India
GTZ	German Agency for Technical Cooperation
HMG	His Majesty's Government of Nepal
HRS	Household Responsibility System
HTDP	Hill Tracts Development Project
IHDP	Integrated Hill Development Project
JT	Junior Technician
JTA	Junior Technical Assistant
KHARDEP	Kosi Hills Area Rural Development Project
MLA	Member of Legislative Assembly

MPLD	Ministry of Panchayat and Local Development
NAFP	Nepal/Australia Forestry Programme
NWFP	North Western Frontier Province
ODA	Overseas Development Administration (UK)
PADEC	Programme Area Development Executive Committee
PCC	Panchayat Conservation Committee
PCV	Peace Corps Volunteer
PDPP	Panchayat Development Programme Planning
PF	Panchayat Forest
PFC	Panchayat Forestry Committee
PPF	Panchayat Protected Forest
PPI	Productive Physical Infrastructure
RCUP	Resources Conservation and Utilisation Project
RRM	Related Resource Management
SATA	Swiss Association for Technical Assistance
SECID	South East Consortium for International Development
SO	Social Organiser
T & V	Training and Visit system of extension
TRUCO	Trust Building and Cooperation
TWP	Tinau Watershed Project
UMN	United Mission to Nepal
UNDP	United Nations Development Programme
UP	Uttar Pradesh
USAID	United States Agency for International Development
USF	Unclassed State Forests
VO	Village Organisation
WAPDA	Water and Power Development Authority
WSM	Watershed Management
VPG	Village Production Group

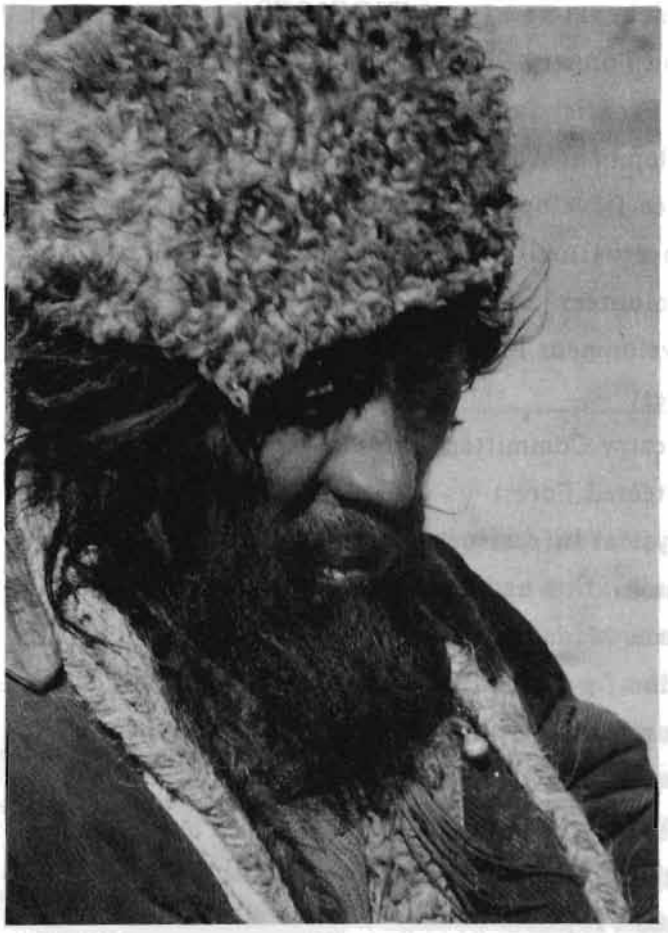


Plate 1. The Shepherd. (Photo: J. Gabriel Campbell)

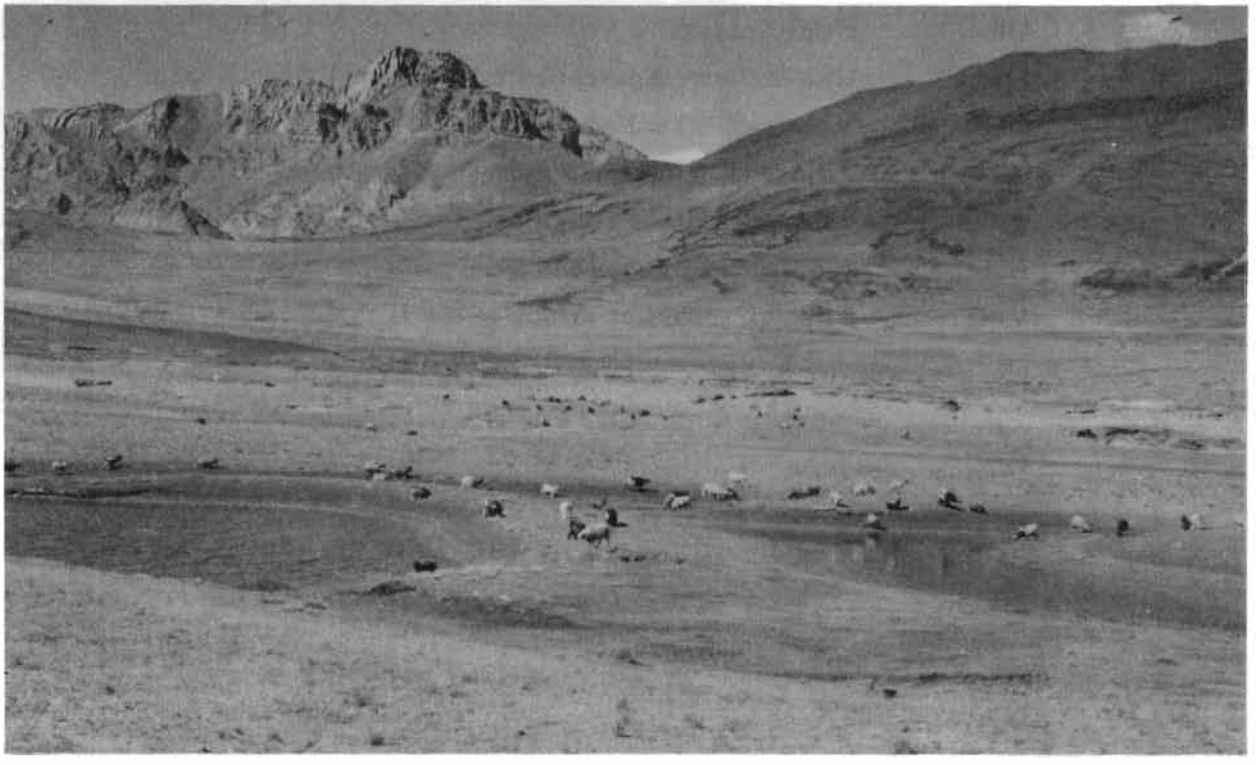


Plate 2. Pastoral Nomadism on the Tibetan Plateau (Photo: J. Gabriel Campbell)

CHAPTER 1

INTRODUCTION

Watershed management in the Hindu Kush-Himalaya requires a different approach than that used in the West, where scientific interpretations of land use and land capability are applied to erosion-prone areas to benefit downstream users. Watersheds in the Hindu Kush-Himalaya Region are densely populated; all land capable of biomass production is used by local people to sustain their livelihoods. As the primary renewable resource users, local people are the **de facto** watershed managers. This paper argues that effective watershed management in the Region must be based on understanding, encouraging, and empowering land users to sustain upland productivity for their own long-term benefit, by carrying out positive land use practices built on their existing patterns of land use.

The primary objective of this study is to provide a conceptual framework for documenting, analysing and evaluating people's participation in watershed management activities in the Hindu Kush-Himalaya. Following an analysis of concepts in this Introduction, Chapter 2 examines present land use behavioural trends in upland areas of the Region. In Chapter 3, data from eighteen projects in Bangladesh, China, India, Nepal and Pakistan are analysed, including information collected by field visits and interviews with project personnel. Three matrices (See Appendix 1) have been developed to document and assess current participatory practices of watershed management and related resource management projects. Based on this initial analysis, Chapter 4 presents tentative conclusions in the form of hypotheses regarding promotion of people's participation to guide future studies and evaluations, and to identify promising policy and project strategies.

Watershed management projects start from the premise that current subsistence patterns must be changed because the present level of resource degradation caused by human activity in the Hindu Kush-Himalaya is too high, either to be self-sustaining or to reduce costs associated with downstream investments. While the principal objective of watershed

management projects is often stated in terms of reducing soil loss (primarily through control of water movement), a more careful assessment reveals this is really the means for reaching a more fundamental objective. The reason for trying to change environmentally destructive land use is the desire to improve or sustain productivity either within the area itself (upstream) or in its drainage (downstream). If there were no downstream investments; if future livelihoods were not perceived to be at risk; if current land use patterns were not deemed to be the source of the problem, the cost of watershed management could only be weighed against aesthetic values.

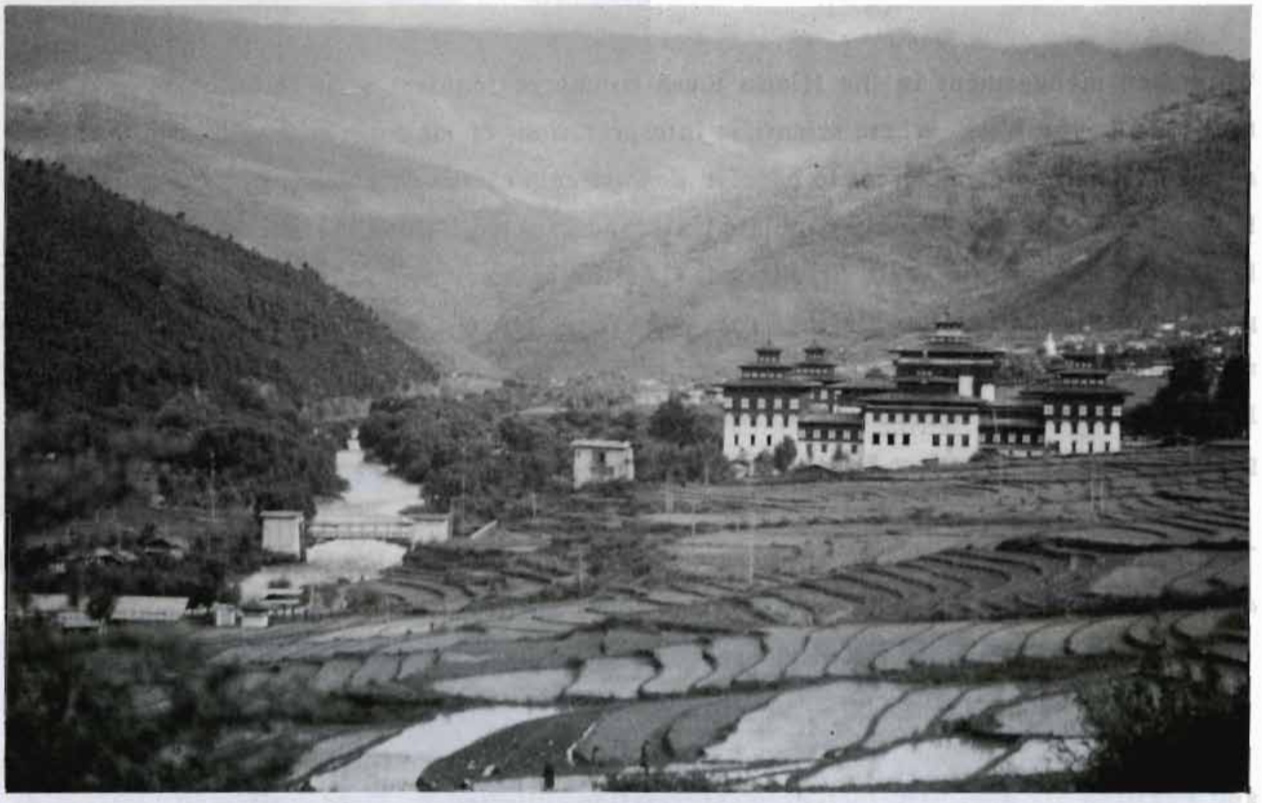


Plate 3. Sustainable resource productivity in Bhutan (Photo. David K Barker)

As Thomson and Warburton (1985) have argued, present understanding of the causal relations underlying the rationale for watershed management is based on considerable uncertainty. The degree of erosion and environmental destruction caused by local people's actions, and the degree to which this erosion and destruction are the cause of dam siltation, flooding, loss of soil productivity, and changes in water regimes, are the subject of much debate (Carson, 1985; Hamilton, 1985). It is not unlikely that aesthetic values play a more important role in watershed management than is acknowledged in scientific literature or among policy makers.

But even to the extent that the unstated goals of watershed management are lush forests and abundant wildlife for aesthetic reasons, the underlying rationale is nonetheless sustainable resource productivity. Thus, along with soil conservation measures, principally through water flow control, various technologies for sustaining productivity -- whether dams, agroforestry or improved agriculture and irrigation -- are usually part of the package.

> Watershed management is the development and management of the watershed resources in such a manner as to achieve optimum production which can be sustained without causing deterioration in the resource base or disturbing the ecological balance. (Dewan and Sharma 1985: 15).

Since both the premises of watershed management projects and their objectives are primarily concerned with changing local land users' behaviour in the watershed areas, it is not surprising that the need for their cooperation and participation in project implementation is widely recognised (Bochet 1983; Botero 1985). Most watershed managers agree that encouraging people's participation is desirable. Even where the emphasis is conservationist, such as with biosphere reserves, national parks, and protected areas, the importance of local participation is frequently voiced (Begue 1984; Cowley and Lieff 1984; Hales 1984; Johnstone 1983).

Watershed programmes attempt to encourage participation in their activities through various means, including incentives (Botero 1985). The results of the preliminary survey of watershed and related resource management projects conducted for this study show a lack of consensus regarding how, and when, people's participation should be sought, and what it really means. It is recognised that organising local participation for sustained development is problematic (Morales 1984), but insufficient attention has been given to understanding the local land users' perspective towards participation.

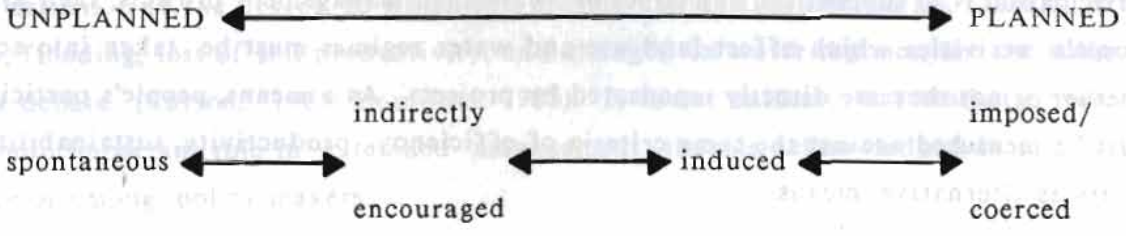
In watershed management projects, participation is sought as a **means** to achieve self-sustaining upland resource use, not usually as an end in itself. If the purpose of people's participation is to support the objectives of watershed management projects, then **all** local people's activities which affect land use and water regimes must be taken into account, whether or not they are directly sponsored by projects. As a means, people's participation must be measured against the same criteria of efficiency, productivity, sustainability, and equity as alternative means.

The fundamental premise of this study is that people's participation must be examined in terms of the reasons participation is sought. Many factors affect people's land use behaviour in the uplands of the Hindu Kush-Himalaya Region, regardless of whether specific projects for changing land use behaviour are undertaken. It will be argued that support for unsponsored activities may be one of the most efficient paths to achieving widespread, effective watershed management.

This paper defines "participation" as people's activities which contribute to the objectives of watershed management, including: sustained upland production, reduction in upland erosion, and reduction or prevention of an increase in downstream effects caused by human activities. This definition includes the whole spectrum of resource use behaviour -- along a continuum from "unplanned" to "planned" -- which supports conservation-oriented (or sustainable) upland use as understood by watershed project managers. (As watershed managers change their views on what behaviour is positive, this will necessarily change the content of participatory activities as well.)

Participation can be viewed as a continuum from "spontaneous" to "imposed", with varying degrees of indirect and direct incentives falling between these poles (Figure 1). For example, careful terracing of rice fields and semi-political movements such as *Chipko* in the U.P. Himalaya would be considered relatively spontaneous in comparison to government takeover of eroded private lands in the Punjab (India), imposed by the project. Free tree seedlings, subsidies, etc., are incentives which lie towards the middle of the continuum. In addition to local people's behaviour, project personnel participation in promoting positive land use behaviour must be taken into account (Figure 1).

Figure 1. Participation Continuum



Watershed management is based on the necessary attempt to combine a number of disparate perspectives and types of participation into a common endeavour. There are three sets of actors involved: the project staff, the funders (donors), and the various land users. The first task in understanding the types of participation is to disentangle the motivations which stem from these different perspectives.

All **project staff** carry out their duties as part of their job. It would be naive to assume that their primary motive is the specified objective of the watershed management project; more likely, maximising income, status, security, and fringe benefits is the driving motivation. To the extent that carrying out the specified activities enhance this objective, the actors may be motivated to achieve project goals. However, since the direct control of staff, field activities and budget is more rewarding in terms of status, security, and fringe benefits, than the indirect support of land users' own efforts, there is a built-in bias towards capital intensive, project-managed components over high effort, low capital, land user-managed components.

The project staff bias is exacerbated by **donor agency** biases towards short-term, quantifiable results (Blaikie 1985: 62). The importance of these biases in undermining efficient and sustainable results, based on what local users are willing to do, is often underestimated.

The **local land user** is also interested in maximising economic returns without endangering security. However, time horizons and levels of risk-taking are likely to differ significantly among local users. While larger landowners are more able to defer short returns than marginal farmers, studies have shown that even conservative farmers and herders are willing to change behaviours as a result of their perception of costs, benefits, and risks involved (Schroeder 1985).

If changes have been induced through heavy subsidies or incentives, the land user rightly perceives that someone else is willing to pay for this behaviour. He/she is then likely to attempt to perpetuate this relationship as long as possible. In other words, actions which require additional incentives to **initiate** tend to develop a dependency on those incentives. Unless changes sought by the watershed management project are based on local people's existing behaviour and their own perceptions of what is desired, the likelihood of adoption on a sustained basis is questionable.

CHAPTER 2

LAND USER BEHAVIOUR AND UNPLANNED PARTICIPATION

Almost all ecosystem analyses of the behaviour of local land users in the Hindu Kush-Himalaya depict them as engaging in behaviour which is accelerating the deterioration of the mountain environments (Eckholm 1979; Rieger 1981). These analyses point to the farmer, herder, fuel collector, and other local people as the sources of increased soil erosion which watershed management projects are seeking to stem.

The following perspectives are representative of the range of opinions held by watershed management personnel and environmentalists on why local land users are inefficient conservationists :

- Local people are ignorant of the destruction they are causing to their environment.

- Local people are conservative and slow to adapt to changing circumstances (their old adaptations no longer being self-sustaining).

- Though they may know what they should do, local people only operate to maximise their immediate returns regardless of long-term costs (because they are desperate or greedy).

- Local people would act to conserve their environment if they were not constrained by structural factors (such as lack of tenure, lack of control over common lands, lack of markets, and lack of alternatives).

- Local people are in fact adapting to sustainable practices where conditions are favourable, though not necessarily at the speed desired by watershed managers.

Plate 4. Indigenous land user behaviour may still be in consonance with the goals of watershed management

Plate 5. Increasing scarcity of winter feed has resulted in the conservation of scree to alfalfa fields for stall feeding, an adaptive behaviour considered highly desirable by watershed management

Because of the tremendous ecological and cultural diversity of the Hindu Kush-Himalaya, such generalisations are simplistic at best. More significantly, these answers represent the diversity of views of watershed project designers and managers. Underlying this diversity, however, is the shared presumption that upland resource users' behaviour is environmentally destructive and unsustainable.

Without engaging in the debate on the degree of "rationality" in local land users' behaviour -- for which first one would have to identify whose rationality, and from which macro-perspective (Banskota 1985) -- it is useful to take a look at their behaviour over time.

The starting point for such an analysis is the fact that the people of the Hindu Kush Himalaya have been extraordinarily adaptive: a premise supported by their demonstrated capacity to inhabit the Region and increase their population. That many of them have changed their land use behaviour does not imply either that the conditions they are now facing are not significantly different or that particular land use behaviour may not have relatively long-term effects on the environment. However, it does assert the principle that **continuing adaptation to the environment within the context of maximising gain for least cost and risk,** is the principal means for individuals and groups to survive in the harsh conditions found in the Region.

Considerable evidence suggests that these adaptive behaviours are continuing and coincide with many of the changes sought by watershed management. Because adaptations can take place after a lag time in which the costs associated with maladaptations of old practices are high, positive trends are often more difficult to detect than negative ones. Old behaviours blind us to the changes people are already making.

On individually operated resources, the evidence for adaptive behaviours of the type watershed management experts would usually identify as positive is largely undocumented (Schroeder 1985; Campbell and Bhattarai 1983). Based on this limited evidence and our own field observations in China, India, Nepal and Pakistan, we hypothesise that the following trends in local people's land use behaviour are observable and becoming significant among land users in the Hindu Kush-Himalaya. While there is considerable uncertainty with regard to the actual effects of these trends, current opinion among watershed managers would understand them as "positive" (but see Hamilton 1985).

- Cropping intensity (multiple cropping) is increasing (China; Nepal; Pakistan).

- The amount and percentage of land devoted to horticultural crops is increasing (India; Nepal; Pakistan).

- The amount of irrigated land with bench terracing and water management channels is increasing (China; Pakistan).

- Perhaps with the exception of the eastern Himalaya in Bhutan and India, for which we do not have time series data, rotational slash and burn agriculture has declined and is continuing to decline (India; Nepal; Pakistan).

- The amount of sloping agricultural land being converted to terraces is increasing, while old terraces are being allowed to revegetate (India; Nepal).

- The percentage of livestock being stall-fed, and the number of stall-feeding months per animal are increasing (Nepal; Pakistan).

- The per capita population of livestock is decreasing (Nepal; Pakistan).

- The composition of livestock population is being changed to decrease the percentage of traditional cattle in favour of more buffalo and improved cattle breeds (India; Nepal; Pakistan).

- The numbers of trees per hectare cultivated on farm lands is increasing. The number and percentage of farmers planting trees is increasing (China; Nepal; Pakistan).

- The per capita consumption of fuelwood is decreasing (Nepal).

- The percentage of fuelwood obtained from private land is increasing (Nepal; Pakistan).

- House construction methods are being changed to utilise fewer timber resources (Nepal; Pakistan).

- The rate of seasonal and permanent migration is increasing (Nepal; Pakistan).

- The availability and amount of off-farm employment in the upland areas is increasing (China; India; Pakistan).

- Awareness of environmental degradation problems is widespread and increasing (China; India; Nepal).

On group and state resources, the widely identified negative trends, such as deforestation, overgrazing, and erosion, show less evidence of being countered by positive adaptations than on private lands. While even positive adaptations on private lands may be too slow to meet the expectations of watershed managers, the most severe degradation problems are found on public lands.

However, the Hindu Kush-Himalaya also provides evidence of positive trends on public lands. These are encouraging signs of local land users' motivations for reversing the tragedy of the over-used commons :

- One-third of the villages in hill Nepal have at least one local forest under local management and the number is increasing both spontaneously and with encouragement of the government.

- Traditional forms of cooperative grass cutting in Himachal Pradesh, India, are being maintained on public lands.

- Villagers (primarily women in some instances) have acted in concert under the banner of the *Chipko* movement in the Indian U.P. Himalaya to ban outside harvesting of their resources in favour of local control (Jain 1984).

In addition, some environmental degradation has led to behavioural changes now having a positive impact on public lands. For example, in Eastern Nepal the invasion of the *Eupytorium* weed has discouraged grazing on public lands and led to increased interest in alternative land uses such as forestry, tea and cardamom agroforestry.

These positive changes in land use behaviour, taking place outside the context of planned watershed projects, are the most important form of "participation" in conservation-oriented land use. This "unplanned" participation can form the most efficient starting point for watershed management. By focusing on what farmers and herders are presently doing to

adapt positively to changing circumstances, the cheapest and possibly most effective mode of people's participation can be found. This mode of analysis of watershed management projects can assist in identifying successful strategies. **The farmer who is motivated to sustain his/her own upland resources is the best participant a watershed management project can have.**

Understanding the motivations which underlie land user decisions to adopt more conservation-oriented behaviour thus becomes a major task in any effort to promote participation. There is little doubt that the types of adaptive behaviours noted above -- whatever their extent -- are largely responses to changing resource and economic conditions. In part, they reflect the changing opportunities and availability of new technologies and infrastructure associated with development. For example, many can be seen as adaptations to the increasing scarcity of public land resources such as grazing land, forests and bush areas for rotational agriculture (Campbell 1978). Other changes are more directly associated with government efforts to stimulate economic change, such as the provision of low cost loans for milk buffaloes or the construction of roads and opening of markets. Exogeneous factors such as the availability of off-farm employment in plains areas are also clearly of great importance.

Furthermore, implicit in the earlier categorisation of behaviour on private and group resources is the presumption that **resource security or ownership** is a key factor in influencing land user behaviour. The way and degree to which natural resources (land, water, trees, grass etc.) are owned by the local people appear to be primary determinants of the use of that resource. Resource ownership (which may include group ownership, traditional usage rights, long-term leaseholds etc.) affects the value and security of the resource: the basis for any decision making in which long-term sustainability is sought.

Following a review in Chapter 3 of how watershed management and related resource projects in the Hindu Kush-Himalaya are directly supporting people's participation, the resource ownership factors are developed into specific hypotheses in Chapter 4.

CHAPTER 3

PLANNED PARTICIPATION: A REVIEW OF PEOPLE'S PARTICIPATION IN ONGOING PROJECTS

Various incentives are provided by projects to obtain the cooperation of local people in conservation and resource management efforts. In order to understand this planned participation, a review of eighteen projects has been conducted in five countries of the Hindu Kush-Himalaya Region: Bangladesh, China, India, Nepal and Pakistan. Eight of the projects are explicitly watershed management projects, while the other ten are related resource management projects. The latter have been included in the survey because major components of these projects fall within the range of what are usually considered watershed management activities.

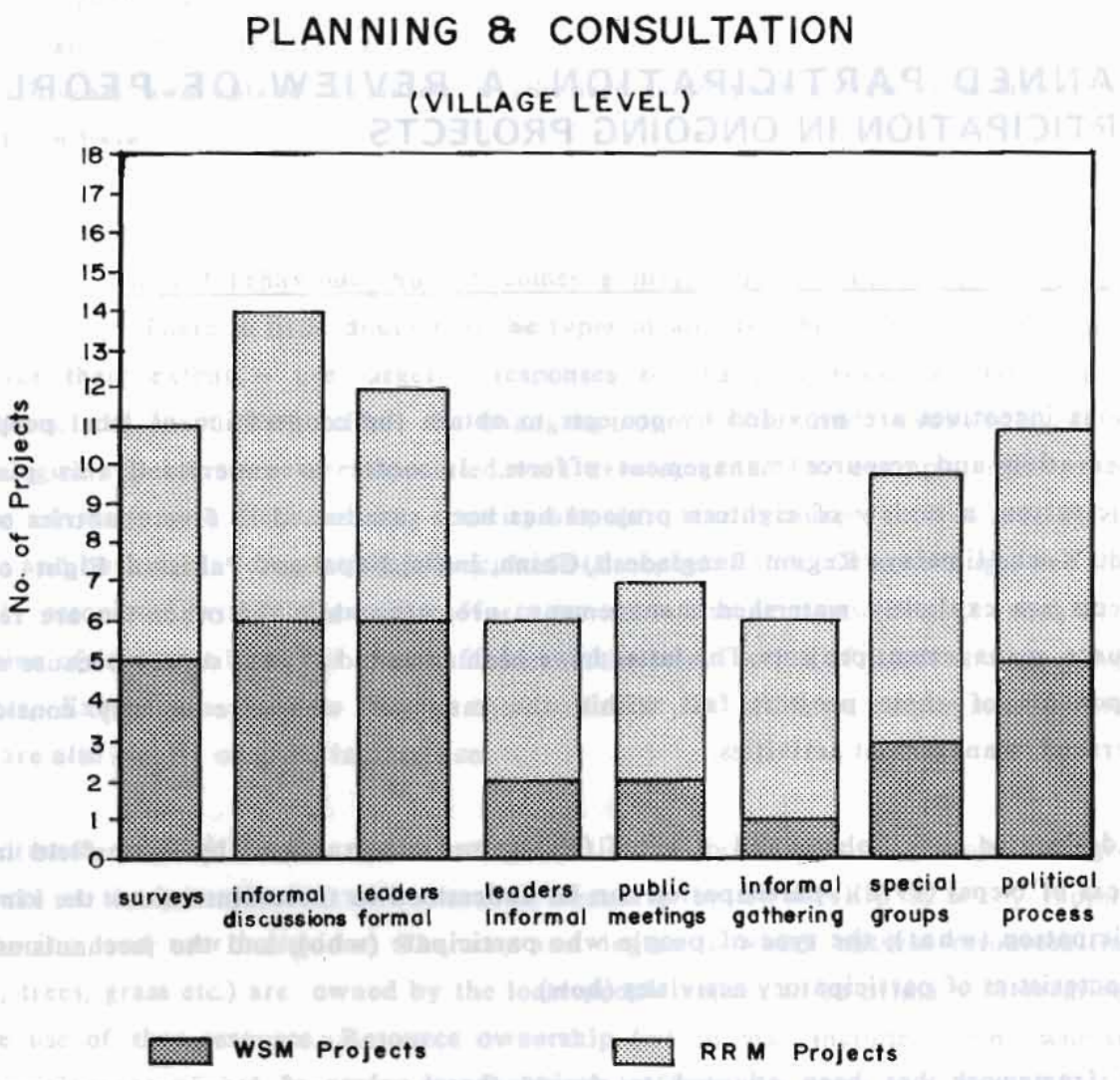
As delineated by Cohen and Uphoff (1977), and re-examined by Butterfield in the context of Nepal (1978), participation can be understood in three dimensions: the kinds of participation (**what**); the type of people who participate (**who**); and the mechanisms and characteristics of participatory activities (**how**).

This framework has been adapted to derive three points of inquiry to survey how watershed management projects in the Hindu Kush-Himalaya Region have incorporated and encouraged people's participation in project activities. Three formats for matrices were developed (Appendix 1) and administered to project personnel on the following subjects:

1. Forms of participation
2. Incentives used by projects (direct incentives)
3. Support activities undertaken (indirect incentives)

These data have been tabulated separately (Appendix 2) for watershed management (WSM) projects and related resource management (RRM) projects, in order to permit comparisons.

GRAPH I


PLANNING & CONSULTATION
(VILLAGE LEVEL)
No. of Projects
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
surveys
informal discussions
leaders formal
leaders informal
public meetings
informal gathering
special groups
political process
WSM Projects
RRM Projects

FORMS OF PEOPLE'S PARTICIPATION

The format for Matrix One applies the framework discussed above to the context of watershed management. Participation of people in project planning and decision making, including consultation and negotiation, is reviewed according to the level (national, regional, or village) at which it takes place.

Since this survey was limited to the project perspective, the question of **who** among the local people is actually participating has not been addressed. This important dimension has thus been noted within the format for Matrix One but only where there is direct evidence that participation is sought explicitly from underprivileged groups, such as the landless, or women, and special interest groups, such as shifting cultivators.

While this format provides a useful tool for surveying **what** kinds of participation are (and are not) being used for watershed management in the Hindu Kush-Himalaya Region, in addition to not identifying the various sets of actors involved, it also runs the risk of glossing over the details of the **interactional process** of participation. Given many of the prevailing norms of hierarchical and one-sided interpersonal interactions found in the Region, the mere incorporation of "informal discussions" or "public meetings" is no assurance that meaningful dialogue is taking place. This qualitative dimension of the participation process may, in fact, be more important for project success than the proliferation of avenues for interaction. However, quality and effectiveness can only be observed through in-depth participatory observational studies. For the purposes of this overview we are forced to rely on the hypothesis that the larger the number of mechanisms created for possible two-way communication, the more likely that some of them will succeed.

The format for Matrix One also allows for distinctions between participation in project implementation and ongoing management. Along the other axis, the resources on which these activities are undertaken are distinguished as state, group and private resources.

There does not appear to be much difference between WSM projects and RRM projects in participation during planning and consultations except in the use of informal discussions and public meetings which tend to be higher among RRM projects as shown by Graph 1. RRM projects also appear to focus more on special groups, such as the landless or women. What does not appear in this table is the fact that participation at the national level is restricted mainly to the political process largely through formal consultations with leaders.

Table 1. **Projects Using Various Forms of Labour**

TYPE OF ACTIVITY	*STATE RESOURCES*	*GROUP RESOURCES*	*INDIV. RESOURCES*
Implementation Labour			
Paid	8	6	4
Subsidised	0	8	9
Voluntary	1	6	10
Maintenance Labour			
Paid	9	7	3
Subsidised	1	6	5
Voluntary	0	6	15

The data on implementation and maintenance labour indicates that projects tend to use paid labour on state resources, and rely on a mix of voluntary and subsidised labour on group and private resources. In addition, WSM projects tend to use paid labour both on group and individual resources (Table 2).

Table 2. **Projects Using Paid Labour**

TYPE OF ACTIVITY	*WSM*	*RRM*	*TOTAL*
No. of projects	8	10	18
Implementation labour	8	8	16
Maintenance labour	7	6	13

There is, however, a significant difference in enforcement (Table 3). WSM projects rely more on fencing and forest guards while RRM projects rely more on local committees. There thus appears to be much less delegation of responsibility to the local community by WSM projects.

Table 3. Enforcement Methods Used by Projects

ENFORCEMENT	*WSM*	*RRM*	*TOTAL*
No. of projects	8	10	18
Local committees	3	8	11
Guards	6	3	9
Fencing	4	2	6

The following examples represent some of the forms of people's participation employed in the Hindu Kush-Himalaya, illustrating the distinctions which emerge from Matrix One:

- Results from the Matrices indicate that participation at the national level is largely limited to the decision making realm. Only in the case of the HMG/N-UNDP-FAO-WB Community Forestry Development Project did this consultation amount to a formal seminar with members of the *Rastriya Panchayat* (National Legislature) at the start of the project. All other consultations have been informal or limited to budget discussions.

- In the mid-eastern hills of Nepal, the Chautara Community Forestry Project (1973-78) actually initiated a process of consultation at the local and regional level for an afforestation programme designed to hand over management and control of the forests to the community. This was formerly inconceivable since all forest land was legally state property. By practically demonstrating that community involvement could work, the Chautara Project helped to prompt legislative change. The 1978 Forest Act now provides up to 100 hectares of *Panchayat Forest* and 500 hectares of *Panchayat Protected Forest*, which may be handed back to the *panchayat* by the Forest Department. The Nepal/Australia Forestry Project (NAFP) is currently carrying out an expanded version of the same social forestry approach in Sindhupalchok and Kavre-Palanchok districts, which includes the original Chautara area.

- The experiences of the Phewa Tal Watershed Management Project, the Indo-German Dhauladhar Project, the Community Forestry Development Project, the Nepal/Australia Forestry Project in Nepal, and the Aga Khan Rural Support Programme all point to the far greater effectiveness of community organisations at the *panchayat*/village level compared to the regional/district level.

INCENTIVES USED TO SUPPORT WATERSHED MANAGEMENT ACTIVITIES

The format of Matrix Two (Appendix 1) was designed to examine different incentives used by projects to support watershed management. The activities for which incentives are being provided have been classified in accordance with their significance for individual/household resources, group resources, and state/government resources. At the level of the individual or household, the activities listed pertain primarily to land use changes. At the group and state levels, activities include both land use changes, and engineering measures. Incentives have been categorised as cash incentives, incentives in kind, and incentives in the form of enhancement of resource security through policy measures or administrative action.

Table 4. Forms of Incentives Used : Summarised Data

ACTIVITY	*WSM*			*RRM*		
	c	*k*	*s*	*c*	*k*	*s*
1. Individual Resources						
1.1 Land use changes	6	8	2	2	10	5
1.2 Livestock management	2	8	0	1	5	1
2. Group Resources						
2.1 Land use changes	3	8	1	5	6	5
2.2 Engineering measures	2	7	0	3	6	0
3. State Resources						
3.1 Land use changes	2	5	1	3	5	2
3.2 Engineering measures	3	7	0	5	7	0

[c = cash : k = in kind : s = resource tenure security]

The summarised data from Matrix Two (Table 4) clearly shows that WSM projects rely on cash incentives to induce land use changes on individual resources more than RRM projects. Incentives in kind (in the form of free seedlings, free energy-saving stoves, subsidies for terrace improvement or horticulture, etc.) are used by both kinds of projects for a variety of watershed management activities. In other words, most projects have decided that it is necessary to provide sufficient incentives to farmers to adopt land use practices which are considered desirable by watershed managers both on private and on group or state resources.

The table also indicates that RRM projects rely on enhancement of resource security for all three classes of resources to a much greater degree than WSM projects do. The data may be misleading in that only those RRM projects which had an explicit component considered relevant for watershed management were included in the sample. If there is a bias in their selection, the fact remains that, with the exception of the XIJI Watershed Project in China, WSM projects are not using resource security as a possible incentive. The use of this incentive by RRM projects points to the possibility of WSM projects emulating them, provided adequate political will and policy support exist.

Table 5. Incentives Used for Individual Households by WSM Projects

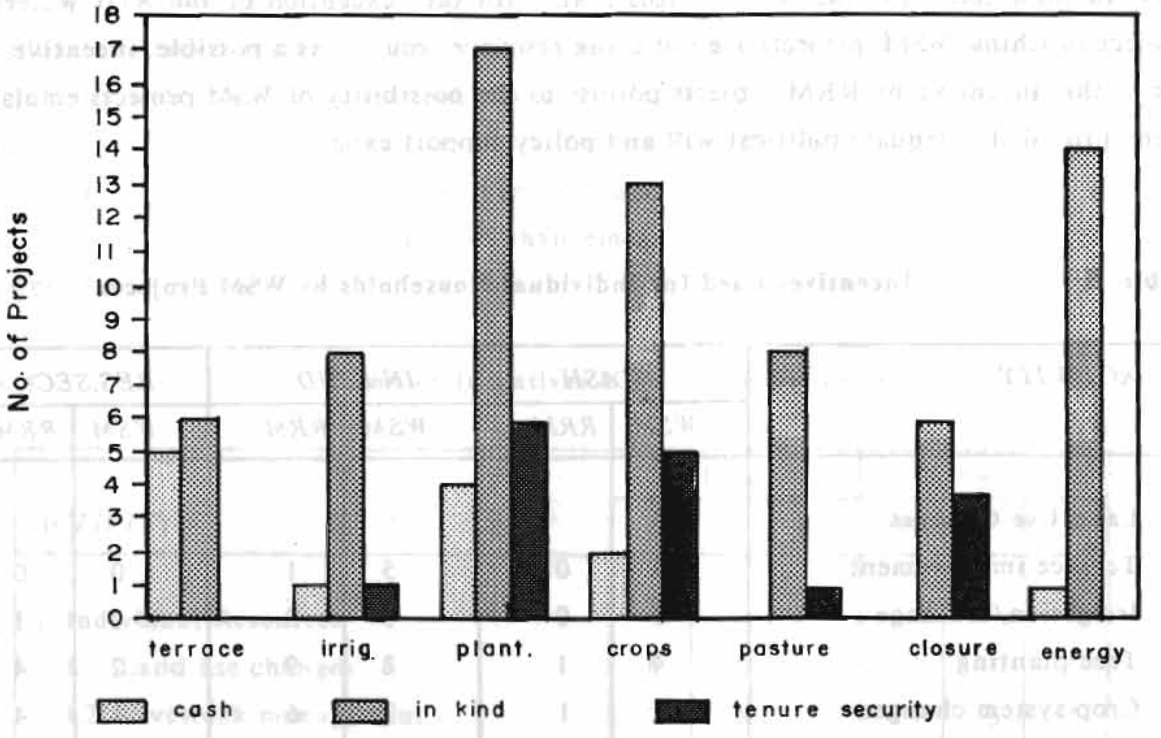
ACTIVITY	*CASH*		*IN KIND*		*RES.SEC.*	
	WSM	*RRM*	*WSM*	*RRM*	*WSM*	*RRM*
Land Use Changes						
Terrace improvement	5	0	5	1	0	0
Irrigation/drainage	1	0	5	3	0	1
Tree planting	4	1	8	9	2	4
Crop system changes	1	1	7	6	1	4
Pasture development	0	0	6	2	1	0
Land closure	0	0	4	2	0	4
Alternative energy	1	0	7	7	0	0
Livestock Management						
Improved breeds	1	1	5	3	0	1
Changing herd comp.	1	0	4	0	0	0
Stall feeding	0	0	3	1	0	0
Vet. training	0	0	7	3	0	0

Incentives are provided for a variety of watershed management activities on individual/household resources (Table 5). For all kinds of projects, incentives in kind seem to be preferred. This is particularly clear in the case of livestock management for which, with the exception of two WSM projects (Dhauladhar Project in India and Phewa Tal Watershed Project in Nepal), one RRM project (Kosi Hill Area Development Project in Nepal) which used cash incentives, and the RRM project in Lhasa which used resource security, only incentives in kind have been relied upon.

GRAPH 2

INCENTIVES ON INDIV. RESOURCES

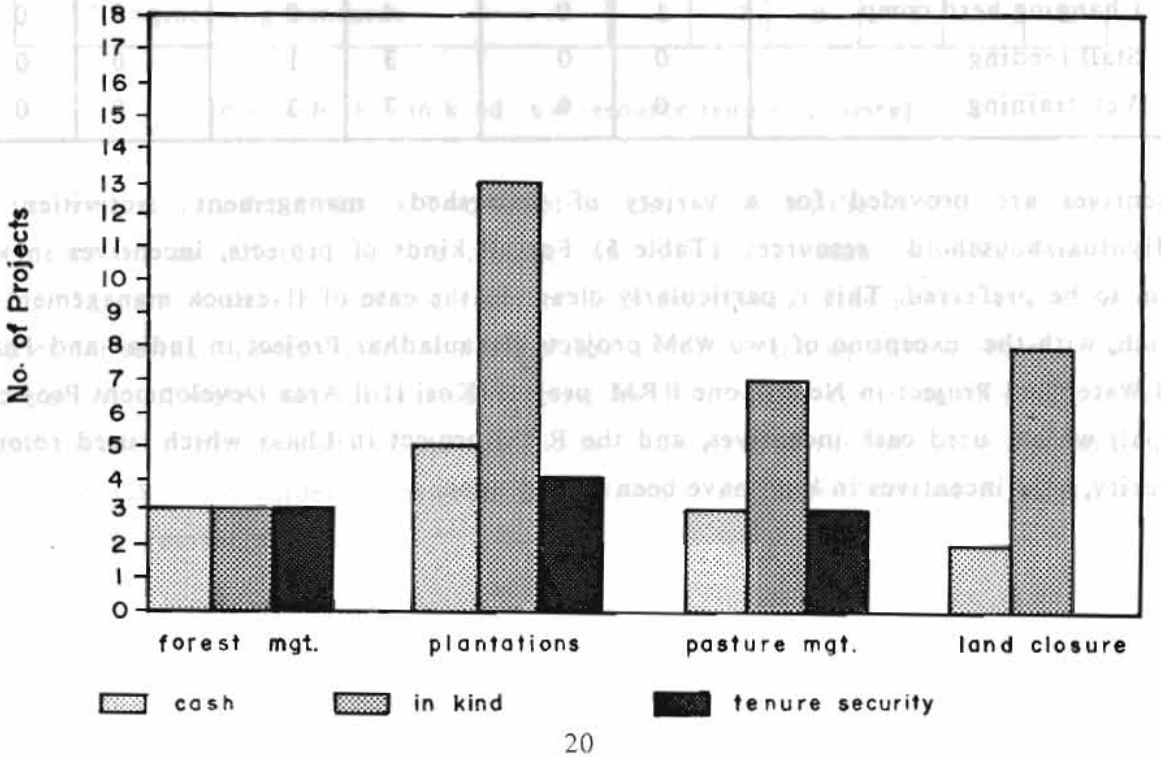
(LAND USE CHANGES)



GRAPH 3

INCENTIVES ON GROUP RESOURCES

(LAND USE CHANGES)



The emphasis in WSM projects has been, however, largely on inducing desired land use changes. Graph 2 clearly shows that on-farm planting of trees, appropriate technology for energy use, and cropping system changes have been highest on the priority list of watershed managers.

Even on group resources, tree plantation ranks highest on the list of activities for which incentives are provided by watershed managers (Graph 3). Surprisingly, natural forest management ranks lowest in terms of priorities. In fact, of all the WSM projects studied, only the Resource Conservation and Utilisation Project in Nepal is seeking to induce natural forest management on group resources. Two RRM projects in Nepal (Community Forestry Development Project and the Nepal/Australia Forestry Project) are also doing so.

Even on state resources, where the bulk of forests in countries of the Hindu Kush-Himalaya Region lie, natural forest management is unexpectedly low. It has been documented only for one WSM project (Dhauladhar Project in India) and one RRM project (Hill Tract Development Project in Bangladesh). Clearly, this is an area with considerable potential for watershed managers.

Table 6. Incentives Used for Group Resources

INCENTIVE	*WSM*	*RRM*	*TOTAL*
No. of projects	8	10	18
Cash	4	5	9
In kind	8	7	15
Resource security	1	5	6

The provision of more acceptable forms of tenure by RRM projects as incentives becomes all the more evident at the level of group resources (Table 6). In contrast, resource security as an incentive is strikingly rare among WSM projects, both on group and state resources.

A number of projects in Nepal (for example, the Community Forestry Project) and Bangladesh (Hill Tracts Development Project) facilitate deregulation of government lands and the transfer of these lands to the local community. Both forest management and planned benefit sharing ensure active local participation. The key motive in this case is increased security of tenure which leads to more secure forms of benefit sharing and resource utilisation.

Data from a multi-sectorial development project in the Northern Areas of Pakistan provides a slightly different example. Although the project is not in a position to provide security of tenure, the project does provide appropriate inputs for the development of a productive physical infrastructure. Given the scarcity of resources in that remote rain shadow area, the infrastructure scheme identified and implemented by the Village Organisation serves to enhance the total amount of resources available to the village. In other words, it increases resource value and resource renewability, while enhancing resource user management.

Reallocation or distribution of the additional resources generated is left to the discretion of the Village Organisation, but an average of one-fifth of the additional land rendered cultivable is reserved for afforestation and for plantation of fruit trees, from which complete benefits will accrue to the villagers. In this case, the land use behaviour is changed indirectly. Whereas previously, almost all of the irrigable land was used for food production, with poplars, willows, Russian olive, and fruit trees being planted on the bunds and risers, now a part of the land developed is earmarked for woodlots which are intended to provide fuelwood, fodder, and fruit (AKRSP: 1984). Given the existing shortages of fuel and fodder in the area, farmers are beginning to accept the wisdom of increasing the amount of land actually allocated for such purposes.

These examples illustrate some of the interesting results which the matrices are beginning to reveal. By default, the same matrices also reveal what may be a fatal flaw in many projects: the divorce of the notion of participation from the role of the bureaucracy and project personnel. This does not mean to say that people representing these institutions do not participate in watershed management. The point is that frequently project personnel do not perceive their role as participatory, but take their role for granted. It is the local population which is considered recalcitrant and which is consequently induced or goaded along the 'desired track'.

This top-down approach can lead to 'holier-than-thou' attitudes which are counter-productive. Appropriate institutional support is vital for any sort of participatory development. The role of the institutional structure and the attitude of its functionaries are as vital to the outcome of the project as are those of the local community. What is required is a reorientation of the bureaucratic functionaries. The concept of "bureaucratic reorientation" emerged as an objective and a strategy in the Gal Oya Water Management Project in Sri Lanka (Uphoff 1985). The development of sympathetic attitudes and more supportive actions by relevant officials and technicians emerged as a **sine qua non** of participatory development.

A number of strategies can be suggested for supporting resource user management. The following list has been adapted from Esman and Uphoff (1984) and Uphoff (1985):

- Bottom-up local organisation and bureaucratic reorientation reinforce each other and should be undertaken concurrently. If participatory working relationships are not part of the implementors' work environment, it is unlikely that they will be effective with the farmers.

- Good action speaks louder than words; commencing implementation is more important than comprehensive surveys by organisers which may prove to be counter-productive in some circumstances, and the organisational effort should be linked to, and commensurate with, the nature of the resource management activity.

- Local resource users, particularly the non-elite, should be talked to individually before organising formal meetings.

- Farmer organisation is more likely to succeed if introduced by specially recruited and trained "catalysts" rather than by the regular government staff.

- There is need for continuing support by organisers through joint management arrangements even after initial local organisations have been established.

These strategies seem to be in consonance with the experience of watershed management reviewed in this study. However, they need to be tested in the field and refined through further research and documentation of actual project experiences.

ACTIVITIES UNDERTAKEN TO SUPPORT PARTICIPATION

The format for Matrix 3 (Appendix 1) was designed to help identify and analyse activities undertaken by projects to support participation. These activities include: policy measures; research, monitoring and evaluation; training and communication; and local organisational support. While the effectiveness of these activities depends on a variety of factors which frequently differ within the Hindu-Kush Himalaya Region, these measures constitute the principal tools for fostering local initiative and bringing the project and local people's perspectives closer together.

Table 7. Policy Measures Supporting Participation

ACTIVITY	*WSM*	*RRM*	*TOTAL*
No. of projects	8	10	18
Resource tenure security	2	7	9
Market support	1	4	5
Off-farm employment	4	6	10
Land use regulations	3	3	6
Group organisation legislation	4	3	7

POLICY MEASURES

Among the large range of relevant policy considerations, this study is confined to those detailed in Table 7. Tabulated data from Matrix Three reveals that WSM projects tend to be based more on policy measures dealing with land use regulations, off-farm employment, and group organisations than with resource tenure security or marketing support. On the other hand, the RRM projects in our sample tend to rely more on policies pertaining to resource tenure security, market support, and off-farm employment.

This difference between WSM and RRM projects, however, is also related to legislation within countries. Some countries have developed legislation and policies that directly encourage participation while others have not. For example, the allocation of public lands for resettlement in Bangladesh and India, the responsibility system in China, and *Panchayat forestry* in Nepal are institutional developments sanctioned by appropriate policy measures.

In Nepal, such policy support for participation has taken the form of *Panchayat Forestry* Legislation which legally allows for the transfer of forest land resources to local communities and attempts to increase the certainty of benefit receipt through the use of written agreements or management plans. More recent legislation has enabled these local communities to be defined by resource use boundaries rather than administrative units, further enabling the local communities to take greater responsibility for the resource.

In Bangladesh, current legislation places Unclassed State Forests (USF) and land termed *khas* under the disposition of the Deputy Commissioner who is authorised to allocate up to five acres of flat alluvial land or ten acres of hilly land to tribals and marginal farmers for land development on a rental basis or for permanent settlement. Current programmes of the Forest Department and the Chittagong Hill Tracts Development Board invoke this legislation to resettle shifting cultivators (*jhumias*) and to protect the land and make it productive. Traditional rights of the tribals are not disrupted. They retain the right to obtain firewood and timber for personal use from the USF but are increasingly being induced to protect forest plantations by being provided employment on daily wages and a share of the income from the plantations which they protect.

Similarly, in areas such as Gilgit and Hunza, traditional rights over upland ranges have been respected in recent programmes. Furthermore, the Gilgit project has established a policy of working only under written contracts with newly formed Village Organisations, which are required to represent all households in the community. As formerly common lands with low productivity have been upgraded, these policy measures have allowed local people to take the initiatives necessary to ensure their productive and equitable use.

These brief examples are from data collected for Matrix Three which illustrates the kind of policy measures encouraging participation: higher resource security through transfer of tenure rights to local communities, the establishment of legal user groups, and the use of written contractual agreements. Further research may identify other measures which increase the security and value of investments on private and leased lands through legislation, marketing arrangements, and implementation policies.

RESEARCH

The extent to which research supports greater people's participation depends on its immediate applicability and dissemination. For these reasons, we find that on-farm trials and experimental plots on community lands, which start from a farming systems approach, appear to have the greatest short-term impact. Not only does this kind of research ensure its applicability to present land use systems, but it serves as a demonstration of what changes and adaptations can be easily carried out under existing conditions.

Table 8. Research and Evaluation

ACTIVITY	*WSM*	*RRM*	*TOTAL*
No. of projects	8	10	18
Research			
On-farm trials	7	5	12
Community resource trials	6	6	12
Sub-total field trials	8	7	15
Evaluation meetings	6	7	13

All WSM projects and most RRM projects examined are carrying out field trials (Table 8). Examples of such on-farm trials of fodder and fruit trees can be found in the Nepal/Australia Forestry Project (NAFP) in Nepal. Field trials on community forest lands can be found in a number of watershed and forestry projects in the Region, although many projects have reduced the participatory impact of such trials by conducting them with little or no local involvement. Participatory research would appear to be an area with considerable potential for further use within the Region.

MONITORING AND EVALUATION

Monitoring and evaluation can serve as one of the most effective measures for increasing participation through bringing together the perspectives of both the local people and project personnel. By providing regular feedback on people's responses to watershed policies and programmes, monitoring and evaluation allows project personnel to adjust their understanding and programmes to the actual motivations and problems faced by upland resource users. The use of participatory monitoring and evaluation methods in which local people themselves evaluate policies and activities can further enhance this process.

Most projects in the Region use some form of household survey and informal interviewing of local inhabitants. The frequency of the surveys (Appendix 2), however, indicates that they seldom form part of a complete monitoring and evaluation system.

The Community Forestry Project has developed a comprehensive monitoring and evaluation system which relies on annual surveys, special studies, and annual district meetings to identify problems and successes. NAFP in Nepal and AKRSP in Pakistan have instituted local participation in regular evaluation meetings. Some projects have extensive systems for monitoring physical processes in the watersheds; however, there is little evidence of monitoring of land users' own trends and project staff performance, which would appear to be important to increasing effective participation.

TRAINING

Training is currently conducted for project staff in most of the projects reviewed (Graph 4). Some, such as the FAO watershed projects in Nepal and Pakistan, have devoted considerable resources to provide training to their own staff. Projects such as the Dhauladhar Project in India, and NAFP and Community Forestry in Nepal, also have extensive training programmes for locally recruited paraprofessionals. Community Forestry also provides reorientation training to officers in communication and participation methods.

Given the importance of training in fostering participation, lack of evidence of extensive community leader training programmes is a matter of concern. While some projects sponsor study tours for local *panchayat* leaders, considerably greater attention could be devoted to this method for facilitating local responsibility for resource management. In addition to training in watershed management technologies, this may require training in the skills required to run local organisations, such as accounting and management.

COMMUNICATION

Underlying all of our analyses of participation is the conviction that adequate two-way communication is essential to effectively use participation on the mass scale necessary to address the problems in the Region.

National, bilateral and multilateral projects in the Hindu Kush-Himalaya Region are relying on a large number of media (Table 9) for communication to the people. These include: radio, films, filmstrips, slides, newsletters, flip charts, posters, calendars, stickers, buttons, brochures, T-shirts, and signboards. Face-to-face extension, which allows for the possibility of two-way communication, is also being used in most of the countries analysed.

GRAPH 4

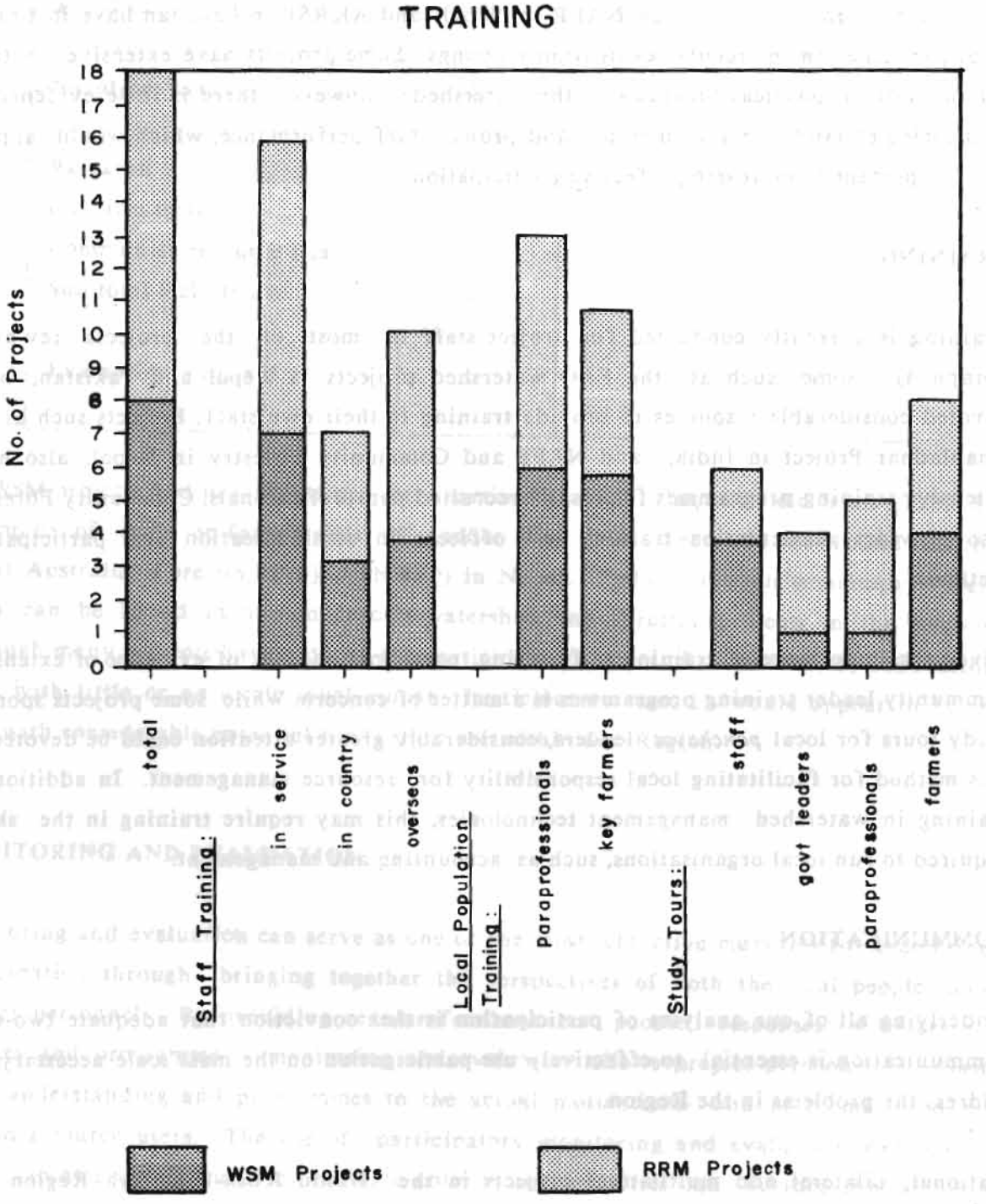

TRAINING
No. of Projects
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
total
in service
in country
overseas
paraprofessionals
key farmers
staff
govt leaders
paraprofessionals
farmers
Staff Training:
Local Population Training:
Study Tours:
WSM Projects
RRM Projects

TABLE 9. COMMUNICATION

ACTIVITY	*WSM*	*RRM*	*TOTAL*
No. of projects	8	10	18
Media Use			
Printed	2	7	9
Audio-visual	6	7	13
Other	2	1	3
Sub-total media use	6	7	13
Individual Extension			
Community leaders	1	8	9
Paraprofessionals	6	7	13
Farmers	5	4	9
Local govt. reps.	7	8	15
Sub-total indiv. ext.	8	10	18
Group Extension			
User groups	2	3	5
Schools	2	2	4
Women	3	1	4
Ex-servicemen	2	2	4
Sub-total group ext.	5	7	12

While identifying the types and means of communication continues to be an important task, need to focus more attention on the **quality** and effectiveness of the communication techniques used is obvious. How many of the media have been pre-tested with end-user audiences for intelligibility ? How much and what kind of training has been imparted to extension agents ? Are the extension agents the right people for the kind of participatory communication desired ? What mechanisms are there for communication to flow **from** the people to the project ? These are among the questions which will require additional attention in the future if efficient participation is to be encouraged.

LOCAL ORGANISATION

Local organisations -- whether existing or created -- are being used by a number of watershed projects to foster participation, although the extent of their responsibility varies considerably. This subject has not been dealt with separately because it is too complex to be condensed into a generalised matrix, but it has been an area of concern throughout this study. As discussed earlier (Table 3), this appears to be an area to which WSM projects need to pay more attention. RRM projects seem to have a better record in relying on local organisations for enforcement of project activities.

The importance of non-governmental organisations and group mobilisation that extends beyond just the local resource users needs to be pointed out. Given the magnitude of the problem, all available resources for supporting mass action by groups outside of government need to be mobilised. By devolving responsibility and authority from government to these groups and providing them with increased capacity and resources, it may be possible to expand the scope of watershed activities beyond that of which governments are capable. Such an initiative has been taken in India by involving non-governmental organisations and organising youth groups through eco-development camps and eco-development task forces (Dewan and Sharma 1985).

In sum, this brief review demonstrates that a wide variety of project-sponsored measures to encourage participation are being undertaken in the Hindu Kush-Himalaya Region. The diversity of approaches undertaken likely reflect both the diversity of social, political and environmental conditions found within the Region, as well as the diversity of opinions regarding the most effective means for supporting participation. It is evident that a number of promising strategies are currently being employed. However, it is not known which of these are most effective, under what conditions, and to what extent they are an efficient measure for facilitating people's own implementation of desired watershed actions. In addition, support for participation varies greatly between watershed management projects and other related resource management projects. There is a demonstrable need for identifying the most effective strategies and promoting the opportunity and ability of projects to learn from each other.

CHAPTER 4

IMPLICATIONS FOR PROJECT DESIGN AND EVALUATION

Plate 6. Where land user behaviour is conservationist, a facilitating role by projects would result in sustainable productivity on an extensive scale

As defined at the beginning of this paper, people's participation has been approached as a means for achieving the objectives of watershed management: sustainable productivity and a reduction of erosion induced by human activity. As such, it encompasses all conservation-oriented behaviour regardless of whether or not it has been directly influenced by projects or indirectly by other factors. In either case, the degree to which the upland resource users' actual land use behaviour contributes to the goals of watershed management is the most important indicator of people's participation.

The criteria by which people's participation must be evaluated are thus the same criteria applied to all development projects in the Hindu Kush-Himalaya Region: efficiency, productivity, and equity, with the proviso that the productivity be sustainable over the long term through the conservation of natural resources. The primary question facing policymakers is: how can people's conservation - oriented behaviour be most efficiently supported to achieve the sustainable and equitable productivity sought ?

Table 10. The Participation Potential of Existing Land Use Behaviour

LAND USE BEHAVIOUR	*PARTICIPATION POTENTIAL*
1. Positive land use behaviour (as defined by watershed managers) already being undertaken by uplanders (mostly on private lands or high security resource tenures)	1. Participation already exists; high potential accelerating the adaptations through judicious use of incentives and removal of existing disincentives, e.g. positive trends towards planting trees on private lands are being accelerated by projects providing seedlings
2. Negative land use behaviour for which uplanders already have visible alternatives which uplanders would change themselves if current disincentives and constraints were removed or mass action mobilised (mostly on public lands with currently low security resource tenure)	2. Depending on nature of disincentives and constraints, good potential for participation through removing disincentives and strengthening basis for mass mobilisation, e.g. reduction of tenure insecurity by establishment of communal forests and local organisations to improve resource management, and removal of bureaucratic disincentives by spontaneous movements such as the *Chipko*
3. New land use behaviour which uplanders do not yet perceive in their interest to adopt (either private or public)	3. Low potential for participation unless new technology happens to fill adaptive niche; if this behavioural change is necessary for downstreamers, projects have to provide long-term and costly incentives or resort to costly coercive measures, e.g. the substitution of high milk yielding buffaloes for cattle is readily acceptable, whereas converting all sloping fields to terraces requires a high level of subsidy

The watershed management and related resource management projects reviewed in Chapter 3 represent the most directly planned attempts by governments and development agencies to achieve these goals. This review documented and compared the variety of strategies used by projects in the Region, including the incentives provided and the support measures undertaken to encourage the desired behaviour.

At the other end of the continuum of people's participation, Chapter 2 identified some of the behavioural trends evident in the Region independent of direct resource management project influence. By calling attention to existing trends of conservation-oriented behaviour, the analysis suggested that these "unplanned" or indirectly sponsored behavioural trends could represent the lowest cost means for achieving the desired goals of watershed management.

As the participation continuum presented in the Introduction indicates, the difference between "unplanned" and "planned" participation is a matter of degree. From the point of view of the land user -- the real decision-maker -- the distinction is artificial. It is from the watershed project manager's or government policy maker's perspective that the degree of direct effort to influence the land user through incentives and disincentives is meaningful. It is from this latter perspective that programmatic decisions are required to determine which incentives to apply at what cost. By extending the concept of participation to cover all land user behaviour which contributes to the objectives of watershed management, it becomes evident that existing positive behaviour trends are more efficient to support, through indirect incentives, than the introduction of completely new behaviours requiring expensive subsidies or coercive measures.

Table 10 presents a preliminary framework for identifying the possible cost for eliciting sustainable participation.

Participation is a function of land users' current motivations and behaviour. Inducing new behaviour and motivations is possible, but often costly in time and money. The magnitude of the task in the Hindu Kush-Himalaya is enormous. Watershed management projects face a choice: either they can operate on a large scale quickly to encourage that land use behaviour in which the potential for participation is high (extensive preventive), or they can attempt comprehensive solutions over a long term in small areas (intensive curative).

These two approaches to watershed management need not be mutually exclusive, although it should be recognised that the more resources are devoted to one, the less are available

for the other. As discussed at the International Workshop on Watershed Management held in October 1985 in Chengdu, China, the **intensive curative** approach is appropriate to small areas where large investments are justified by other productive investments such as downstream dams, while the **extensive preventive** approach is likely to be more efficient for most of the upland areas.

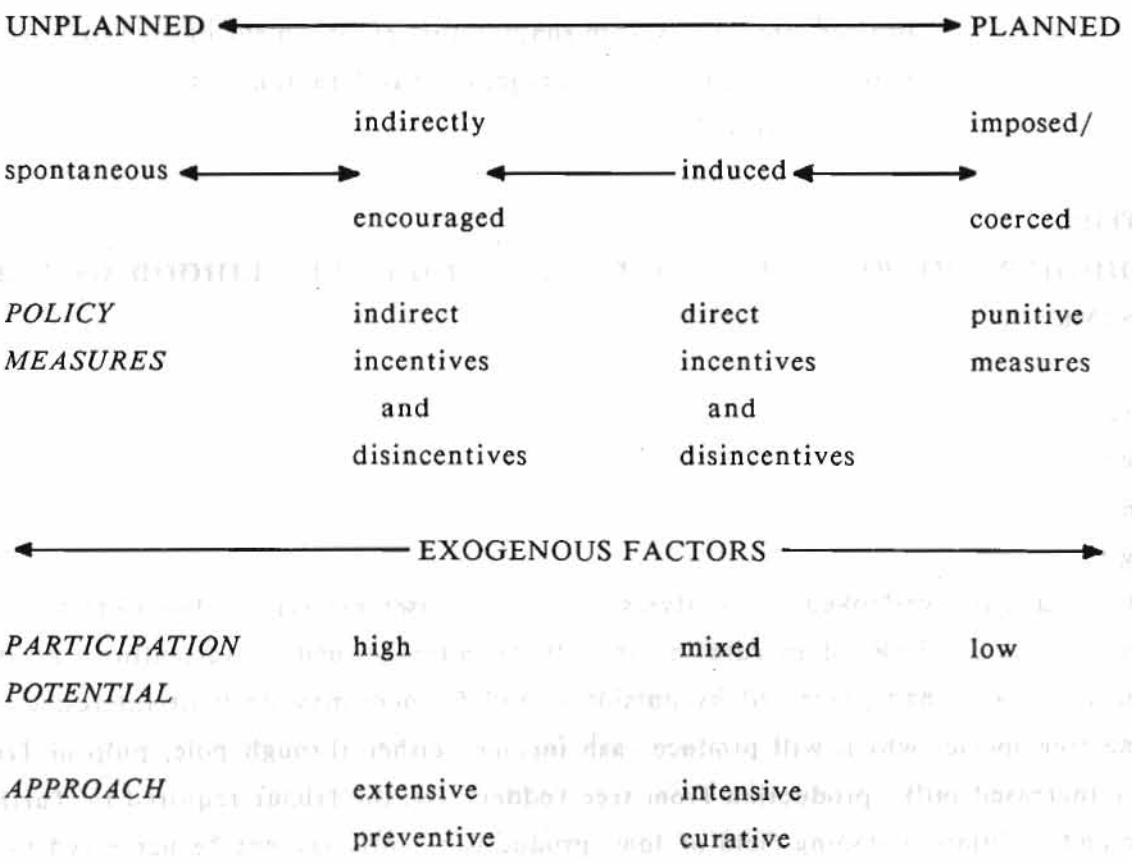
As reported in Appendix 3, the cost of watershed management projects surveyed in this study is high. Given the difficulty of extending resources of this magnitude to all of the Hindu Kush-Himalaya, it is evident that more attention needs to be paid to the extensive preventive approach with higher participation potential. Even if net reductions in siltation rates downstream are used as the indicator for watershed management success, it is our contention that encouraging land users in behaviour for which they are already motivated on a large dispersed scale will have more effect than comprehensive attempts at managing all aspects of soil and water conservation in limited watersheds. The more land users participate on their own, the more easily objectives may be met. Encouragement is more effective than coercion; facilitation is more efficient than implementation.

In other words, the central hypothesis is that the most efficient way to promote participation is to reinforce existing motives and behaviours that suit the goals ; the next is to remove barriers which restrain desired behaviours; and the least efficient is to try and restructure motives and introduce new behaviour patterns through heavy subsidies for coercive measures.

This understanding of the approaches to fostering participation in watershed management can be represented through an extension of Figure 1.

The key characteristic of resource use behaviour which contributes to meeting the objectives of watershed management (that is, "participatory behaviour" in the terms of this study) is that it is **sustainable** over the long term. Sustainability of the resource implies that its productivity is renewable and no irreplaceable resources (such as soil or nutrients) are being depleted more than they can be replaced. This type of conservation-oriented behaviour is thus characterised by a longer time horizon than is assumed by most cost-benefit analyses and rests on the resource users' willingness to invest in the resource's return for future generations.

Figure 2. **Types of Participation**



Focusing on policy measures and direct/indirect incentives which are more amenable to control than exogenous variables, sets of specific hypotheses regarding key factors influencing people's participation are proposed. These resource-related hypotheses are not intended to be exhaustive, but rather to provide a framework by which the larger issues of people's participation in watershed management can be evaluated and the implications for project design more clearly identified. Although they are based on our analysis of available materials, they need to be refined, tested and investigated in the varying conditions within the Region to find out the conditions under which they are supported or refuted. Refutation will be as valuable as confirmation in helping to identify the key leverage points for encouraging more successful people's participation in the goals of watershed management.

Long-term, conservation-oriented resource behaviours are directly related to the perceived **resource value, resource renewability, resource security, resource user management,** and **resource equity** (see Romm, 1984 for a similar set of hypotheses). Each of these perceived resource characteristics are in turn related to a number of factors, some of which are

amenable to policy and project manipulation such as the incentives and supporting measures reviewed in Chapter 3. To the extent that watershed management or related resource management projects are involved in shaping the environment of resource users' decisions, it is proposed that appropriate **project facilitation** is also crucial to encouraging conservation-oriented behaviour.

HYPOTHESIS 1 :

THE HIGHER THE RESOURCE VALUE, THE MORE LIKELIHOOD OF USER INVESTMENT IN FUTURE RETURNS.

Resource value is a measure of the perceived benefits less the perceived cost: the returns received by the resource user. This hypothesis reiterates the most fundamental economic dictum: the more income expected from the resource, the more likely a user/producer is willing to invest the effort and cost required to harvest the resource. Despite its simplicity, this is frequently overlooked in analyses of resource user behaviour. For example, the perceived value of firewood in rural areas with abundant wood or agricultural residue may be far lower than perceived by outsiders, and farmers may be most interested in planting tree species which will produce cash income either through pole, pulp or fruit sales or increased milk production from tree fodder. Or, the labour required to further terrace and maintain a sloping field of low productivity soil may not be perceived to be worth the additional long-term returns which might be obtained.

A large number of factors influence resource value: subsistence needs, cash returns, appropriate technology, investment requirements,labour requirements and timing, infra-structure availability, political benefits, socio-cultural values, credit availability, and subsidies, are among them.

The review of projects in Chapter 3 demonstrates that the importance of economic incentives is widely recognised. Often, however, the perceived economic value of a resource to the user is not adequately taken into account.

To the extent that existing project strategies are an effective guide, it appears that cash incentives are most appropriate for use on state resources, in kind incentives for group resources, and appropriate technologies and strategies to ensure adequate returns for private resources.

HYPOTHESIS 2 :

THE QUICKER AND MORE EFFICIENT THE RENEWABILITY OF THE RESOURCE, THE GREATER THE LIKELIHOOD OF SUSTAINABLE USE.

There is a greater likelihood of upland users adopting sustainable strategies if the resource is more quickly and easily renewable. Though modern plains agriculture is sustained through the provision of outside inputs to replace soil nutrients, upland residents are typically blamed for failing to replace or allow natural replacement of the resources they use. To the extent that resources being used can be renewed quickly through either natural or artificial means, it is hypothesised that upland residents will be willing to invest in the means for that renewal.

The implications of this hypothesis are that efforts should be concentrated on resource technologies which allow for earlier renewal through efficient means, as long as they also meet the criterion of the first hypothesis -- economic return. For example, this hypothesis implies that short rotation coppice tree species are more likely to be used on a sustained basis than long rotation species requiring artificial propagation. Similarly, it suggests that efforts could be more profitably devoted to finding means for replacing nutrients such as nitrogen in short rotation shifting cultivation (perhaps through agroforestry) than in attempting to introduce longer rotation tree crops. Where longer term benefit cycles are unavoidable, it suggests that mechanisms should be sought to make the economic returns from the resource available earlier such as through credit against future harvest or the availability of high value intermediate products such as fodder grass.

HYPOTHESIS 3 :

THE HIGHER THE TENURIAL SECURITY OF THE RESOURCE TO THE USER, THE LONGER THE TIME HORIZON OF LOCAL RESOURCE MANAGEMENT.

Local users' resource tenure rights, though frequently ambiguous and contradictory on public lands, pervade all land categories. Where tree trunks may be owned by governments, their leaves and branches are generally used by the people; where the right to cultivate is prohibited, the grass growing on the ground is used by the people. Except for replanted areas sealed off by fencing, wildlife and domestic livestock have equal privilege to feed on all but private lands currently under agriculture.

According to this understanding, the negative trends evident on public lands (deforestation, overgrazing, encroachment) are crucially related to the fact that they are a public resource with low resource tenure security. While a number of issues are involved in the problem of common and state property resource management, the lack of clearly defined ownership rights is central. On these lands, watershed management has the biggest responsibility and the biggest opportunity to achieve reduced soil loss alongside increased productivity in the Hindu Kush-Himalaya.

A number of factors are hypothesised to influence resource security, of which many are amenable to policy and project support. In addition to legislated resource tenure rights, there are traditional usage patterns which may be at variance with official legislation. The degree of risk associated with obtaining final returns can also be affected by exogenous factors such as weather, pests, and international markets. The credibility and explicitness of any contractual agreements with government are also likely to be important factors in determining perceived security of the resource.

The overall implication of this hypothesis is that the security of people's resource tenures may be one of the most important prerequisites to encouraging people's motivations for upland conservation, particularly on public lands. Not only must the resource have high value and be efficiently renewable, there must also be security of long-term ownership or rights to reap the benefits, including inheritability across generations. Perhaps most importantly, this security must be credible. In most countries of the Region, it is likely that a package of policy measures, including legislative support for group ownership of common resources, and mechanisms for increasing people's confidence in the eventual receipt of benefits are required. Examples include the *Panchayat Forestry* legislation in Nepal, permitting allocation of forest land for agroforestry in Bangladesh, and the introduction of the Responsibility System in China, all of which transferred resource rights from the State to the people.

HYPOTHESIS 4 :

THE MORE ACTUAL USERS HAVE RESPONSIBILITY FOR MANAGEMENT DECISIONS OVER RESOURCES, THE MORE LIKELY THE RESOURCE IS TO BE MANAGED FOR LONG-TERM PRODUCTIVITY AT LESS COST TO SUPPORTING AGENCIES.

This hypothesis is concerned with the institutional mechanisms for resource control, particularly for group resources. The more decision making control is exercised by the

actual users, the more likely the resource will be managed for long-term benefits at less external cost so long as the resource is of sufficiently high value, is renewable, and has secure tenure rights. Where these conditions are not met, project authorities (or the State) will have to assume greater costs and continuing management responsibility over the resource.

The key elements in this hypothesis are "actual users" and "management decisions". Actual resource users include all people presently using the resource, regardless of the legality of their claim and exclude most others regardless of their membership in organisations being used by the project or their residence in the localities where the resource is found. This is likely to differ significantly according to the nature of the resource (irrigation water, forests, grazing land, etc.) as well as between the differing social and political conditions found within the Hindu Kush-Himalaya. Management decisions include choice of technology, control of inputs for establishment and maintenance, harvesting system, and distribution of benefits. The hypothesis states that the degree of control exercised by users over each of these management decisions is related to the long-term productivity and efficiency of the resource.

The conditions under which the hypothesis holds, and its implications, are likely to differ considerably by resource and within the Region. Some of the projects reviewed are currently making use of user group institutions for substantial management decisions. More often, control is retained (or assumed) by State authorities or is partially delegated to local organisations composed of non-users as well as users.

The hypothesis suggests that, in the thickly populated, heavy resource-use conditions of the Region, social viability may lead to greater biophysical viability in the long run with less need for outside subsidy. This argues for project technicians to carefully consider local opinions even when they differ from their technical assessments of optimal methods for resource management.

HYPOTHESIS 5 :

INCREASED EQUITY IN DISTRIBUTION OF RESOURCE BENEFITS, WITHIN THE LIMITS OF SOCIAL ACCEPTABILITY, ENCOURAGES GREATER PARTICIPATION BY USER GROUPS.

Sound resource management is related to control by actual users. Effective participation in resource management is unlikely under highly inequitable conditions; increased equity within the user groups is desirable to enhance resource manageability.

In addition to the question of equity within the user groups residing in the watersheds, equity between those communities and others residing downstream needs to be considered. Development practitioners tend to express concern about prevailing inequalities within the upland communities, which may be substantial, but sometimes overlook those between watershed and lowland residents. Often the latter are more significant in absolute terms.

Watershed managers need to recognise which considerations are socially relevant to the users themselves. While some modification in traditional benefit distribution may be acceptable to upland resource users -- particularly if they have participated in the decision making -- this hypothesis implies that the imposition of socially unacceptable benefit distribution systems will be more costly and less self-sustaining. These limits need to be recognised before attempting any form of social engineering.

The extent of equity sought by user groups may or may not coincide with that of project designers (Cernea, 1985) who could be attempting to use resource management to redistribute benefits. In these situations, policy makers may face a choice of objectives: should the project seek greatest efficiency in achieving its sustainable productivity goals or should it compromise these goals in order to introduce greater equality of benefit distribution than may be currently acceptable?

On the other hand, the form of equity which project designers are addressing may not be the one considered critical by watershed residents. In seeking to determine their priorities, policy makers should remember the simple fact that the more acceptable the distribution of benefits from a resource, particularly from group or state resources, the more likely people are to make the investments necessary to maintain the system over time.

The implications of this hypothesis are that policy makers and watershed managers should seek to enhance participation of actual users by increasing the benefits accruing to them. Where inequality among the resource users acts as a disincentive to participation, modifying the allocation of benefits may be desirable. Where inequality between resource users and others is the issue, a re-examination of the share of on-site benefits in relation to those accruing off-site may produce greater results.

From the point of view of watershed management, equity in resource benefit distribution is desirable and possible only after the first four conditions, advanced here as the first four hypotheses, have been met. All of the above hypotheses point to the resource users within the watershed as the major actors whose perceptions have to be taken into accout if

their participation in watershed management is to encouraged. Clearly, equity in benefit distribution will have meaning as a participatory tool encouraging conservation-oriented behaviour only when the resource has value for the users, is easily renewable, has relatively secure tenure, and is amenable to user group management.

IMPLICATIONS

The overall implication of these hypotheses is that watershed management projects must build on upland residents' existing motivations for sustaining their upland environments through increasing the value, renewability, security, manageability, and equity of resources. As additional understanding is gained through ongoing projects and future studies, the most effective leverage points, incentives, and policy measures can be identified. And as the conditions within which upland residents make their resource use decisions continue to change, the need to refine and adjust project support strategies will also continue.

The need for this ability to be responsive to the motivations and behaviours of the upland resource users thus emerges as the central lesson from this study. Watershed management projects need to learn from each other and from related resource management projects how best to **facilitate** people's own long-term, land use decision making. A variety of strategies are currently being employed to deal with a variety of socio-environmental conditions. The extent to which these are unique to particular conditions or are applicable in other areas of the Hindu Kush-Himalaya Region can only be ascertained by engaging in the most important learning process of all: learning with the people.

This need for engaging in a mutual learning process, for making watershed management a **people-based** endeavor, is what distinguishes watershed management in the Hindu Kush-Himalaya from the west. People's participation in watershed management cannot work unless projects also participate in people's management. With both sides participating, there is hope that productive, sustainable resource management systems can be effectively established throughout the Region.

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APPENDICES

APPENDIX 1

FORMAT OF MATRICES

Project Name:

FOR MATRIX 1: FORMS OF PEOPLE'S PARTICIPATION IN THE PROJECT

1.	PLANNING		National	Regional	Village
	1.1	Household and community surveys			
	1.2	Informal discussions			
	1.3	Other			
2.	DECISION-MAKING, CONSULTATION & NEGOTIATION				
	2.1	Leaders-formal			
	2.2	Leaders-informal			
	2.3	Public meetings - formal institutions - informal gatherings			
	2.4	Special interest groups (e.g. women)			
	2.5	Political processes			
	2.6	Other			
3.	IMPLEMENTATION/INSTALLATION		State	Group	Private
	3.1	Labour - voluntary or subsidised			
	3.2	Land - community or individual			
	3.3	Use of local paraprofessionals - paid or unpaid			
	3.4	Other			
4.	ONGOING MANAGEMENT				
	4.1	Maintenance labour			
	4.2	Maintenance materials			
	4.3	Operational management			
	4.4	Enforcement			
	4.5	Other			

References:

Persons Consulted:

Footnotes:

Project Name:

FOR MATRIX 2: INCENTIVES USED TO SUPPORT WSM ACTIVITIES

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1. INDIVIDUAL/HOUSEHOLD RESOURCES
   - 1.1 Land Use Changes
     - 1.1.1 Terrace improvement
     - 1.1.2 Irrigation/drainage channels
     - 1.1.3 Tree planting/orchards/agroforestry
     - 1.1.4 Cropping system changes
     - 1.1.5 Pasture development
     - 1.1.6 Land closure
     - 1.1.7 Stoves/energy alternatives
     - 1.1.8 Other
   - 1.2 Livestock Management
     - 1.2.1 Natural forest management
     - 1.2.2 Plantations
     - 1.2.3 Stall-feeding
     - 1.2.4 Other

2. GROUP RESOURCES
   - 2.1 Land Use Changes
     - 2.1.1 Natural forest management
     - 2.1.2 Plantations
     - 2.1.3 Range & pasture development, regulated grazing
     - 2.1.4 Land closure
     - 2.1.5 Other
   - 2.2 Engineering Measures
     - 2.2.1 Slope stabilisation
     - 2.2.2 Torrent control structures
     - 2.2.3 Irrigation/water harvesting
     - 2.2.4 Erosion control drainage
     - 2.2.5 Other

3. STATE RESOURCES
   - 3.1 Land Use Changes
     - 3.1.1 Natural forest management
     - 3.1.2 Plantations
     - 3.1.3 Range management, regulated grazing
     - 3.1.4 Land closure
     - 3.1.5 Other
   - 3.2 Engineering Measures
     - 3.2.1 Trail & road construction
     - 3.2.2 Dam & reservoir construction
     - 3.2.3 Resettlement
     - 3.2.4 Slope stabilisation
     - 3.2.5 Torrent control
     - 3.2.6 Erosion control drainage
     - 3.2.7 Other

References:

Persons consulted:

Footnotes:

Project Name:

FOR MATRIX 3: ACTIVITIES UNDERTAKEN TO SUPPORT PARTICIPATION

1. POLICY MEASURES

- 1.1 Securing resources tenure rights
- 1.2 Market/price controls
- 1.3 Off-farm employment support
- 1.4 Land use regulations
- 1.5 Legislation concerning group organisation
- 1.6 Other

2. RESEARCH MONITORING & EVALUATION

- 2.1 Research
  - 2.1.1 On-farm trials
  - 2.1.2 Community resource trials
- 2.2 Monitoring & Evaluation
  - 2.2.1 Surveys
  - 2.2.2 Case studies
  - 2.2.3 Field visits
  - 2.2.4 Evaluation meetings
  - 2.2.5 Other

3. TRAINING AND COMMUNICATION

- 3.1 Training:
  - 3.1.1 Staff training
  - 3.1.2 Paraprofessionals training
  - 3.1.3 Key-farmer training
  - 3.1.4 Leader study tours
  - 3.1.5 Other
- 3.2 Communication:
  - 3.2.1 Communication through media
  - 3.2.2 Face-to-face extension
  - 3.2.3 Use of local intermediaries individuals
  - 3.2.4 Use of local intermediaries groups
  - 3.2.5 Use of existing political representatives

References:

Persons Consulted:

Footnotes:

APPENDIX 2

DATA MATRICES

MATRIX 1: FORMS OF PEOPLE'S PARTICIPATION (WATERSHED MANAGEMENT PROJECTS)

	Country:	China	India			Nepal			Pakistan
	Project:	XIJI WS	UP/WSMP	KANDI	DHAULA.	PHEWA TAL	RCUP	TINAU WP	TARBELA
	Donor:	WFP	WB	WB	GTZ	FAO/UNDP	USAID	SATA	WFP
1.0	Planning:								
1.1	Surveys			V	V	V	V	R V	
1.2	Informal discussion		R V	R V	R V	V	N R V	R V	
2.0	Consultations:								
2.1	leaders:formal	N R V	N R V	R V	R V	N R V	N R V	N R	N
2.2	leaders:informal		R	R V	R V		N R		
2.3	Public meetings		V		V		R	R	
	Informal gatherings				V			R	
2.4	Special groups		R V		V		R V		
2.5	Pol. processes			R V	V	V	N R V	N R V	
3.0	Implementation:								
3.2	Land used:								
	state		X	X	X		X		
	group	X	X	X	X	X	X	X	X
	individual	X	X	X	X	X	X	X	X
3.1	labour on:								
	state resources		p	p	p		p		
	group resources	v s p	p	p	p	v p	v s	v s	
	indi. resources	v s p	v s	v s p	v s	v p	v s		s
3.3	paraprofessionals:		p	p	p		p	v p	p
4.0	Ongoing management:								
4.1	maint. labour on:								
	state resources		p	p	p		p		
	group resources	v s p	s	p	p	p	s	v p	
	indi. resources	v s p	v	v s p	v	v	s	v p	s
4.2	maint. material on:								
	state resources		p	p	p		p		
	group resources		p	p	p	p	p	v	p
	indi. resources		s	v s p	v	v	p	v	
4.3	operational mgt.								
	state resources		E	E	E		E	E	
	group resources	C	C E	C E	C E	C E	L	C E	E
	indi. resources		E		C				
4.4	enforcement:								
	local committees	C			C			C	
	paid guards		G	G	G	G	G		G
	fencing		F	F	F	F			

LEGEND: # 1 - 2.5: N = national level; R = regional level; V = village level
# 3.1- 4.2: v = voluntary; s = subsidised; p = paid # 3.2: x = resource used
# 4.3- 4.4: C = local committees; L = local paraprofessionals; E= external project staff
G = paid guards; F = fencing

MATRIX 1: FORMS OF PEOPLE'S PARTICIPATION (OTHER RESOURCE MANAGEMENT PROJECTS)

	Country:	Bangladesh			China	Nepal				Pakistan	
	Project:	COM.FOR.	NTDP	J.REHAB.	LHASA	CFDP	IHDP	NAFP	KHARDEP	AKRSP	NA/IRD
	Donor:	Vol.	ADB	For.Dept		UNDP/FAO	SATA	ADAB	ODA	AKF	UNDP/FAO
1.0	Planning:										
1.1	Surveys		R V			N R V	V	V	R	R V	V
1.2	Informal discussion	V	N R V	N R	R V	R V	V	R V	N	V	V
2.0	Consultations:										
2.1	leaders:formal	R	N R		R V	N R V	N R V	N R V	N R V		N V
2.2	leaders:informal			R V	V	R V	N R	N R	V		
2.3	Public meetings	V		R	V	R V				R V	V
	Informal gatherings	V	V	V		V					V
2.4	Special groups	V	R V			R V		R V	R	R V	V
2.5	Pol. processes	R		V	R V	N R V	N V	R V	N	R V	V
3.0	Implementation:										
3.2	Land used:										
	state	X	X	X	X		X		X		
	group		X		X	X	X	X	X	X	X
	individual		X	X	X	X	X	X	X	X	X
3.1	labour on:										
	state resources		p	p	p			v	p		
	group resources		e		g	p	v s	v	s	s	
	indi. resources	v	s	s	v	v p			s		v
3.3	paraprofessionals:				v p	v	v p	p		v p	v
4.0	Ongoing management:										
4.1	maint. labour on:										
	state resources		p	p	p		p	s p			
	group resources				v p	s	s	v s	v	v p	
	indi. resources	v	s	v	v	v	v	v	v	v	v
4.2	maint. material on:										
	state resources		p	p	p		p	p			
	group resources				v p	s	s	s	p	v	s
	indi. resources	v	s	s	v	v	s	v	p		
4.3	operational mgt.										
	state resources		E	E	E			E	E		
	group resources				C L E	C L E	L E	L	E	C L	L E
	indi. resources	C E	C E	C	L						
4.4	enforcement:										
	local committees	C	C	C	C	C			C	C	C
	paid guards		G			G			G		
	fencing				F		F				

LEGEND: # 1 - 2.5: N = national level; R = regional level; V = village level
# 3.1- 4.2: v = voluntary; s = subsidised; p = paid # 3.2: X = resource used
# 4.3- 4.4: C = local committees; L = local paraprofessionals; E = external project staff
G = paid guards; F = fencing

MATRIX 2: INCENTIVES USED TO SUPPORT PEOPLE'S PARTICIPATION (WATERSHED MANAGEMENT PROJECTS)

	Country:	China	India				Nepal		Pakistan
	Projects:	XIJI WS	UP/WSM	KANDI	DHAULA	PHEWA TAL	RCUP	TINAU	TARBELA
	Donor:	WFP	WB	WB	GTZ	FAO/UNDP	USAID	SATA	WFP
1.0	Indi. Resources:								
1.1	Land Use Changes:								
1.1.1	terrace improvement		c	c k		c k	c k	c k	k
1.1.2	irrigation/drainage		k	k	k		c k	k	
1.1.3	tree planting	c k s	c k	c k	k	k	k s	c k	k
1.1.4	crop system change	c k s	k	k	k		k	k	k
1.1.5	pasture dev.	k s	k	k	k	k		k	
1.1.6	land closure		k	k				k	k
1.1.7	alternate energy	k	k	k	k	k	c k s	k	
1.2	Livestock Mgt:								
1.2.1	improved breeds		k	k	k	c	k	k	
1.2.2	change herd comp.		k	k	c	k			k
1.2.3	stall feeding		k	k	k				
1.2.4	vet. trg. & services	k	k	k	k	k	k	k	
2.0	Group Resources:								
2.1	Land Use Changes:								
2.1.1	natural forest mgt.						c k		
2.1.2	plantations	c k	k	k	k	k	c k	k	k
2.1.3	pasture mgt.	k s			k	k		c k	
2.1.4	land closure		k	k		k	c k		
2.2	Engineering measures:								
2.2.1	slope stabilisation						c k	k	k
2.2.2	torrent structures		k	k	k		c k		
2.2.3	irri/water harvesting		k	k	k	c k	k	k	k
2.2.4	drainage						c k		
3.0	State Resources:								
3.1	Land Use Changes:								
3.1.1	natural forest mgt.				k				
3.1.2	plantations	c k s	k	k	k		c k		
3.1.3	range mgt/reg.grazing	k s							
3.1.4	land closure		k	k	k				
3.2	Engineering measures:								
3.2.1	trail/road constr.						c k	k	k
3.2.2	dam/reservoir constr								k
3.2.3	resettlement								
3.2.4	slope stabilisation					c k	c k	c k	
3.2.5	torrent control		k	k	k		c k	c k	
3.2.6	drainage					c k	c k	c k	k

LEGEND: c = cash incentives k = incentives in kind s = security of resource tenure

MATRIX 2: INCENTIVES USED TO SUPPORT PEOPLE'S PARTICIPATION (OTHER RESOURCE MANAGEMENT PROJECTS)

	Country:	Bangladesh			China	Nepal				Pakistan	
	Projects:	COM.FOR:	HTDP	J.REHAB.	LHASA	CPDP	IHDP	MAFP	KHARDEP	AKRSP	WA/IR
	Donor:	Vol.	ADB	For.Dept		UNDP/FAO	SATA	ADAB	ODA	AKF	UNDP
1.0	Indi. Resources:										
1.1	Land Use Changes:										
1.1.1	terrace improvement						k				
1.1.2	irrigation/drainage				k	s			k		k
1.1.3	tree planting	k s	c k s	k s	s	k	k	k	k	k	k
1.1.4	crop system change	k s	k s	k s	c k s		k		k		
1.1.5	pasture dev.				k	k					
1.1.6	land closure	s	s	s					k		k
1.1.7	alternate energy				k	k	k	k	k	k	k
1.2	Livestock Mgt:										
1.2.1	improved breeds				k s		k		c k		
1.2.2	change herd comp.										
1.2.3	stall feeding							k			
1.2.4	vet. trg. & services				k				k	k	
2.0	Group Resources:										
2.1	Land Use Changes:										
2.1.1	natural forest mgt.		s			c k s		c k s			
2.1.2	plantations				s	c k s	k s	k s	c k	c	k
2.1.3	pasture mgt.					c k s	k s	k		c	
2.1.4	land closure						c k	k	k	k	
2.2	Engineering measures:										
2.2.1	slope stabilisation						k	c k			
2.2.2	torrent structures				k						
2.2.3	irri/water harvesting				k		c k		k	c k	k
2.2.4	drainage							c k			
3.0	State Resources:										
3.1	Land Use Changes:										
3.1.1	natural forest mgt.		s								
3.1.2	plantations		c k	c			c k	k			
3.1.3	range mgt/reg.grazing				k			k			
3.1.4	land closure	s	s					k			
3.2	Engineering measures:										
3.2.1	trail/road constr.	k	c	k	k			c k	c k	c k	
3.2.2	dam/reservoir constr				k						
3.2.3	resettlement	s	k s	k s							
3.2.4	slope stabilisation						c k	c k			
3.2.5	torrent control									c k	
3.2.6	drainage				k			c k			

LEGEND: c = cash incentives k = incentives in kind s = security of resource tenure

MATRIX 3: ACTIVITIES UNDERTAKEN TO SUPPORT PEOPLE'S PARTICIPATION (WATERSHED MANAGEMENT PROJECTS)

	Country:	China	India			Nepal			Pakistan
	Projects:	XIJI WS	UP/WSMP	KANDI	DHAULA.	PHEWA TAL	BCUP	TINAU WP	TARBELA
	Donor:	WFP	WB	WB	GTZ	FAO/UNDP	USAID	SATA	WFP
1.1	resource tenure sec.	X					X		
1.2	market support	X							
1.3	off-farm employment	X		X			X	X	
1.4	landuse regulations			X	X			X	
1.5	gp. org. legislation		X	X	X			X	
2.1	Research:								
2.1.1	on-farm trials	X	X	X	X		X	X	X
2.1.2	comm. resource trials	X		X	X	X	X	X	
2.2	Mon. & Evaluation:								
2.2.1	surveys:								
	regular & frequent							X	
	biannual or annual				X				
	occasional		X	X	X	X	X		
2.2.2	case studies				X		X	X	
2.2.3	field visits		X	X	X	X	X	X	X
2.2.4	evaluation meetings:								
	formal		X	X	X		X		
	informal				X	X		X	
3.1.1	training: staff								
	in-service	X	X	X	X	X	X	X	
	in country	X		X		X			
	overseas			X	X		X	X	
3.1.2	paraprofessional trg	X	X		X	X	X	X	
3.1.3	key farmer trg	X		X	X	X	X	X	
3.1.4	study tours: staff	X	X			X		X	
	local govt leaders						X		
	paraprofessionals				X				
	farmers			X	X	X		X	
3.2.1	Comm. media								
	printed media					X		X	
	audio-visuals		X		X	X	X	X	X
	other				X		X		
3.2.2	face-to-face extension	X				X	X	X	X
3.2.3	thru local indi:								
	community leaders				X				
	paraprofessionals	X		X	X	X	X	X	
	farmers	X	X		X			X	X
3.2.4	user groups		X		X				
	schools					X	X		
	women	X			X				
	ex-servicemen		X		X				
3.2.5	use of local govt repr	X		X	X	X	X	X	X

MATRIX 3: ACTIVITIES UNDERTAKEN TO SUPPORT PEOPLE'S PARTICIPATION (OTHER RESOURCE MANAGEMENT PROJECTS)

	Country:	Bangladesh			China	Nepal				Pakistan	
	Projects:	COM.FOR.	HTDP	J.REHAB.	LHASA	CFDP	IHDP	NAFP	KHANDEP	AKRSP	NA/IRD
	Donor:	Vol.	ADB	For.Dept		UNDP/FAO	SATA	ADAB	ODA	AKF	UNDP/FAO
1.1	resource tenure sec.	X	X	X	X	X	X	X			
1.2	market support	X			X		X			X	
1.3	off-farm employment		X	X	X		X	X	X		
1.4	landuse regulations	X	X	X							
1.5	gp. org. legislation	X			X	X					
2.1	Research:										
2.1.1	on-farm trials		X			X			X	X	X
2.1.2	comm. resource trials		X		X	X		X	X		X
2.2.1	surveys:										
	regular & frequent									X	
	biannual or annual					X			X		
	occasional		X			X	X	X			X
2.2.2	case studies					X	X		X	X	
2.2.3	field visits	X	X	X	X	X	X	X	X	X	X
2.2.4	evaluation meetings:										
	formal	X	X			X				X	X
	informal				X		X				
3.1.1	training: staff										
	in-service		X	X	X	X	X	X	X	X	X
	in country				X	X		X	X		
	overseas					X	X	X	X	X	
3.1.2	paraprofessional trg		X			X	X	X	X	X	X
3.1.3	key farmer trg				X		X		X	X	X
3.1.4	study tours: staff				X			X			
	local govt leaders				X	X		X			
	paraprofessionals				X		X	X			X
	farmers			X	X				X		X
3.2.1	Comm. media										
	printed media				X	X	X	X	X	X	X
	audio-visuals				X	X	X	X	X	X	X
	other					X					
3.2.2	face-to-face extension	X	X	X	X	X	X	X	X	X	X
3.2.3	thru local indi:										
	community leaders	X	X	X	X		X	X	X		X
	paraprofessionals				X	X	X	X	X	X	
	farmers	X			X				X	X	
3.2.4	user groups		X			X				X	
	schools				X			X			
	women										X
	ex-servicemen				X				X		
3.2.5	use of local govt reps		X		X	X	X	X	X	X	X

APPENDIX 3

PROJECT PROFILES

WATERSHED MANAGEMENT PROJECTS	Abbreviations
China	
1. WFP-assisted Project 2605, Xiji	XIJI WS
India	
2. Himalayan Watershed Management Project, UP	UP/WSMP
3. Kandi Watershed and Area Development Project	KANDI
4. Indo-German Dhauladhar Farm Forestry Project	DHAULA
Nepal	
5. Phewa Tal Watershed Management Project	PHEWA TAL
6. Resources Conservation and Utilisation Project	RCUP
7. Tinau Watershed Project	TINAU WP
Pakistan	
8. Tarbela and Mangla Watershed Management Project	TARBELA
RELATED RESOURCE MANAGEMENT PROJECTS	
Bangladesh	
9. Chittagong Community Forestry Programme	COM.FOR
10. Hill Tracts Development Project	HTDP
11. Jhumia Rehabilitation Scheme, Bandarban	J.REHAB
China	
12. Lhasa River (Kyi Chu) Area Development in Tibet	LHASA
Nepal	
13. Community Forestry Development Project	CFDP
14. Integrated Hill Development Project	IHDP
15. Nepal/Australia Forestry Project	NAFP
16. Kosi Hills Area Rural Development Programme	KHARDEP
Pakistan	
17. Aga Khan Rural Support Programme	AKRSP
18. Pak/80/009 Integrated Rural Development Project	NA/IRD

Note:

Documents referred to in the Project Profiles are included within the Bibliography.

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Kosi Hills Area Development Project, Nepal

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Mr. Banares, Forester, Abbotabad

Tinau Watershed Project, Nepal

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Project Profile 1 (XIJI WS)

WFP- ASSISTED PROJECT 2605, XIJI, CHINA

Sponsors: Govt. of the People's Republic of China/World Food Programme

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INTRODUCTION

The World Food Programme (WFP) assisted project 2605 is a five-year project which began in 1982 in Xiji County in the Ningxia Hui Autonomous Region of China. Xiji County is one of the 22 key areas of the large scale reforestation and conservation projects, the Three North Programme, launched in 1978 and covers the northern third of China. The project is designed to strengthen the water and soil conservation efforts of the Three North Programme, enabling it to achieve more rapid coverage of critical slopes and gullies and to gain experience for the expansion of activities into 114 other counties with similar problems. The objectives of the project are to increase the area of forest and grassland through the conversion of marginal lands, denuded hills and unproductive barren lands. Project activities include reforestation, erosion control measures, development of agriculture, livestock and pasture management, and research and training.

Project Summary:

Duration	:	1982 - 87
Area	:	Xiji County, China
Cost	:	US$ 23.5 million
Donor	:	World Food Programme
Implementing Agency	:	Ministry of Forest, Beijing

1. FORMS OF PEOPLE'S PARTICIPATION IN THE PROJECT

Planning and Decision-Making:

- National level: Central Ministry of Forest
- Regional level: Project Leading Group, including representatives of regional government departments
- Local level:

1. Townships draw up plans for project activities
2. Project management committees with representatives of project workers

Implementation and Operational Management:

- Since 1981, introduction of Household Responsibility System (HRS): project contracts land to collectives, groups, households or individuals; contracts for agricultural development, fodder and tree planting allocated largely to households; contract specifies type, quantity and quality of work to be done
- Labour: paid (site preparation, planting and maintenance); subsidised with food (reclamation work); voluntary (agricultural and livestock maintenance)

Note:
Project accounted for 22 percent of total employment in area; female input was 49 percent of total; virtually all rural households participated in project.

2. INCENTIVES USED TO SUPPORT WATERSHED MANAGEMENT ACTIVITIES

- State land contracted to individuals/households for project activities
- Food compensation (wheat) for land use changes from food production to tree or fodder production, as part-payment for reclamation work and for maintenance work; project production standards must be met to receive food entitlement

"The high achievement levels of the conversion of marginal lands can be taken to show that the use of food as compensation for loss of income has been an effective incentive in inducing farmers to adopt conversion." (Interim Evaluation: 1985)

- Households entitled to retain full benefit from their production of trees and fodder for consumption or sale
- Exemption from paying taxes on agricultural produce for 10 years from 1980 because of poor economic situation of region

- Collectively-owned livestock distributed to farmers for management on private basis

- Free artificial insemination and veterinary facilities provided in each township

- Income from livestock provides motivation to increase fodder crop production on marginal lands and denuded hills

- Project subsidy of state and private nurseries which make trees available for project activities (85 hectares of state nurseries; 990 hectares of private nurseries-operated often on collective basis

- Distribution of wood-saving stoves and establishment of bio-gas plants

3. ACTIVITIES UNDERTAKEN TO SUPPORT PARTICIPATION

Policy Measures:

- Resource tenure security supported by HRS: state land contracted to households; livestock and trees distributed for private management

- Project provides market for seedlings produced in nurseries (mostly private) at favourable prices

- Lasting generation of employment opportunities expected from utilisation of forest and pasture resources

Research:

- Watershed Experimental Station established by project

- On-site trials conducted by Watershed Experimental Station

- Research and development inputs provided on regular basis by colleges and research stations

Training:

- Staff and peasant technicians: county and township-level training courses in tree planting and pasture development

Note:
Approximately one-third of peasant technicians are female

- In-service training of farmers by peasant technicians

- Study tour for foresters to similar WFP-assisted projects in Turkey

- "The massive training inputs have obviously been a decisive factor in getting the project rapidly started on a large scale while at the same time ensuring acceptable standards of site preparation, planting and maintenance." (Interim Evaluation)

Extension:

- Full and part-time agricultural extension workers employed

- Leader farmer peasant technicians provide extension to farmers

- Project provides effective and highly visible large-scale demonstration to farmers in neighbouring counties

Project Profile 2 (UP/WSMP)

HIMALAYAN WATERSHED MANAGEMENT PROJECT, UTTAR PRADESH, INDIA

Sponsors: Govt. of India/World Bank

INTRODUCTION

The Himalayan Watershed Management Project was started in 1983 with funding support from the World Bank and a budget of U.S. $66 million. The primary objective of the project is to attempt to minimise in nine sub-watersheds of the Ganga catchment in Uttar Pradesh the further deterioration of the Himalayan ecosystem caused by depletion of forest cover, overgrazing, misuse of land and careless road construction. The project, which covers 312,000 ha, is a direct result of a Government of India working group concerned with flood damage in the Gangetic drainage and is conceived as the first step in treating the whole catchment area on a watershed management basis. The planned development of the selected sub-watersheds is based on detailed plans prepared in a phased manner for each sub-watershed.

Project activities include:

1. Mixed species and fodder plantations on 80,000 ha of government and panchayat land and 80,000 ha of private land
2. Construction of soil conservation structures designed to protect existing infrastructure (1,850 checkdams, 1,3000 crate wire dams, 700 drop structures, and 8,000 ha terrace improvement)
3. Livestock development through buffalo for cattle exchanges (discontinued in 1985) and improvement of livestock dispensaries
4. Improvement of agricultural extension services through provision of staff, equipment, housing, and staff training
5. Horticultural development through top working with 3,000 ha of existing orchards and establishment of 1,500 ha of new fruit orchards
5. Construction and lining of 250 km of small irrigation channels and 850 small water tanks
6. Development of research and training activities and establishment of administrative and policy machinery

Project Summary:

Duration	:	1983 - 1990
Area	:	Sub-watersheds in U.P. Himalaya
Cost	:	US $70 million
Donor	:	World Bank (IBRD) GOI
Implementing Agency	:	U.P. State Line Agencies coordinated by Project under Hill Development Department

1. FORMS OF PEOPLE'S PARTICIPATION IN THE PROJECT

Planning:

- Land survey of slope, altitude, land use, and erosion intensity conducted by project; socio-economic data obtained from existing census, published district surveys and consumption studies
- Informal discussions held with village leaders on main elements of programme which resulted in some changes i.e. project decided to provide free fencing for fodder plantations on private lands
- Sub-watershed plans prepared individually for each sub-watershed and circulated among officers, but not local people to avoid raising false expectations

Decision-making, Consultation and Negotiation:

Sub-watershed plans reviewed by six committees:
1. Sub-Watershed Committee
2. Regional Watershed Committee
3. State Steering Committee
4. GOI Watershed Development Council
5. Donor Agency (World Bank)

6. GOI National Water Development Policy Committee.

Of these, only the sub-watershed committees have political representatives

Annual micro-watershed plans reviewed through four committees:

1. Micro-Watershed Committee
2. Sub-watershed Committee
3. Regional Watershed Committee
4. State Steering Committee

- 2 micro-watershed committees established in project area that meet twice a year; committees consist of the project manager, village pradhans (leaders), and government staff from the various concerned block offices

- The whole of the village panchayat, gram sabha involved in approving the transfer of village land to government for planting

- Local women's organisations (Mahila Mangal Dal) participate in informal consultations

Implementation/Installation:

- Labour for activities on state and group resources fully paid by project, although latter requires permission of village panchayat, gram sabha

- On private resources, labour either paid or voluntary depending on the specific component

- No specific extension paraprofessional staff beyond those existing with various departments, but use of planned T&V system has been agreed in principle; selection of technician level staff involves a district selection committee

Ongoing Management:

- Maintenance labour and material paid by project for state and group resources

- Maintenance supervision and management also provided by project except that in the case of irrigation, local users groups are supposed to be formed (yet to take place)

- On private resources, farmers responsible for their own maintenance

- Fencing provided at project cost for all types of resources including private lands; guards supplied for state and group plantations

- Enforcement through project staff of various departments

2. INCENTIVES USED TO SUPPORT WATERSHED MANAGEMENT ACTIVITIES

Individual/Household Resources:

- Terrace improvement with government subsidy planned, but not yet implemented

Two types of tree planting:

1. Fodder plantations established free on participating farmers' lands at project cost of Rs.1,600 per hectare for 400 seedlings and fencing; labour paid by project, all products belong to farmer

2. Farm forestry supported by providing 25 free seedlings per hectare

- To establish orchards, farmer provided loan of approximately Rs.7,600 per hectare of which one-sixth is written off as subsidy and remainder to be repaid in 16 years at 6 percent interest; farmers with existing orchards provided Rs.5 per tree for top working and rejuvenation

- Improvements in cropping systems are supported through seed exchange programmes for wheat, paddy,and soyabean (e.g 4 kg wheat seed provided) and on-farm field trials for which approximately Rs. 50 worth of fertiliser provided free

- Pasture development through distribution of fodder grasses planned, but not yet implemented

- Private land closure through fodder plantations

- Improved chulhos provided through the U.P. State Scheme

- Breed improvement supported through castration and artificial insemination followed by free feed for calves from 4th to 14th month

- Previously a cattle exchange programme in which one milking buffalo was exchanged for three or four cattle; although very popular, this component has been discontinued due to the high cost of maintaining the cattle received in exchange (estimated project cost of Rs. 70 million for maintaining goshalla-cow homes) and the inability to auction these cattle due to the State law against cow slaughter

Group and State Resources:

- Plantations on group resources of fuel and fodder trees entirely paid for by project
- Village (gram sabha) approves transfer of land to government for plantation, following which responsibility for management and enforcement devolves to government
- Plantations established on state resources designated as Reserved Forest Land entirely at project expense
- Area closed to grazing, grass and deadwood provided free to nearby residents in both group and reserved forest plantations
- Both types of plantations burdened with timber and fuelwood rights which are exercised by permits either provided directly by the Forest Department or through the Village Pradhans
- Range management planned, but not yet implemented
- Torrent control through check dams and gabion structures paid by project
- Irrigation through the lining of channels and the construction of water tanks paid by government; formation of irrigation users groups planned but not yet implemented

3. ACTIVITIES TAKEN TO SUPPORT PARTICIPATION

Policy Measures:

- No activities in the area of resource tenure rights, marketing, or off-farm employment beyond that generated directly by project activities (which is substantial)
- New land use regulations, to cover the problem of terraces abandoned by absentee landlords, proposed
- Local group organisation proposed to be supported through irrigation user group committees (to be established); micro-watershed committees composed of local government officers and village pradhans set up for plan review

Research, Monitoring and Evaluation:

- Farmer trials of cereal crops currently supported trials of grasses and shrubs planned
- Main job of project staff is planning, monitoring and evaluation: preparation of sub-watershed and annual plans and compiling monthly reports from the field
- U.P. Development System Corp. responsible for conducting baseline and socio-economic impact studies
- Watershed Development Council designated to conduct sample surveys and case studies (not yet conducted)
- Field visits conducted by project staff and line agencies as routine
- All committees evaluate and review progress on an annual basis

Training and Communication:

- Some staff training of forest officers for soil conservation and horticulture
- Women motivators hired by the project in its first two years of operation (130 at Rs. 50 per month) now being discontinued; T&V system to be used instead for extension work
- Small number of pre-season project orientation training sessions held with key farmers

Communication:

- Limited use of printed media (brochures and posters) so far, videos currently planned; however, no seperate unit for communication work
- Since women motivator system discontinued, face-to-face communication relies on regular government programmes; T&V system is planned
- Women's groups (Mahila Mangal Dal) contacted as local intermediaries

KANDI WATERSHED AND AREA DEVELOPMENT PROJECT, PUNJAB, INDIA

Sponsors: Govt. of India/World Bank

INTRODUCTION

The Kandi Watershed and Area Development Project is conceived as the first comprehensive attempt to tackle the problems of the Himalayan sub-mountainous zone which will lay the basis for sound investments on a larger scale in future, to reverse man-made ecological degradation and protect and develop agricultural land that is presently subject to serious erosion and flooding.

The project components include:

1. Rehabilitation of the upper catchments through afforestation, soil conservation and comprehensive development packages for farmers and livestock owners
2. Flood protection, irrigation of farm lands in the command area below the hills
3. Development of farm lands through soil and water conservation, horticulture, livestock and fisheries development
4. Technical assistance, research, and investigation,
5. Project formulation, planning and monitoring

This inter-disciplinary integrated project is being executed by the Government of Punjab line departments in the various economic development sectors. Coordination at the government level is provided by the Programme Planning and Coordination Unit headed by the Joint Development Commissioner, (Kandi Area) under the overall supervision of the Financial Commissioner Development. Funding assistance is provided by a soft loan from the World Bank. Since the project started in 1985, achievements have included: 20,000 ha afforestation, 22,600 ha soil conservation, 6,200 ha land development, 1,700 cattle exchange, 7,700 cross breeding of cows and buffaloes, 1,100 ha new orchards, and approx. Rs. 100 million spent on dams, irrigation and other water control structures and wells. The project covers nine watersheds in Hoshiarpur and Ropar Districts.

Project Summary:

Area	:	Shiwalik sub-mountainous Kandi zone (Hoshiarpur and Ropar Districts) Punjab
Duration	:	1980 - 1987
Cost	:	Rs. 600 million (approx. US $50 million)
Donor	:	World Bank (IBRD)
Implementing Agency	:	Punjab line agencies coordinated by Financial Commissioner, Development

1. FORMS OF PEOPLE'S PARTICIPATION IN THE PROJECT

Planning:

- Household and community surveys conducted for project by Punjab Agricultural University
- Informal discussions held at both village and regional (district) level

Decision-making, Consultation and Negotiation:

- Watershed advisory committees composed of village leaders (sarpanch and panchas) and progressive farmers meet twice yearly with project staff to review plans and progress: so far 10 committees established
- Policy Review Committee includes M.L.As (Members of Legislative Assembly) as non-official members, responsible for reviewing policy level plans and implementation
- District level committees which include chairmen of block samitis, village sarpanchs, and M.L.As, as non-official members also review activities and constraints

Implementation/Installation:

- Labour paid for all state and group resource activities, as well as for some private land programmes, though some individual activities are voluntary or merely subsidised

- All types of land, including private land, brought under government management for a 25 year period, after due notification, is used for project. This private land must be currently subject to erosion and poor management. Initially, voluntary relinquishment is sought (and often forthcoming, especially from absentee landlords) but government management is also imposed under Sections 4 and 5 of the relevant GOI., Forest Act. Some inital court cases regarding these actions have been resolved in the government's favour

- No separate paraprofessionals employed beyond the lower level staff generally recruited from the area by line agencies

Ongoing Management:

- Maintenance labour and materials for most activities paid by the project on all forms of resources

- Operational management carried out by government staff for most activities

- Management guided by watershed and district committees that meet twice a year to guide implementation and review problems

- Enforcement through fences and government guards

2. INCENTIVES USED TO SUPPORT WATERSHED MANAGEMENT ACTIVITIES

Individual/Household Resources:

- Terrace improvement supported through loan provided by Department (of which 25 percent is given as subsidy)

- Irrigation and drainage channels paid for by project and considered major benefit

- Tree planting on state, community, and government managed private lands fully paid for by project. In case of private land, farmers can cut grass and collect deadwood for 25 years. After 25 years, Department will recover costs through harvesting trees and remainder will belong to farmer who originally owned land

- Farm forestry and orchards supported through the provision of seedlings at subsidised rates (i.e. Rs. 0.30 per plant for forest trees)

- Pasture development supported through the planting of improved fodder grasses on plantation lands (including land taken over under Section 5)

- Land closure on all types of land, as noted above, for plantation and rehabilitation

- Smokeless chulhas provided at subsidised rate by project

- Off-farm employment provided through rope-making from improved grasses; general shortage of labour in area resulted in labourers from Rajasthan being employed for some project work

- Improved breeds of cows and buffalo exchanged for three or four goats; improved sheep also encouraged instead of goats

- Expected take-up of poultry and pig credit has not occurred

- Stall feeding also supported through the free provision of grass cut from plantations

Group Resources:

- Fodder grass provided from plantations, on Panchayat lands, paid by project

- All areas are closed for grazing, although hand harvesting of grasses and provision of free grass at depots is supported

- Flood control, irrigation channels and flood channels provided by project at no cost to farmer

- Farmer pays 75 percent of the cost of pipes for irrigation through credit for the full amount, repayable in 30 years at 9 percent interest

State Resources:

- Natural forest management supported through thinnings, road construction, and the provision of wood depots

- State plantations treated as community plantations (see above)

- Fish hatchery for fingerlings provided at project cost

- Dams, resevoirs and tubewells constructed at project cost

- For small resettlement schemes the project has paid compensation

3. ACTIVITIES UNDERTAKEN TO SUPPORT PARTICIPATION

Policy Measures:

- Existing, but unused, land use regulations have been implemented to impose better government management on eroded private lands. Section 4 of the relevant act is low level government closure, while Section 5 has allowed complete closure except for hand harvesting of grass for 25 years

- Watershed (micro-watershed) and District committees have been established to support group organisations and people's participation as well as the integration of different line agencies

Research, Monitoring and Evaluation:

- On-farm trials supported in the form of dry-land farming experiments

- Improved grass trials established on community and private lands

- Household monitoring and evaluation surveys responsibility of the Punjab Agricultural University

- Field visits and evaluation meetings conducted by the project together with line agencies

Training and Communication:

- Staff training is provided at all levels. Overseas training at the University of Colorado is provided for officers. Lower level staff are provided in-country training in soil conservation

- Key farmer training is also one of the project components

- No specific unit or programme for communication or extension beyond that already conducted by line agencies exists. However, talks regarding the project are arranged

- Watershed and District committee meetings are the main avenue for communicating the people aspects of the project

INDO-GERMAN DHAULADHAR FARM FORESTRY PROJECT, PALAMPUR, HIMACHAL PRADESH, INDIA

Sponsors: Govt. of India/German Technical Assistance

INTRODUCTION

The Indo-German Dhauladhar Farm Forestry Project is an integrated watershed management project with the objectives of ecologically rehabilitating the 276 sq km, Binwa Catchment area, around Palampur, H.P., and providing socio-economic development for approximately 36,000 people residing in 100 villages in the watershed. The project is being executed by the H.P. Farm Forestry Development Society established for the purpose under the Chairmanship of the Secretary of Forests and with a governing body composed of Secretaries of relevant departments and the Indian project manager and German counterpart.

The project has taken a comprehensive approach by organising activities under 10 sections:

1. Forestry development through broadleaf afforestation and enrichment planting of natural oak and pine forests (total target 3,500 ha) and improved pastures
2. Soil conservation through intensive revegetation and the construction of checkdams and drainage
3. Improved animal husbandry through cross breeding, improved feed and veterinary services, and encouragement of stall feeding
4. Improved agriculture through training, provision of inputs and demonstrations
5. Adoption of improved horticulture through the supply of seedlings, materials and technical assistance
6. Minor irrigation and civil works (including toilets and school buildings)
7. Increased use of alternate energy through development and distribution of smokeless chulhs, crematoria, and solar geysers
8. Self-employment through training in skills and entrepreneurial development and provision of materials and credit
9. Extension through a variety of means: paraprofessionals, farmer training, formation of village committees, use of women's and youth groups, dialogues, exhibitions, competitions, etc.
10. Public relations through various communications media and activities

Project Summary:

Area	:	Binwa Catchment area, Palampur, H.P.
Duration	:	1980 - 1988
Cost	:	Rs. 105 million (approx. US $8.5 million)
Donor	:	GTZ
Implementing Agency	:	H.P. Farm Forestry Development Society and line agencies

1. FORMS OF PEOPLE'S PARTICIPATION IN THE PROJECT

Planning:

- Household and village surveys conducted for planning
- Extensive formal and informal discussions held with village panchas and all villagers in various meetings
- Project Coordinating Committee, under the Chairmanship of the Conservator of Forests, Dharamsala, includes four non-official members out of the project population

Decision-Making, Consultation and Negotiation:

- Village Development Committees established at a lower level than panchayats consisting of 5 members, one of whom is pancha, with responsibility for reviewing and finalising plans and implementation; forest officer attends meetings

- Women's groups also encouraged and strengthened to deal with project issues

- Youth groups also targeted to receive special project assistance and participate in consultations

- Panchayats also involved in certain land use decision making issues such as plantations; Village Development Committees partly conceived as means to make panchayats more answerable to people

- Project also has Coordinating Committee (noted above) and Governing Body involved in decision making

Implementation/Installation:

- Labour on state and community resource activities paid by project (including line agencies)

- Labour on most private land activities is subsidised according to the economic status of the family (usually 50 percent subsidy for those below poverty line, 33 percent for marginal farm households, and 25 percent for small farmers) and specific activities; some activities voluntary, and some fully paid with later cost recovery planned

- All types of land used: government forests, community shamlat or unclassed/undemarcated forest, private agriculture and wastelands

- Local Motivators are used as paid paraprofessionals; also, stove trainees (women) are supported

Ongoing Management:

- All maintenance labour and materials on state and community resources paid by project

- On private resources, some material and labour paid, some subsidised, and the remainder is voluntary

- Operational management of project carried out jointly by the Village Development Committees, paraprofessionals and government staff

- Enforcement through fences and paid watchmen, although local groups are also involved in enforcing protection of plantations

2. INCENTIVES USED TO SUPPORT WATERSHED ACTIVITIES

Individual/Household Resources:

- Terrace improvement supported by regular government programmes at 50 percent subsidy, but not part of project

- Broadleaf seedlings for fuel, fodder and timber provided free for individual plantations

- Fruit tree seedlings provided according to regular government subsidy (50 percent for below poverty line, 33 percent for marginal,and 25 percent for small farmers); also garden colonies/ individual orchards subsidised by project

- Social forestry on private lands (under Section 38) whereby either,

1. All costs paid by government and final harvest shared, 25 percent to government, 75 percent to farmer, or

2. 60 percent subsidy by government in form of fencing materials and 100 percent benefit to farmer (not as popular as first option)

- Improved agriculture supported by providing subsidised seedlings (see above) pesticides, fertiliser, storage containers, agricultural implements and free vegetable seed, rat poison, as well as demonstrations

- Improved grasses provided free of cost and demonstration plots established

- Private lands closed and fenced through Section 38 (above)

- Improved stoves distributed **free of cost**, but maintenance provided by owner; **pressure** cookers distributed at subsidised (33 percent) rates to stove owners; 50 percent subsidy for solar geysers and 75 percent subsidy for high altitude stoves

- Improved livestock breeds through mobile artificial inseminators and improved bulls, castration programmes, and 75 percent subsidy for 2 months late pregnancy ration and calf rearing ration; also improved sheep and rabbit breeds and veterinary services

- Number of useless cattle reduced by paying Rs.100 incentive for depositing scrub cattle at project supported cattle homes

- Improved cattle sheds for stall feeding through 50 percent subsidy of cement and development of fodder banks

- Toilets constructed at 87 percent subsidy for poorest and 50 percent subsidy for remainder

- Self-employment programme through free training with stipends, free tool kit, and 33 percent subsidy (up to Rs. 3,000) for capital equipment

Group Resources:

- Social forestry plantations, mostly of broadleafs, in which final benefit will go to panchayats; presently grass is being equally distributed (through lottery system for cutting rights within area)

- Land closure with enrichment planting of trees and pastures on community land paid and fenced by project with group consent

- Check dams constructed at project expense

- Irrigation channels which will benefit whole village are repaired and improved at project cost

- School facilities (extra rooms), health clinic room, etc., provided as community incentive with 12.5 percent contribution in cash or kind by local village

- Crematoria constructed to reduce fuel consumption for local communities

State Resources:

- Closure and enrichment planting of oak and pine forests being used by local people

- Plantations on forest land

- Development of high altitude pastures through seeding and planting carried out at project expense

- Torrent control structures and checkdams paid by project

- Some bridges, trails and civil works constructed at project cost

3. ACTIVITIES UNDERTAKEN TO SUPPORT PARTICIPATION

Policy Measures:

- New H.P. policy on providing tree tenure for individuals with landholdings (rightholders) planting on shamlat (community) or unclassed/undemarcated bare government land is planned to be implemented

- Social forestry plantations on bare government land may provide villagers and landless with additional rights to products from these areas

- Off-farm employment supported through various entrepreneurial and artisan programmes

- Land use regulations (Section 38) allow government to assume all costs of planting private land with owner's consent and profit sharing (see earlier)

- Society created for management of project; Village Development Committees established at local level

Research, Monitoring, and Evaluation:

- On-farm trials of improved agriculture, orchards, and grasses conducted by project

- Trials of agroforestry and orchards also established on community lands

- Separate unit for monitoring and evaluation established for conduct of surveys

- Stove case study conducted

- Very frequent field visits by project staff

- Bi-weekly meetings held to evaluate project problems and progress

- Regular evaluation meetings held with Village Development Committees

Training:

- Regular training of village motivators and women (stove trainees)

- Extensive farmer training through village training camps (60 held for 3,000 farmers) and demonstrations

- Study tours for farmers and motivators conducted (4 so far)

- Adult education provided

- Special programmes of instruction in schools provided by project

- Artisan, self-employment, and entrepreneurial training courses organised

- Sanitation camps held

Communication:

- Communication media include; posters, booklets, folders, monthly magazine, and calendars

- Village Motivators and women (stove trainees) used as paraprofessionals for communication

- Extensive use of groups for constant communication: Village Development Committees, Women's Groups, Youth Clubs, Drama Clubs, and informal groups

- TRUCO (Trust Building and Cooperation) sessions held for dialogue

- Many exhibitions and rallies for various activity sections

- Competitions among target groups and farmers and panchayats supported with prizes

PHEWA TAL WATERSHED MANAGEMENT PROJECT, NEPAL

Sponsors: HMG/N-FAO-UNDP

INTRODUCTION

The Phewa Tal Watershed Management Project is an integrated watershed management project located in the Phewa Tal and Kulekhani watersheds of Kaski District, Nepal and funded by UNDP, FAO and HMG. Its implementation phase began in 1981 following a 7-year planning and demonstration phase.

The objectives of the project are:

1. To demonstrate on a sub-district scale the economic and social advantages of improved land-use practices

2. To reduce erosion in the catchment to tolerable limits, thereby protecting downstream values

3. To improve the capability of the DSCWM in implementing projects. The major components of the project are watershed management (soil and water conservation, forestry, infrastructure, extension, community development, data collection,and coordination), agriculture and horticulture, livestock, water supply, administrative and technical support and training

Project Summary:

Duration	:	1974 - 85
Area	:	Kaski District, Western Nepal
Cost	:	Rs. 40 million
Donor	:	UNDP and FAO
Implementing Agency	:	Department of Soil Conservation and Watershed Management, HMG/N

1. FORMS OF PEOPLE'S PARTICIPATION IN THE PROJECT

Planning:

- Initial project design and activities oriented towards practical and feasible measures and techniques with initial thrust placed on technical issues and answers. Importance of socio-political realities recognised midway through project: "Preparation of watershed development plans, in order to be viable and practical, must consider socio-political realities in the field, and include mechanisms for local involvement and participation. The process is more involved than simply compiling a resource inventory and a map showing proposed ("better" = less intensive) landuse, accompanied by some technical guidelines and a general reminder that "people's participation plays a great role in the success of the programme." (Mid-term Evaluation: 1984).

- Some household and community surveys conducted at sub-watershed level

Decision-making, Consultation and Negotiation:

- National level Project Coordination Committee (including representatives from government ministries, UNDP and FAO) provides overall direction and guidance to project. (Met twice during 1981 - 85 implementation phase.)

- District level Watershed Conservation Committee (including representatives from District Panchayat, district heads of participating line agencies and selected Panchayat representatives) examines details of project implementation and coordinates project activities at local level.

- Village level Panchayat Conservation Committees (including Panchayat and ward representatives and extension workers from government agencies) meets every one or two months to propose local conservation requirements, make decisions on finer details of implementation of plans, and maintain and manage village level projects.

- Village and ward level representatives to PCC's must include a minimum of 2 women.

Implementation/Installation:

- Initially, project used only hired labourers; later introduced use of some voluntary labour and payment of labour with firewood. Role of people's participation has changed considerably since project was conceived. But "more emphasis needs to be placed on involving the local population in better land management. This can be achieved through incentives and participation in basic decisions rather than having the Government carry out the work with hired labour with merely the consent of the people", (Watershed Management and Conservation Education: Report of the Mid-term Evaluation Mission: UNDP/FAO/HMG: 1984).
- Programmes are conducted on state, panchayat and individually owned land

Ongoing Management:

- All maintenance labour and maintenance materials project-paid
- Some people's participation in operational management through Panchayat Conservation Committees
- Enforcement by fencing and employed guards: 80 percent of cost project-paid (Note: This was felt to be only means of achieving high survival rate of plantations.)

2. INCENTIVES USED TO SUPPORT WATERSHED MANAGEMENT ACTIVITIES

Individual/ Household Resources:

- Terrace improvement - at start of project: 100 percent costs project-paid; in mid-stage: 70 percent costs project-paid; since July 1985: 50 percent costs project-paid
- 60,000 fodder trees per year provided free
- Free planting material provided for pasture development
- Energy alternatives: 25 free chulhos provided; 5 bio-gas plants provided at 50 percent subsidy
- Subsidy of fruit trees, but gradual reduction of percentage subsidy: at start all costs except protection project-paid; mid-stage seedlings and fertiliser project-paid; now seedlings only project-paid
- Project "loan", of improved livestock breeds to farmers
- Free planting material provided for stall-feeding schemes
- Free veterinary services provided (eg. free vaccination of 9,000 cows per year); training and equipment provided for Animal Health Assistants

Group Resources:

- Grass cutting rights given in plantations
- Establishment of 3 orchards on panchayat land owned by schools; revenue given to school
- Provision of drinking water systems as incentive to donate communal land for project activities and as public relations exercise (costs paid by project and government)
- Irrigation schemes: project-paid

State Resources:

- All costs paid by project for land use changes and engineering measures; introduction of some voluntary labour: free provision of gabions and skilled labour in return for voluntary labour on slope stabilisation programmes

3. ACTIVITIES UNDERTAKEN TO SUPPORT PARTICIPATION

Policy Measures:

- Land use regulations: demarcation of specific watersheds to give DSCWM power and responsibility in area
- Legislative changes: promotion of conservation movement by FAO/UNDP leading to Soil and Watershed Conservation Act: 1982 and associated by-laws (not yet operational)
- Project-promoted establishment of DSCWM at district level, to enhance Government's capacity to plan and manage watershed development

Research, Monitoring and Evaluation:

- Intensive experimentation and studies conducted during planning and demonstration phase of project in integrated watershed management, torrent control, land use development and hill agriculture development

- On-farm and community resource trials conducted in implementation phase on free grazing, controlled grass cutting, different terrace farming techniques, agroforestry etc.

  Note:
  "More specific information is needed for various project activities to effectively address such things as incentives, motivations and full participation by the local people." (Mid-term Evaluation: 1984)

- Surveys conducted on effectiveness of extension activities

- Informal group discussions held for evaluation

- Watershed Conservation Committees directly involved in evaluation and monitoring of project

Training:

- Staff training courses held in road stabilisation and erosion control, watershed management; training workshops held on conservation extension education, monitoring and evaluation

- Paraprofessional training course for naikes

- Study tours to Korea, Indonesia and Japan

- Leader study tours for staff and farmers within project area and to other projects

- "In spite of continuous efforts made by the project, in-country fellowships could not be utilised due to absence of clearcut policy on the part of the Institute of Forestry to use project support for fresh trainees not working for the Government." (Mid-term Evaluation: 1984)

Communication:

- Communication efforts oriented generally toward public awareness: "Insufficient attention has been given to the development of effective communication about conservation methods which can be implemented by the farmers themselves. This is because the project has not focussed on this approach. Extension has mainly consisted of informing the farmers of project plans in order to obtain their agreement for government undertakings. This has been effective for government implemented activities, but does not provide the farmer with enough knowledge of how the community or individuals might actually carry out conservation activities on their own initiative with government support as already is the case with terrace improvement." (Mid-term Evaluation)

- Media: film and slide shows, posters, flipcharts, newsletters etc.

- Face-to-face extension by 5 project officers, 8 mid-level and 18 senior workers

- Use of local people as senior workers in extension

- Use of retired Gorkha soldiers in extension and implementation activities

- Introduction of schools programme in Kathmandu Valley and Trisuli areas for communication

- "The question is no longer how to establish communications so that farmers CAN implement conservation methods, but to establish "communications" so that farmers WILL. A decisive factor in this is the trust and security that local and central government can provide to assure the individual that benefits will actually be realised and that they will be distributed fairly. " (Mid-term Evaluation: 1984)

Project Profile 6 (RCUP)

RESOURCE CONSERVATION AND UTILISATION PROJECT, NEPAL

Sponsors: HMG/N-USAID

INTRODUCTION

The Resource Conservation and Utilisation Project (RCUP) was initiated in 1980 with a 15-year expectation, funded by USAID and HMG.

The project has two principal components:

1. Support for a wide range of conservation and development activities conducted in two major river catchments (the Kali Gandaki, including parts of Mustang and Myagdi Districts, and the Gorkha region drained by the Buri Gandaki and two smaller rivers); activities include soil and water conservation, forest management, irrigation, drinking water schemes, livestock and range-pasture management, agricultural development, alternative energy development and fisheries development.

2. Support for a multi-faceted education and training programme aimed at developing the technical and managerial staff needed for a long-term attack on the problems of environmental degradation.

This element of the project includes:

(a) Collaboration on the establishment of the Institute for Renewable Natural Resources to train professional personnel for government conservation and reforestation programmes
(b) Support for the In-service Training Wing of the Ministry of Forest and Soil Conservation
(c) Provision of training in the USA and elsewhere

Project Summary:

Duration	:	1980 - 86
Area	:	Myagdi, Mustang and Gorkha Districts, Western Nepal
Cost	:	US $32.56 million
Donor	:	USAID
Implementing Agency	:	Department of Soil Conservation and Watershed Management, HMG/N

1. FORMS OF PEOPLE'S PARTICIPATION IN THE PROJECT

Planning:

- Baseline survey conducted by APROSC
- Eight Panchayat Resources Development Plans, involving consultations in districts and villages, prepared by APROSC
- Informal discussions held at national, district and village levels
- Project designed by HMG, interagency coordinating committee Chaired by Director General of DSCWM

Decision-making, Consultation and Negotiation:

- Formal consultations at national government level by RCUP and SECID (USAID Contractor - South East Consortium for International Development)
- Project negotiated at national level through DSCWM
- District level Catchment Conservation Committees (CCC) meet quarterly to formulate annual programme under RCUP (Membership: district level govt., officials, heads of women's and farmers' organisations, District Panchayat member, and representatives from Village Panchayats)
- Village level Panchayat Conservation Committees (PCCs) promoted, as sub-committees of village assemblies, advise on resource conservation and project-related development and management issues, and to develop Panchayat Resources Development Plans; in practice few PCCs have been created and used
- Experimentation with gaun sallah (village consultation) technique of consultation with villages and their representatives in development of techniques for local resource conservation utilisation planning (involves up to 7 days of intensive discussions at village panchayat and ward levels)

- Encouragement of women's participation in decision-making: president of National Women's Organisation at district and village levels designated as members of CCC and PCC; but often local resistance to women's participation occurs, and local involvement of women is minimal

- "It would probably be sensible to devote greater attention to working downward through the established district level mechanisms with the ultimate aim of building more effective planning links from the district to the village panchayats rather than involving central staff extensively in working directly with villagers, except possibly in the development of pilot approaches" (Special Evaluation of the RCUP)

Implementation/Installation:

- Programmes implemented at national level through DSCWM; district level involvement through CCCs; village level involvement through PCCs, but not fully established

- Some programme activity on state land; mostly on group and individual resources
  Note: Increasing tendency directed programmes on private/individual resources

- Fully-paid labour in programmes on state resources; on group and private resources some labour subsidised, some voluntary

- Informal contact through PCVs posted in project areas, living in villages, as foresters and soil conservation technicians

Ongoing Management:

- Maintenance labour subsidised by project; maintenance workers trained

- Maintenance materials provided by project

- Operational management at national level by Project Implementation Committee; at district level through CCC; village level through PCC (theoretically) and Users' Groups

- Enforcement by project-employed guards; also by Forest Committees, but these are not successful

2. INCENTIVES USED TO SUPPORT WATERSHED MANAGEMENT ACTIVITIES

Individual/Household Resources:

- Terrace improvement: until 1985, 70 percent costs project-paid, 30 percent by individual; now 50

- Irrigation: all costs project-paid

- Tree-planting, orchards : free seedlings provided.

- Cropping system changes : free seeds provided in selected areas

- Pasture development: some seeds provided free

- Energy alternatives: free chulhos provided; also solar water heaters, solar driers, peddle threshers, water mills, bio-gas plants provided free or with loans

- Improved livestock breeds owned by government made available to farmers until 1985

- Free veterinary services provided

Group Resources:

- Plantations, slope stabilisation, torrent control structures, erosion control drainage: all material and labour costs project-paid

- Grass cutting rights provided on closed land

- Irrigation: all materials and most of labour project-paid (some voluntary labour)

State Resources:

- Forest plantations: project-paid

- Trail repairs: project-paid

- Small number of slope stablisation, torrent control and erosion control drainage activities: project-paid

  Note: "Early indications from villages where project activities have been in place longer indicate a great potential for local responsibility and maintenance of conservation and other project activities through the strategy of combining short term production improvements and long term conservation practices." (Special Evaluation of the RCUP)

3. ACTIVITIES UNDERTAKEN TO SUPPORT PARTICIPATION

Policy Measures:

- Some PF and PPF handed over to local groups
- Local employment stimulated by fact that most project activities are fully paid
- Some off-farm employment support: fish ponds, soap-making scheme
- "The RCUP appears to have contributed to the process of institution building and decentralisation through promoting the use of the CCC and, thereby, local participation in resource development planning." (Special Evaluation of the RCUP)

Research, Monitoring and Evaluation:

- Some on-farm and community resource trials: pre-production verification and forestry species trials
  Note: "Most people encountered in Nepal already seemed convinced of the value of soil and water conservation works, and probably would not be particularly impressed by data from run-off plots, or other systems." (Special Evaluation of the RCUP)
- Occasional surveys and case studies conducted: soil survey, physical monitoring of small watersheds, land classification research, studies of women in development
- Benefit-cost studies conducted for each component
- Regular field visits made by project staff
- Some evaluation activity in CCCs and PCCs

Training:

- Extensive training at all levels and components through Ministry of Forest, Soil Conservation Training Wing, the Institute of Renewable Natural Resources, line agencies, and programmes in the USA, India and the Philippines
- Paraprofessional training: Junior Technicians (JTs), Junior Technical Assistants (JTAs), Agricultural Assistants etc.
- Key Farmer training
- Two to three leader study tours per year

  Note: "If the training of future resource management staff does not emphasise sensitivity to local participation and planning problems, the current effort to upgrade personnel may fall short of the need. There is in the project great need to conduct training related to local level planning for resource management and integrated extension at the village, ward and farm level." (Special Evaluation of the RCUP)

Communication:

- Media: film and slide shows, posters, fairs, exhibitions
- Face-to-face extension through JTs and JTAs. More emphasis on this since 1983 evaluation, which concluded that "the outreach and extension work in all disciplines associated with the project has been minimal so far." (Special Evaluation of the RCUP)
- Use of local farmers as Agricultural Assistants
- Some extension through schools (particularly water mill scheme) and programmes of the Women's Development Section, Ministry of Panchayat and Local Development

TINAU WATERSHED PROJECT, NEPAL

Sponsors: HMG/N-GTZ-SATA

INTRODUCTION

The Tinau Watershed Project began with an 18-month preparatory phase in 1978 with a 10 to 20 year duration envisaged. The project area is the Palpa District of Western Nepal, with funding provided by SATA (Switzerland), GTZ (Federal Republic of Germany) and His Majesty's Government of Nepal (HMG/N).

The objects of the project are:

1. To establish and implement a large number of sub-projects aimed at conservation, development and effective utilisation of the area's natural resources; the fulfilment of basic needs and the improvement of the socio-economic situation of the population.
2. To strengthen the capability of the Palpa District Administration to the point where it is able, with a minimum of foreign experts, to formulate and administer an integrated programme. TINAU WP is now implementing projects to develop local management and administrative skills, and to promote communication, extension, research and training; in the fields of engineering (soil conservation and erosion control, and irrigation), agriculture (improved farming methods, improved seed selection, treatment and storage, orchards, vegetable production, and sericulture), livestock (improved breeds, animal health and management, and fodder production), community forestry (establishing nurseries and forests, afforestation, and seedling production).

Project Summary:

Duration	:	1978 - 88
Area	:	Palpa District, Western Nepal
Cost	:	1983-88 Phase: SFr. 5.1 million. Rs. 33.4 million
Donor	:	GTZ and SATA
Implementing Agency	:	Dept. of Soil Conservation & WSM, HMG/N

1. FORMS OF PEOPLE'S PARTICIPATION IN THE PROJECT

Planning:

- Household and community surveys and informal discussions conducted at district and village levels
- One-year in-depth anthropological survey of activities of 5 Village Panchayats conducted by Research Centre for Nepal and Asian Studies of Tribhuvan University; partly repeated after 5 years to observe changes

Decision-making, Consultation and Negotiation:

- Formal consultations with national and district level government officials
- Tinau Development Meetings held with Pradhan Panchas (elected village headmen) and local people twice a year
- Continual local contact maintained by locating project headquarters in District (Tansen)
- Since 1983, Panchayat Development Programme Planning (PDPP): 10-day village level planning workshops, conducted in 6 panchayats per year. 25 participants: panchayat functionaries and villagers selected by village panchayat (TINAU WP guidelines include 6 women representatives). Workshops include discussion of problems and potential programmes, ward visits, presentation of a 5-year programme to District Officers for comment and decision on programme by Village Assembly.

Implementation/Installation:

- PDPP workshops form committees to partner District Offices for implementation of programmes. ("Wherever offices took the task seriously, the villagers were almost grateful and very willingly contributed the required manpower. In these

Panchayats an exceptionally positive attitude to the work of District Offices and the TINAU WP as a whole developed." (Suelzer and Sharma: 1985)

- TINAU WP implementation labour roughly equally divided between voluntary and paid, according to government department policy (Ministry of Panchayat and Local Development: voluntary; Department of Soil Conservation and Watershed Management: partly paid)

- Local paraprofessionals used: paid (e.g. livestock, forestry and veterinary assistants) and voluntary (e.g. drinking water and conservation workers)

Ongoing Management:

- Maintenance labour and materials provided voluntarily at district and village levels; from 1984, paid forestry maintenance workers (to be introduced in other sectors too)
- Training courses provided for village maintenance workers
- Operational management paid by project
- Enforcement carried out by village-level User Committees
- Continuous involvement of local people through Panchayat Planning meetings and User Groups

2. INCENTIVES USED TO SUPPORT WATERSHED MANAGEMENT ACTIVITIES

Individual and Group Resources:

- Approximately 50 percent subsidy of land-use changes, e.g. seed for multiplication programme, contour strip farming, orchards, fodder trees, and grass seed
- Cut and carry incentive for land closure for afforestation
- Supply of improved livestock breeds, free veterinary services, stall-feeding scheme planned
- Materials and technical assistance provided for engineering measures, e.g. construction and repair of irrigation channels, gabion crates
- Subsidy of energy alternatives: 500 chulho a year; fuelwood supply scheme
- Materials and training provided for Income Generation and Cottage Industries Programme
- Group farming income generation activities implemented, e.g. orchards, fish ponds, bee-keeping etc.
- Immediate Implementation Measure (Rs.30,000 grant) to encourage villagers to take a decision and joint responsibility on a programme; second installment given if first installment is correctly accounted

State Resources:

- Programmes for land use changes on government resources dropped due to need for high-cost caretakers
- Material and technical assistance provided for engineering measures - slope stabilisation, erosion control drainage, torrent control etc
- Large projects (over Rs. 25,000) implemented by contractors with fully-paid labour

3. ACTIVITIES UNDERTAKEN TO SUPPORT PARTICIPATION

Policy Measures:

- Income Generation and Cottage Industries Programme to provide off-farm employment support
- Land use regulations planned for pasture development
- Project financing designed to stimulate organisation of groups: minimum of 10 percent of panchayat must benefit from an input

Research, Monitoring and Evaluation:

- Many on-farm and community resource trials conducted in pasture development, forestry, and nurseries etc
- Detailed monitoring of 50 selected activities at district, village and individual levels
- Micro-evaluations conducted 2 to 4 times each year
- Evaluation meetings held with local people as part of PDPP

- Panchayat Profile kept as part of PDPP on population and resources of all panchayats in project area

Training:

- Staff: 70 per year at district, national and international level
- Paraprofessional: 5 to 10 per year (e.g. forestry caretakers, maintenance workers, nurserymen)
- Key farmers : 4 per year
- Integrated study tours for staff and "Learning from Nepal" tours for farmers
- Women's Training Programme for 20 women assistants per month
- Overall integrated project training given 6 times per year to train staff in all areas of project to avoid over-specialisation
- Education forms important element of PDPP workshops; concepts of conservation, environmental management, productive investment, programme planning etc.

Communication:

- Media: film and slide shows, pamphlets, posters, newsletters, instructional comics, local press, exhibitions, livestock competitions
- Face-to-face extension is major form of communication
- Use of local intermediaries: key farmers, paraprofessionals, women assistants, schools
- PDPP "planning workshops became a most effective extension approach which is ... problem-oriented" (Suelzer and Sharma: 1985)

Project Profile 8 (TARBELA)

TARBELA AND MANGLA WATERSHED MANAGEMENT PROJECT, NWFP, PAKISTAN

Sponsors: Govt. of Pakistan/World Food Programme

INTRODUCTION

The project has been sponsored by the Water and Power Division through the Ministry of Food and Agriculture and is being implemented by the NWFP Forest Department over a five year period (1983-84 to 1987-88). The project is being financed jointly by the Government of Pakistan (234.975 million rupees) and World Food Programme (292.688 million rupees). This project is a continuation of conservation work undertaken previously by the Water and Power Development Authority (WAPDA) to prolong the useful life of Tarbela and Mangla reservoirs.

The main objectives of the project are to reduce siltation in Tarbela and Mangla reservoirs, to control the incidence of flash floods and regulation of discharge into rivers and to improve the socio-economic conditions of the population residing in the catchment areas through:

1. Rationalisation of present patterns of bad land use
2. Increase of forest wealth in the catchment areas
3. Generation of job opportunities for locals and affectees of Tarbela Dam to encourage them to adopt a mode of life which does not jeopardise the life of Tarbela reservoir

Project Summary:

Duration	:	1983 - 88
Area	:	Tarbela and Mangla catchments, NWFP
Cost	:	Rs. 527,663
Donor	:	WFP
Implementing Agency	:	NWFP Forest Department

1. FORMS OF PEOPLE'S PARTICIPATION IN THE PROJECT

Planning:

- Informal and formal discussions at national level

Decision-making, Consultation and Negotiation:

- Informal consultations with leaders at regional and village levels

Implementation/Installation:

- Project implemented primarily on private land
- Labour on private resources subsidised through food for work plus Rs. 3 per day cash supplement
- Labour on nurseries subsidised through food for work plus Rs. 5 per day cash supplement
- Some conservation work on group resources, shamlat, land
- Paraprofessionals used as guards, chowkidars, on daily wages

Ongoing Management:

- Chowkidars' wage paid through food aid plus cash subsidy
- Maintenance materials provided by project
- Enforcement individual responsibility, overseen by chowkidars
- Enforcement agreement with individuals valid for 5 years permits farmers to cut fodder from afforested land but animals have to be tethered for the duration of the agreement
- Agreement commits the Project to terrace slopes under 15 percent; slopes over 15 percent will be afforested and maintained by the Project
- Three main species - chir pine, deodar, walnut - protected by Forest Department; felling prohibited even on private lands without permit from the Forest Department; collection of dry twigs permissible

- Trees on shamlat land may be felled without permit for mosques or other communal works

2. INCENTIVES USED TO SUPPORT WATERSHED MANAGEMENT ACTIVITIES

Individual/Household Resources:

- Food subsidy for terrace improvement
- Irrigation and drainage channels constructed through food subsidy
- Extensive tree plantation primarily on private but also on public lands; considerable demand for fruit and fodder trees
- Maize, pulses etc. encouraged and planted on terraces for fodder
- Experimentation with improved grasses for pasture development
- Chowkidars assist in ensuring land closure against grazing even on private lands
- Replacement of goats with larger animals encouraged
- Stall feeding tried but not successful; small farmers prefer to keep part of their land for free grazing
- Landowners with more than 5 ha. claim to practice stall-feeding; reportedly obtain fodder through communal cutting of grass (ashre)

Group Resources:

- Plantations on some common property areas, shamlat
- Badlands stabilisation works
- Channels for irrigation and water harvesting
- Food aid but no cash subsidy for check dams, bridle paths etc.; project personnel report difficulty in mobilising labour without cash supplement to food aid

State Resources:

- Food subsidy for bridle paths and inspection paths
- Check dams, reservoirs and ponds for livestock

3. ACTIVITIES UNDERTAKEN TO SUPPORT PARTICIPATION

Policy Measures:

- Off-farm employment support through subsidised labour and recruitment as chowkidars for project activities; part-time school children's employment
- Informal incentives in the form of 15 - 20 additional man-days of work credited for killing porcupines which destroy pine saplings

Research, Monitoring and Evaluation:

- On-farm trials conducted with contour planting but criticised by farmers for reducing land available for fodder grasses
- Field visits by staff primary means of monitoring and evaluation

Training and Communication:

- No training provided
- Largely face-to-face extension relied upon for communication
- Local individuals used as intermediaries
- Informal use of political representatives: members of Provincial Assembly, Union Council members, etc.

Project Profile 9 (COM.FOR)

COMMUNITY FORESTRY PROGRAMME, KHAS AND PROTECTED FORESTS, CHITTAGONG, BANGLADESH

Sponsor: Govt. of Bangladesh

INTRODUCTION

Chittagong District has about 40,000 acres (16,200 ha) of Khas hilly land and 100,000 (40,500 ha) acres of protected forests. Most of this area has been virtually denuded of tree crops and ground vegetation through regulated and unregulated felling, burning, grazing and expansion of rural agriculture. These barren areas are the major cause of downstream siltation in the Karnafuli watershed. Afforestation efforts have been thwarted by human interference due to population pressure and the prevailing socio-economic conditions in the area. The need was felt to develop a programme which could cover these areas with productive vegetation while concurrently rehabilitating the people.

The aim of the Community Forestry Programme is to connect the "naked man to naked land" in order to rehabilitate both. Community Forestry seeks to introduce composite planning for a coordinated land development programme to be implemented for the people and by the people.

The objectives of the programme are :

1. To settle landless labourers on barren land to develop a productive vegetative cover yielding a steady recurring income

2. To develop the capacity of settlers for development on a self-help basis through provision of technical advice on procurement of bank loans

3. To organise settlers into a village level cooperative for reviewing progress of land development and to take responsibility for collective needs (e.g., 5 to 10 community school) and into smaller groups of 5%1 for practical management and collective responsibility for their work and loan repayments

4. To ensure equitable distribution of benefits within the region by aiming at creating a locally viable economy and restraining the settlers from competing for jobs with others outside the settlement

5. To ensure the long-term viability of the unit by evaluating the land development work over 5-7 years and by introducing concepts such as indivisibility of arm units (land to be inherited by only one member of the family)

6. To develop human resources in such skills as book-keeping, marketing and education

The programme was initiated on a pilot basis in 1979 at Betagi. 100 families of landless Bengali labourers were allocated approximately 4 acres of Khas land each on annual lease with the assurance of permanent allotment when the land is successfully developed in accordance with the prescribed plan. The programme was expanded to Pomora in 1980, where a second batch of 92 families were settled on 506 acres of Khas land and protected forests. Progress was slow in the beginning. Some of the original 100 families settled at Betagi were discouraged and dropped out but 67 families have continued and are now obtaining substantial income from short and medium-term crops. The programme was evaluated recently and permanent settlement is expected to take place soon. With the demonstrable success of the Betagi-Pomora experience, it is expected that the programme will be extended to other parts of the district.

Project Summary:

Duration	:	1979 onwards
Area	:	Hilly land and Protected Forests of Chittagong District
Cost	:	Taka 0.3 million (approximately US$ 12,000)
Donor	:	Bank loans through "Gramin Bank Prakolpa" of the Krishi Bank
Implementing Agency	:	Forest Department

1. FORMS OF PEOPLE'S PARTICIPATION IN THE PROJECT

Planning:

- Participation in initial planning limited to informal local discussions

Decision-making, Consultation and Negotiation:

- Formal consultations held with Union Parishad for selection of the families to be allocated land for settlement
- Informal gatherings held initially with selected farmers
- Later formalized into regular weekly meetings of the community for monitoring, decision-making and management
- Programme aimed exclusively at settling landless labourers

Implementation/Installation:

- Government land leased to selected individuals for development and treated henceforth as private resources
- Voluntary labour relied upon for these resources

Ongoing Management:

- Labour for maintenance contributed by community on voluntary basis on their own land or to assist other members of their sub-group
- Maintenance materials also procured through private resources: bank loans for seeds, seedlings, equipment and fertiliser
- Technical advice and assistance in land use planning provided by **Forest Department** but private management operationalised without remuneration
- Enforcement of development objectives responsibility of sub-groups and village organisations: failure to comply with plan or default of loan resulted in censure and sanctions against the sub-group concerned; the result is peer group pressure on defaulting individuals to improve or leave
- Long-term sanction exists in the form of withholding permanent settlement until programme staff feel sustainable productivity has been achieved

2. INCENTIVES USED TO SUPPORT WATERSHED MANAGEMENT ACTIVITIES

Individual/Household Resources:

- Considerable tree planting encouraged through agroforestry techniques: these include long-term deciduous trees like teak and gamar (Maline arborea) sicory (Alvizia procera) jackfruit, as well as medium term fruit trees like lemon, papaya and guava
- Marketable horticulture crops introduced as the main source of income; these include pineapple, chilli, brinjal, banana, watermelon, and arhar (Cajanus cajal), preference being given to leguminous crops
- Tentative resource security with the promise of permanent tenure for the individuals concerned is the main incentive for all aspects of the programme
- Resource security and availability of fuelwood on their own land also prevents encroachment in surrounding forest

State Resources:

- Initial sites carefully selected to ensure proximity to roads for access to markets; some trails have been constructed to enable access to the fields
- Resettlement on state resources which have been turned over to settlers is the major component of the programme

3. ACTIVITIES UNDERTAKEN TO SUPPORT PARTICIPATION

Policy Measures:

- Existing legislation regarding disposition of Khas land by Deputy Commissioner utilised to procure renewable leases for settlers and assure tenure security
- Production of marketable crops encouraged
- Adherence to land use plan developed by Forest Department is a precondition for inclusion with the programme

The recommended cropping pattern is:

1. Short-term crops; hill paddy, cotton, sesame, leguminuous vegetables, chillies, water melon and arhar

2. Medium-term crops; papaya, banana, brinjal, chillies, pineapples and legume fodder for cattle

3. Long-term crops; jackfruit, guava, cashew nut, rubber, mulberry (for sericulture), lemon. Ipil-Ipil, bamboo, cane, and date palm (only around the homestead and boundaries of land)

- Although actual legislation concerning group organisation has not been enacted the community at each settlement is organised into sub-groups for practical management and village level organisation for assessing work and dealing with shared community needs.

Research, Monitoring and Evaluation:

- No formal trials conducted but progress development work carefully monitored by the community at their weekly meetings and by the Forest Department

- Land development evaluated by the Forest Department after five years to consider permanent allotment of developed land

Training and Communication:

- Communication limited to face-to-face extension by staff of Forest Department, primarily at the weekly meetings

- Community leaders and farmers also used as channels of communication

HILL TRACTS DEVELOPMENT PROJECT, CHITTAGONG HILL TRACTS, BANGLADESH

Sponsors: Govt. of Bangladesh/Asian Development Bank

INTRODUCTION

The Hill Tracts Development Project is the first multisectoral project undertaken to improve living conditions of the people of the Chittagong Hill Tracts (CHT).

The main objectives of the project are:

1. Settlement of shifting cultivators and landless farmers to improve their income and living conditions through increased agricultural production and related economic activities
2. Strengthening of agricultural support services including research, extension, storage and nurseries
3. Improvement and development of essential social and economic infrastructure and services in the priority areas which may later be extended to other areas in CHT districts
4. Establishment of necessary institutional and organisational structures, and strengthening of local planning and implementation capabilities required for the longer term development of CHT: the Project is being implemented, with financial assistance from the Asian Development Bank, by the Chittagong Hill Tracts Development Board (CHTDB) in collaboration with the Forest Department, Department of Roads and Highways, Bangladesh Small and Cottage Industries Corporation (BSCIC), Bangladesh Agriculture Research Institute (BARI), Horticulture Development Board, and the Directorate of Agriculture Extension and Management. The Project covers three northern sub-watersheds of Chengi, Myani and Kassalong of the Karnafuli River affecting Kaptai Lake and Hydro-Electric Dam.

Two components, the upland settlement schemes and road networks account for about 70 percent of project costs. The settlement schemes are expected to benefit about 2000 families. Each family is being alloted 6 acres of crop land (4 acres for rubber and 2 acres for horticulture) and 0.25 acres as house plot. The settlements are being provided with essential amenities including access roads, water supplies, schools and medical facilities. In addition, 42 miles of road are expected to be constructed. 18,000 acres (7284.35 ha) of steep slopes are earmarked for afforestation with suitable timber species and a further 300 families settled as part of this afforestation programme.

Project Summary :

Duration	:	1981 - 1989
Area	:	Chengi, Myani and Kassalong Valleys (Rangamati District), Chittagong Hill Tracts
Cost	:	US $ 41 million (donor component US $28.5 million)
Donor	:	Asian Development Bank
Implementing Agency	:	Chittagong Hill Tracts Development Board (CHTDB)

1. FORMS OF PEOPLE'S PARTICIPATION IN THE PROJECT

Planning:

- Community surveys conducted at regional and village levels
- Informal discussions held at national, regional and village levels

Decision-making, Consultation and Negotiation:

- A Consultative Committee of CHTDB which consists of tribal representatives, local officials and other prominent persons, advises CHTDB in formulation and execution of projects and schemes. The Committee is now being expanded to permit participation of more tribal representatives and such other persons as the Divisional Commissioner and Chairman of CHTDB consider necessary.

- Similar Project Consultative Committees formed in each of the three northern valleys under the Chairmanship of the Deputy Commissioner of CHT District

- A tribal representative appointed to the Board of CHTDB

- A Central Management Unit (CMU) established in each of the three settlement areas for development of rubber plantations

Implementation/Installation :

- Transfer of state and group resources (Khas land and Unclassed State Forests) to individuals for better land management

- Labour paid by Project for work on rubber plantations on private land; this amount is recovered from latex produced subsequently

- Development of horticulture is subsidised by provision of planting materials, free fertilisers for first three years, and advice and technical guidance

- Grants provided for purchase of housing materials

- Similar subsidies provided for settlers under afforestation scheme

- Settlers paid wages for clearing and planting saplings on state land

- Settlers allowed to practice agroforestry on the area being afforested each year

Ongoing Management:

- Settlers paid wages for maintenance of afforested areas; they will also share the future income from harvesting of plantation timber

- On private resources, maintenance, labour and materials subsidised for first few years until the rehabilitated land generates enough income to sustain the settlers

- Operational management on state resources done by project staff with assistance of hired labour

- On private resources, too, CHTDB retains primary responsibility, particularly with regard to resettlement; the local community partly responsible for ongoing management

- The CMUs (Central Management Units) in each of the three settlement areas supervise and manage rubber plantations

- Enforcement done both by the local community and through paid guards on timber plantations

2. INCENTIVES USED TO SUPPORT WATERSHED MANAGEMENT ACTIVITIES

Individual/Household Resources :

- Tree plantation on private resources supported through a number of incentives

- Resource tenure security provided through allotment of 0.25 acres of house plot and 6.0 acres of crop land on upland settlement schemes; and 0.25 acres house plot with 5.0 acres of upland for horticulture and bamboo plantations as part of afforestation and settlement scheme

- Planting materials for horticulture crops (bananas, lemon, jackfruit, ginger, etc.) and fertiliser for three years provided free of charge on horticulture component (2.0 acres per household) and immediate cash payment (to be deducted from subsequent rubber production) for work on rubber component (4.0 acres per household) as incentives for upland settlements schemes

- Similar incentives for fruit trees and bamboo plantations on private resources under afforestation and settlement scheme

- Cropping system changes encouraged, through incentives in kind and resource tenure security, for promotion of horticulture, agroforestry, and rubber and bamboo plantations in place of subsistence shifting cultivation

Group Resources :

- Incentives provided for sedentary horticulture reduce pressure on natural forests which have traditionally been considered community resources; the current cycle of shifting cultivation jhum, down to about five years, has been causing severe damage to the forests

State Resources:

- As with group resources, tenure security through settlement schemes benefitting natural forest management and also leading to voluntary land closure

- Cash wages paid to settlers for planting and maintaining timber forests

- Incentives in kind provided by permitting agroforestry through planting of upland rice (cown) maize, cotton, etc., on the area being afforested each year

- Income from timber plantations on state resources also to be shared with settlers

- Cash wages paid for road construction work in project area; where sufficient quantities of stone aggregate are not found, soil stabilisation techniques are being used to protect the roads

- Resettlement encouraged through a combination of tenure security and incentives in cash and kind

3. ACTIVITIES UNDERTAKEN TO SUPPORT PARTICIPATION

Policy Measures:

- Existing regulations regarding land disposition are utilised; Deputy Commissioner can allocate land technically owned by government: up to 5 acres of flat alluvial land for food production or 10 acres of hilly land for fruit or tree cultivation per household; Deputy Commissioner is also empowered to control and regulate shifting cultivation.

- Project uses the above regulations to allocate land for settlement schemes to tribals and marginal farmers. The allotment is permanent and is aimed at eliminating jhum cultivation while ensuring sustained productivity and improving forest management, thus having a positive impact on the watershed.

- Employment is provided to settlers through afforestation, forest management, subsidised private plantations, as well as through the development of cottage and rural industries by providing technical support and facilities required to improve implementation of the BSCIC programme.

- Project is using a combination of incentives and disincentives to promote better land management through use of horticulture and agroforestry techniques which are highly productive and better for erosion control.

- Consultative Committees have been formed in each of 3 valleys and at the central level of CHTDB to permit local participation in decision-making and implementation.

- CMU's have been established for management of private rubber plantations; government has committed funds for construction of rubber factories and continued operation of CMU beyond project period.

Research, Monitoring and Evaluation:

- Agricultural research being implemented by BARI at Raikhali and at new research station being developed by project in Chengi Valley

- Chengi research station to develop crops and cropping patterns suitable for the area under medium slopes

- Field trials also being conducted in forests by Forest Department

- Data base supplemented by field visits and occasional surveys of farming practices; formal evaluations conducted primarily for donor purposes

Training and Communication:

- Staff training provided for operation of CMU's and afforestation programmes

- Local engineers, technicians and workers provided on-the-job training in various aspects of road construction

- Training of agricultural extension workers by research scientists also provided for

- Tribal extension agents trained in technical institutes

- Two training centres constructed for agricultural extension training

- Local staff also sent to other countries of the region for training and study tours

- Assistance provided to BSCIC in the form of consultancies for training and formulation of new programmes

- Communication primarily through face-to-face extension by paraprofessionals, local leaders, and through user groups

JHUMIA REHABILITATION PROJECT, BANDARBAN FOREST DIVISION, BANGLADESH

Sponsor: Government of Bangladesh

INTRODUCTION

The project area lies within the watershed of the Shangu River, the second major river running parallel to the Karnafuli in the Chittagong Hill Tracts (CHT). The river is used mainly for irrigation and some inland navigation. The watershed is facing problems of deforestation and erosion due, in part, to the decreased cycle of jhum cultivation (5 years) by hill tribes.

The objectives of the project are:

1. To resettle selected families of tribals on government land which is allocated to them for sedentary cultivation (0.5 acre as homestead and 4.5 acres as crop land)

2. To introduce scientific cropping systems using horticulture with multi-storeyed agroforestry to ensure viable year-round production

3. To improve the quality of life of the community through provision of health and education services and organise provision of other infrastructural facilities such as link roads with the cooperation of relevant departments

4. To develop off-farm income generating skills of the community

5. To strengthen forest management by involving the community in forest plantation and maintenance work

The project was initiated in 1982 at Sharonpara with 50 families but has now been expanded to 8 more settlements within Bandarban Forest Division. New settlements are being added every year.

Project Summary:

Duration	:	1981 - 1989
Area	:	Bandarban Forest Division,
Donor	:	Government of Bangladesh
Implementing Agency	:	Forest Department

1. FORMS OF PEOPLE'S PARTICIPATION IN THE PROJECT

Planning:

- At the planning stage informal discussions held at the national and regional level

Decision-making, Consultation and Negotiation:

- After approval of the basic plan, informal consultations held with leaders at the regional level at Rangamati and Bandarban and at the local level with tribal leaders
- Selection of families for resettlement by Committee at sub-division level
- Informal gatherings as the main forum for activity identification in the settlements
- The project to be aimed at rehabilitating hill tribes by replacing shifting cultivation with sedentary farming

Implementation/Installation:

- Project conducted on government land allocated to selected tribal households for private use at the settlements
- Afforestation and plantation management continues on government land
- Settlers hired on daily wages for work on forest plantations: males Taka 30, females Taka 25 per day
- Labour for land development on private resources subsidised during the initial period in the form of a subsistence allowance paid to each household at the rate of Taka 1,500, 1,000,and 500 for the first, second, and third years respectively

Ongoing Management:

- Voluntary labour for maintenance of private resources, except for the subsistence allowance paid during the first three years
- Maintenance labour on forests plantations paid as daily wages
- Maintenance materials such as seedlings, fertiliser and pesticides initially provided by the Forest Department on private and government resources
- Subsequently, materials obtained privately for private farms
- Even on government land, the basic implement used is the privately owned sickle (dao)
- Management of private resources the responsibility of the owners but they are advised on appropriate forms of land use by the Forest Department; common matters discussed at the meetings of the settlement's organisation
- In forest plantations, management rests with the Forest Department who rely on hired workers for implementation
- Tribals legally permitted to obtain fuelwood and timber for self-consumption from Unclassed State Forests
- Further encroachments obviated by the allocation of land for cultivation

2. INCENTIVES USED TO SUPPORT WATERSHED MANAGEMENT ACTIVITIES

Individual/Household Resources :

- Security of resource tenure is the most important inducement for sound land management
- Seedlings, chemical manure and insecticides provided for plantations of lemon, jackfruit, guava, papaya, coconut, betelnut, edible banana, and improved bamboo
- Land use plan developed by Forest Department to replace jhuming with permanent settlement
- Settlers sometimes fence off their land as protection against wild animals

State Resources:

- Teak, mahagony, gamar (Maline arborea), and jamun (Sisesium gandus) planted on government land
- Settlers entitled to do jhum cultivation during the first year on land earmarked for timber plantation as clearing and burning prepares the land for subsequent plantations
- In addition wages are paid for labour on government plantations, settlers working on these plantations entitled to 25 percent of proceeds from sale of products obtained from forest thinning (done every 5 years) and 10 percent of proceeds from harvesting timber on maturity
- Gamar is destroyed by wild deer; Forest Department has erected rattling bamboo scarecrows
- Resettlement possible through allocation of land to provide tenure security supported by considerable assistance in kind for improved land use
- Link roads constructed with the cooperation of the Chittagong Hill Tracts Development Board, linking settlements with nearest market access road

3. ACTIVITIES UNDERTAKEN TO SUPPORT PARTICIPATION

Policy Measures:

- Existing legislation used to allocate government land at the disposal of Deputy Commissioner to tribals for private purposes as incentive to give up shifting cultivation
- Forest Department policy to permit jhum cultivation during first year facilitates plantation of timber species
- Forest Department policy to share products from thinning and timber harvesting serves as incentive for participation in forest management
- Employment provided both in forest plantations as well as through support of cottage industries e.g. weaving by the Bangladesh Small and Cottage Industries Corporation
- Land development plan permits jhuming in first year and horticulture/agroforestry subsequently, using

the traditional dibbling techniques with a mixture of seeds in each hole

In addition to tropical fruit trees, settlers plant pineapple, rice, ginger, cown (oryza rice variety), turmeric, sesame, pumpkin, squash, cotton and cucumber; the exact mix of species left to individual farmers

Research, Monitoring and Evaluation:

- Except for personal observations during the frequent field visits by project staff, no evaluation component exists

Training and Communication:

- In-service training for staff in tribal languages

- Study tours organised for farmers from newer settlements to previously established settlements where benefits are demonstrable

Communication:

- Face-to-face communication the only means utilised by project staff

- Locals who know the tribal languages used as interpreters

- Tribals at older settlements form a useful medium to motivate prospective settlers

- Community leaders also used to approach the tribals

LHASA RIVER (KYI CHU) AREA DEVELOPMENT IN TIBET. CHINA

Sponsor: Government of the People's Republic of China

INTRODUCTION:

Development of the Lhasa River (Kyi Chu) basin began in 1958. Although not a watershed management project as such, many of the activities are the same as those found in WSM projects. The Lhasa River flows through the capital of the Tibetan Autonomous Region of China, total population of approximately 200,000, with 120,000 resident in Lhasa. The watershed roughly covers 30,000 square km with altitudes ranging between 5,000 m and 3,600 m where the river joins the Tsangpo (Brahmaputra). Comprehensive data for planning was provided by the Commission for Integrated Survey of Natural Resources (CISNAR).

Development activities have included:

- Construction of a hydroelectric installation (7,000 kw installed capacity), irrigation channels (2,700 hectares), poplar tree planting, improved pasture and range management, flood control structures at Lhasa, agriculture and livestock improvement, infrastructure development, and social services. Before 1980, agriculture was organised under collective and state farms. Since this time, land has been allocated for private, inheritable (but not saleable) use under the responsibility system. Similarly, livestock and trees are now privately owned. As a remote autonomous region with a poor economy, no taxes are currently levied.

Project Summary:

Area	:	Lhasa (Kyi Chu) River Valley, Tibetan Autonomous Region
Duration	:	1958 ongoing
Donor	:	Government funding
Implementing Agency	:	Departments of Hydro-electricity, Forestry, Livestock and Agriculture

1. FORMS OF PEOPLE'S PARTICIPATION IN THE PROJECT

Planning, Decision-making, Consultation and Negotiation:

- Comprehensive resource surveys conducted by CISNAR
- Formal and informal discussions held with village groups (formerly structured as brigades) usually consisting of around 70-100 households; special meetings called as required to deal with planning issues
- Sector plans prepared by concerned offices and departments
- Plan coordination conducted by Economic Planning Committee on annual basis

Implementation/Installation:

- Labour voluntary on private land and small scale resources (such as small scale irrigation systems and individual tree planting) where benefit is directly for the farmer
- Labour on large scale activities (large irrigation structures and hydroelectric installations) paid, but organised by local people through a foreman employed by the government and local people
- Formerly, more use made of unpaid and military labour
- Local paraprofessionals selected by the village to coordinate labour and construction. In large scale efforts, they are paid by government; in small scale it is voluntary

Ongoing Management:

- On larger scale state and group activities (such as irrigation), maintenance labour and materials are paid. On smaller scale where initial construction was conducted by local people, no payment is provided for maintenance or materials.

- Operational maintenance is also carried out by government employees on larger systems, and on voluntary basis for small group and individual resources.

- Local village committees supervise management of group resources within their areas. Each reservoir area also has its own management committee composed of government workers who supervise work within the area

- In order to improve efficiency of water use, government has been organising farmers through irrigation management training

- Enforcement is primarily the responsibility of the government management committee. In some cases stone walls are built around plantations, but in others fencing is not used

2. INCENTIVES USED TO SUPPORT WATERSHED MANAGEMENT ACTIVITIES

Individual/Household Resources:

- Agriculture land and livestock resources privatised and responsibility system introduced around 1980, leading to substantial increases in productivity (roughly estimated at 40 percent increase with approximately same level of supporting inputs)

- Improved wheat seed and livestock breeds provided through special state farms

- Model workers provided prizes for good production performance

- Irrigation water provided from larger government systems

- Ownership of individual trees planted by households even on group resources provided since 1980; no seedlings or nurseries needed since propagation is through readily available cuttings

- In suburban Lhasa area, electricity provided; planned for rural areas in future

Group Resources:

- Some group plantations with technical assistance from government

- Range management introduced in some areas through specification of summer and winter pastures and experiments in pasture improvement

- Small groups closed off some areas for hand harvesting of grass and pasture improvement
- Irrigation water provided through government schemes

- Small river control structures and attempts to channel rivers in rural parts of the basin

State Resources:

- Major hydroelectric dam and irrigation reservoirs constructed and maintained by government

- Major river control structures around Lhasa town

- Road construction to major settlements

3. ACTIVITIES UNDERTAKEN TO SUPPORT PARTICIPATION

Policy Measures:

- Resource tenure rights secured through introduction of responsibility system: agriculture land, livestock, and trees, privatised around 1980, leading to substantial increase in productivity and tree planting

- All agricultural taxes and irrigation charges suspended for present to encourage greater investment in land resources and improved standards of living

- Produce sold either to the government at fixed prices, or on the free market, according to the farmers choice; no contracts for fixed amounts as in other provinces of China

- Local group resource managment encouraged through delegation of authority to villages and promotion of group decision making

Research, Monitoring and Evaluation:

- Agricultural research conducted on experimental farms; so far, little success with increased wheat production

- Improved grass trials conducted on group pasture resources with encouraging results

- No household surveys or socio-economic case studies conducted as yet

- Regular field visits by government staff from various concerned departments

- Evaluation the responsibility of the Science and Technology Commission of Tibet

Training:

- Staff training conducted at the Multi-National University in Beijing and Chengdu

- Local technicians provided with specialised training courses by the departments concerned

- Key farmers provided training in water use, land management, hydroelectric power, etc.

- Leading farmers taken on study tours to other watersheds and other cities (called Learning Groups) in order to "take some scripture"

Communication:

- Media: newspapers, television, radio, and posters

- Face-to-face extension conducted through group meetings in villages

- Local paraprofessional technicians, key farmers, local village groups, and existing political representatives all mobilised in the extension effort

Project Profile 13 (CFDP)

COMMUNITY FORESTRY DEVELOPMENT PROJECT, NEPAL

Sponsors: HMG/N-UNDP-FAO-World Bank

INTRODUCTION

The Community Forestry Development Project began in 1980 and operates in 29 districts of Nepal with funding from UNDP, FAO and HMG/N. The purpose of the project is to provide technical assistance to the community forestry development component of the World Bank Community Forestry Development and Training Project.

The objectives are:

1. To increase the supply of forest resources for hill communities (fuelwood, fodder, timber and poles, **secondary forest** products) and decrease consumption of **fuelwood**

2. To promote self-reliance among hill communities through their active participation in local forestry development activities and shifting management responsibility for community forest lands from government to local communities

3. To reduce environmental degradation and conserve soil and water resources (by changing grazing and livestock management patterns etc.)

The main field activities of the project include nursery construction and seedling production, demarcation, plantation and protection of Panchayat Forests (PF) and Panchayat Protected Forests (PPF), seedling distribution for private planting, preparation of management plans, trial planting of important tree species and fodder grasses, and development and pre-testing of improved wood-burning stoves. Other field activities include training of nursery foremen, plantation watchers, stove promoters and installers, seminar/study tours, and the production and distribution of extension, training and publicity materials.

Project Summary:

Duration	:	1980 - 85
Area	:	29 Hill Districts
Cost	:	US $25 million
Donor	:	World Bank-UNDP-FAO
Implementing Agency	:	Dept. of Forest, HMG/N

1. FORMS OF PEOPLE'S PARTICIPATION IN THE PROJECT

Planning:

- Surveys conducted at national level: Baseline Survey of 900 households and 150 ward leaders in 2nd year; district level: Baseline Survey sample drawn on regional basis; village level: Panchayat, Species Preference, Stove, and Existing Forest Management **Surveys**

- Informal discussions conducted with district leaders during village visits

Decision-making, Consultation and Negotiation:

- Formal consultations with leaders at national level: seminar with Rastriya Panchayat leaders at start, nothing since; at district level: Annual District Meetings; at village level: formal management plans made with local Forest Committees and Panchayats

- Informal consultations with District Forest Controllers and Community Forestry Assistants

- Regional Meetings held approximately 4 times a year to discuss problems encountered in region and assess scope for future activities

- District Seminars of 3 days held in approximately 9 districts per year to allow discussion with district leaders and officers concerning project performance and possibilities for improvement. Participants include Pradhan Panchas, Forest Committee chairmen, participating panchayat committee members, district leaders and officers and other representatives, such as local chairwomen of the Women's Organisations; seminars include one-day field trip

  Note:
  District Seminars felt to be more effective than anticipated

- Panchayat and Forestry Committee public meetings

- Informal gatherings organised by extension agents
  Note:
  Low participation by women in district-level decision making, although project has made efforts; women stove promoters and installers hired at village level

- Use of political processes at national level: Rastriya Panchayat debates programmes and must approve project; at district level: District must plan and approve programme according to Decentralisation Act, but district level decision-making so far not effective; at village level: Village Panchayats must formally apply and agree to join programme

Implementation/Installation:

- Labour for activities on group resources fully paid; on private resources, voluntary

- Project activities conducted on state land transferred to local communities; on group land when panchayat voluntarily agrees to change land use and applies for it; on voluntarily contributed private land

- Use of local paraprofessionals, paid (nursery foremen and watchers) and unpaid (Forestry Committee)

Ongoing Management:

- Maintenance labour on group resources provided by panchayat, partly subsidised by project for first few years; on private resources voluntary

- Some maintenance materials provided by project for group and private resources (free seedlings for replacement)

- Forest Department, Panchayat and Forest Committee jointly draw up and sign management plans for PFs and PPFs
  Note:
  Felt to be most important participatory element: Management Plans (for PF and PPF) made by Forestry Committee, Forest Department and Panchayat is the legal mechanism for handing over authority to Panchayats

- Operational management by Forest Committees with supervisory assistance by Forest Department
  Note:
  Need felt for greater emphasis on forming active forest committees in each panchayat and PF and PPF with specific responsibilities (seed collection, nursery supervision, plantation organisation, etc.) in order to mobilise the local people more effectively to take over responsibility for their own trees (CFDP Annual Progress Report, 1983 - 84)

- Enforcement on group resources by watchers hired by project and "social fencing" (i.e. no fences)

2. INCENTIVES USED TO SUPPORT WATERSHED MANAGEMENT ACTIVITIES

Individual/Household Resources:

- Free seedlings provided for plantations

- Some free fodder grasses provided for pasture development

- Free chulho provided.

- Separate provision for private forests above land ceiling with low tax rates
  Note:
  Ambiguity and conflicting rules on use of private forest products causes suspicion and reservation among farmers concerning use and sale of private forest products in some areas

Group Resources:

- Government forest land handed over for community management

- 75 percent of sales from timber on PPFs and all grass, fuelwood etc., from forests go to local community

- Maintenance and enforcement workers for plantations paid by project

- In some cases nursery water systems also provide drinking water

3. ACTIVITIES UNDERTAKEN TO SUPPORT PARTICIPATION

Policy Measures:

- Resource tenure rights secured by innovative Panchayat Forestry Legislation handing over PFs and PPFs to local panchayats; but lack of delegation of authority to DFC's for handing over forests has slowed progress in this area

- Low tax rates for private forests above land ceiling

- People's involvement hampered by legislative constraints on sharing revenue from PPFs

- Off-farm employment provided in forestry work, plantations, nurseries

- Recent legislation has established User Groups and Ward Groups

Research, Monitoring and Evaluation:

- Some trial plantations and model forest management projects conducted

- Annual surveys conducted on private planting, plantation survival and stove use with microcomputer statistical analysis; also other occasional surveys

- Separate monitoring and evaluation unit

- District case studies conducted by volunteers

- Regular project staff field visits

- District level annual meetings for evaluation; also evaluation of project performance considered in District Seminars

- District level monitoring information provided by DFC; village level by Community Forestry Assistants and Rangers

Training:

- Staff training: officer level orientation training in Thailand; extension level orientation courses and in-service training courses

- Annual training for paraprofessionals (nursery foremen and plantation watchers)

- Some panchayat leader study tours

- Project helped establish separate training division within Ministry of Forests

Communication:

- Media: radio, newsletters, flip-charts, posters, T-shirts, films, booklets

- Face-to-face extension by Community Forestry Assistants

- Nursery foremen and watchers perform communication role in addition to main function

- Forest Committees perform communication role

- Annual District Meetings inform elected panchayat representatives of programme for communication to their constituencies

Note:

"Insufficient extension techniques concerning private planting and maintenance, particularly towards women and children, has resulted in lower survival rates than could have been possible." (CFDP Annual Progress Report for 1983-84).

INTEGRATED HILL DEVELOPMENT PROJECT, NEPAL

Sponsors: HMG/N-SATA

INTRODUCTION

The Integrated Hill Development Project was launched in 1975 with three five-year phases envisaged. It is funded by SATA (Switzerland) and HMG/N and operates in Dolakha and Sindhu Palchok Districts in Central Nepal. The overall goal of the project is to increase food production and attain regional self-sufficiency on the basis of correct manpower and land use as well as sound ecological relations.

The main areas of activity are:

1. The 'Green Sector' - agronomy, horticulture, livestock and fodder development, forestry, erosion control, training and extension
2. Water management - irrigation and drinking water schemes
3. Health - establishment of health posts, provision of medicines
4. Education - scholarship programme, teacher training, adult literacy, school improvement programme
5. Establishment and support of small scale and cottage industry

Project Summary:

Duration	:	1974 - ongoing
Area	:	Dolakha and Sindhupalchok Districts, Central Nepal
Cost	:	Annual Rs. 17 million
Donor	:	SATA
Implementing Agency	:	Ministry of Panchayat and Local Development, HMG/N

1. FORMS OF PEOPLE'S PARTICIPATION IN THE PROJECT

Planning:

- Benchmark Study conducted by APROSC
- Informal discussions conducted at village level
- Policy of 'rolling planning': on the basis that planning and implementation of such a project cannot be separate and isolated activites, "development programmes were gradually launched without much ado about initial surveys, baseline studies, research etc." (IHDP Evaluation)

Decision-making, Consultation and Negotiation:

- National level: Project Coordinating Committee - in frequent meetings means 'there is no mechanism for HMG/N or Swiss Government to provide policy inputs or sense of direction to the project.' (IHDP Evaluation)
- Formal district level consultations
- Grants-in-aid distributed by Village Panchayats
- At start of project, formal links with district or village level government and panchayat institutions were avoided, causing difficulties in building public relations or political support; evaluation indicates necessity to integrate project's activities into local institutionalised structures to make system institutionally self-sustaining

Implementation/Installation:

- Voluntary provision of unskilled labour; skilled labour subsidised by project
- Project activities on state, group and individually-owned land; some state land rented to local communities
- Tuki system of voluntary paraprofessionals forms the visible infrastructure of the project
  Note:
  Approx. 3 percent of tukis are women in spite of fact that most agricultural decisions and work is done by women.

Ongoing Management:

- Project subsidises maintenance labour and materials of group activities

- Operational management performed by project staff - Evaluation felt need for incorporation of local people and reduction of expatriate staff to advisory role

2. INCENTIVES USED TO SUPPORT WATERSHED MANAGEMENT ACTIVITIES

Individual/Household Resources:

- Free and subsidised planting materials for terrace improvement and orchards
- Free fencing provided
- Free and subsidised seed provided for cropping system changes. Also improved seed (unsubsidised) supplied through tukis
- Free chulhos (improved stoves) provided on trial basis for demonstration; later subsidised chulhos provided
- Project rents land as demonstration plots, e.g., for potato and cereal seed production
- Improved livestock breeds provided on temporary basis; also unsubsidised improved breeds supplied through tukis

Group Resources:

- Land closure: labour paid for fencing; products of closed land given to local people, e.g., grass
- Irrigation: Major schemes entirely project paid; smaller schemes most materials and technical support provided by project
- "The construction of irrigation canals could have contributed more, in terms of eliciting conscious action from the people contributing to self-propelled development, if they were constructed in areas where there is abundant fallow land the ownership of which is transferred prior to the survey of irrigation system, to a group of small farmers and landless peasants." (IHDP Evaluation)

State Resources:

- Plantations: saplings and labour paid by project
- Land closure: note - government buys land at BELOW market price
- Road construction: labour, materials and other benefits provided by project

Note:
"The supply of food and the attraction to work as road labourers have together served as a disincentive for the people in the adjoining areas to work in their own farms and introduce improved practices which the project is trying to propagate." (IHDP Evaluation)

- Literacy programme for road construction workers
- Slope stabilisation measures: materials and labour costs paid by project

3. ACTIVITIES UNDERTAKEN TO SUPPORT PARTICIPATION

Policy Measures:

- Community forestry rights in government forests, beginning
- Project provides market for improved products, e.g. potatoes; however market not sustainable after project leaves
- Off-farm employment support with establishment of small scale and cottage industries; however lack of market support, e.g. weaving, knitting, and cottage industry requires legislative protection for success; also temporary project-related employment in carpentry, masonry, portering etc.

Research, Monitoring and Evaluation:

- On-farm trials conducted for research and extension purposes
- Monitoring surveys conducted occasionally
- Case studies conducted
- Field visits by project staff
- Involvement of local people in evaluation through feedback via tukis

Training:

- Professional staff training in Nepal and abroad

- 200 tukis trained in agricultural extension and other new technologies, e.g. chulhos, latrines

- Ranger and Forest Guard training courses

- Integrated functional adult literacy training (note: over half of those enrolling are women)

- Training in new skills, e.g. carpenters, masons, tailors

- Teacher training courses

- Health post worker training

- Integrated Farmer Training and farmers' workshops

- Study tours for tukis within Nepal

- Informal education: " From the point of view of raising the consciousness of the people to secure their participation in action projects and provide an opportunity for reflection upon their activity and consequently building up of their confidence as required for the realisation of self-propelled development, the informal education of people emerging out of the community building process has been the greatest achievement of the IHDP." (IHDP Evaluation)

Communication:

- Media: Leaflets, film and slide shows, bulletins, informative calendars etc.

- Face-to-face extension through tukis

- Extension through teachers

- Evaluation felt extension services did not reach the inarticulate, poorer sections of the community: "the Tuki system has been a significant step forward from the traditional extension model of community and agriculture development. However, it is the population representing the conscious and relatively well to do who have taken advantage of this programme." (I.D.S., Vol.I : 1982 : 116)

Project Profile 15 (NAFP)

NEPAL/AUSTRALIA FORESTRY PROJECT, NEPAL

Sponsors: HMG/N - ADAB

INTRODUCTION

The Nepal/Australia Forestry Project began in 1978, following the Chautara Community Forest Project (1973-78) which established nurseries and conducted species trials. The project is funded by the Australian Development Assistance Bureau and HMG/N. The project area is the Chautara Forestry Division including Sindhu Palchok and Kabhre Districts.

The project has had four areas of activity:

1. Afforestation (demarcation of land suitable for reforestation and the establishment and operation of community nurseries and plantations)

2. Training (formal and non-formal training in forestry)

3. Establishment of a Tree Seed Unit in Kathmandu for seed storage, testing and distribution within Nepal

4. Land use mapping towards the development of management plans for HMG/N forest land and for Panchayat Forests and Panchayat Protected Forests

Project Summary:

Duration	:	1978-83
Area	:	Chautara Forestry Division, Central Nepal
Cost	:	A$ 2.1 million
Donor	:	Australian Development Assistance Bureau
Implementing Agency	:	Department of Forest, HMG/N

1. FORMS OF PEOPLE'S PARTICIPATION IN THE PROJECT

Planning:

- Informal discussions held in three politically important districts at district and village level
- Village level household and community surveys introduced since 1983

  Note:

  Household and community surveys and informal discussions conducted at regional district and village level for preceding Chautara Project (1973-78).

Decision-making, Consultation and Negotiation:

- At national level: Project Coordinating Committee directs project (meets twice a year); also informal discussions held at national level
- At regional level: District Forest Controller (previously Division Forestry Officer) manages project jointly with project staff; also informal consultations held in region with influential politicians
- At village level: Forest Committees run nurseries; also Pradhan Pancha Seminars held twice a year; informal discussions also conducted with Pradhan Pancha
- District President of National Women's Organisation involved in decision-making process

  Note:

  Formal and informal consultations with district and village level leaders conducted during preceding Chautara Project; also formal and informal public meetings

Implementation/Installation:

- Initially project was conceived to operate mainly with volunteer labour at village level. But from 1981, payments made for all pitting and planting operations in PF and PPF, and subsidised planting in some national forest (precedent of paying for plantation establishment costs set by CFDP in 1980, which NAFP was obliged to follow).
- Project activity conducted on PF and PPF handed over to local communities by government for forestry

purposes (made possible by Panchayat Forest Legislation, 1978); also on HMG/N land. Also some activity on individually-owned land, but political constraints encountered.

- Paid paraprofessional nursery foremen (naikes) used on group and government nurseries and plantations. It is envisaged that income from the nurseries will eventually pay for naikes.

Ongoing Management:

- Maintenance labour provided voluntarily at village level (project policy of using labour intensive procedures to increase involvement of local people)

- Materials locally provided (project policy of using simple, feasible technology and minimising external inputs)

- Operational management of government nurseries by afforestation staff of Forest Department; of panchayat nurseries by local villagers, community rangers and naikes; overall supervision, guidance and technical support by project staff

- Voluntary enforcement of land closure: "One of the outstanding achievements of afforestation in the Division is the successful establishment of plantations without the use of fencing. ... A 'forest ethic' has developed over the years due to the persistent efforts ofthe Chautara DFO and the very active assistance of motivated lay people." (Operations of the NAFP) Project policy of withdrawing support from panchayats if afforestation efforts are unsuccessful

2. INCENTIVES USED TO SUPPORT WATERSHED MANAGEMENT ACTIVITIES

Individual/Household Resources:

- Free seedlings provided for small private plantings

- Free distribution of fruit trees as means of rewarding volunteer labour. Also subsidised sale of fruit trees during last 2 years: naikes encouraged to propagate fruit trees for free distribution

- Provision of chulhos

- Provision of fodder trees and shrubs to encourage stall-feeding

Group Resources:

- Free tree seedlings provided for nurseries
  Note:
  "A key factor in maintaining the interest and cooperation of the people, and hence success, is to ensure as far as practicable that the tree species grown are popular." (Operations of the NAFP)

- Cash or school materials provided for student labour in school nurseries

- Free seeds provided for grass beds on nursery risers etc.

- Products of closed land promised to local people when it becomes available: grass cutting, lopping and distribution of fuelwood, timber and other forest produce (under panchayat administration)

- 50 percent subsidy of labour costs and all materials provided for slope stabilisation and erosion control measures

- Provision of improved water supply systems as by-product of nursery water supplies

State Resources:

- Free provision of seedlings for nurseries and plantations

- All materials and 50 percent labour costs for slope stabilisation and erosion control measures

- Financial assistance for materials and skilled labour provided to Roads Department for road construction (Indrawati Valley road)

3. ACTIVITIES UNDERTAKEN TO SUPPORT PARTICIPATION

Policy Measures:

- Transfer of government-owned forest land to local communities for management as PF and PPF: preceding Chautara Project prompted Panchayat Forest legislation, 1978 to make this possible. (Prior to this it was only possible to establish forest on government land.)

- Off-farm employment support as by-product of project activity, e.g. encouragement of use of slate for roofing, producing local quarrying and portering work

- Indirect affect on land use regulations through project pressure put on Ministry of Forests to change policies

Research, Monitoring and Evaluation:

- Trials conducted in nurseries and plantations
- Research conducted at Tree Seed Unit
- Monitoring and evaluation surveys conducted
- Frequent field visits by project staff

  Note:

  Community forest field trials and on-farm trials of fodder and fruit trees conducted by preceding Chautara Project

Training:

- Staff training: undergraduate and postgraduate training in forestry for government officers; training of Rangers and Foresters; Short-term visits to Australia and elsewhere; field training courses for forest workers (Forest Watchers and Guards)
- Paraprofessional training: nursery naikes (also for trainees of other organisations, e.g. TINAU WP, UMN)
- Some naike training courses include training in the motivation of village people (note: this element has been popular with the students)
- Leader study tours for Pradhan Panchas, paraprofessionals and project staff

Communication:

- Media: film unit shows film in bazaars; posters, pamphlets, radio
- Face-to-face extension by naikes
- "The demonstration effect of successfully established plantations in the vicinity of Chautara has been a very powerful motivating factor in encouraging local communities to participate in afforestation activities." (Operations of NAFP)
- Extension to schools through establishment of school nurseries: labour carried out by school community with project-provided naike
- Additional need felt for well structured programmes to reach adult population - "developing suitable programmes is a specialised activity and requires skills the project does not have." (Operations of the NAFP)
- Valuable conservation education and motivation activity performed by Chautara District Forest Controllers

Project Profile 16 (KHARDEP)

KOSI HILLS AREA RURAL DEVELOPMENT PROJECT, NEPAL

Sponsors: HMG/N-ODA

INTRODUCTION

The Kosi Hill Area Rural Development Programme began in 1979 in the Kosi Hill area of Eastern Nepal, funded by ODA (UK) and HMG/N. Its objective is to improve the standard of living of the population of the region in a self-sustaining manner by increasing agricultural production and alternative sources of income, and to strengthen local services and build up local institutions in order to help HMG/N promote balanced economic and social development in the region and to gain maximum benefit from the completion of the Dharan-Dhankuta road.

The programme has three types of activity:

1. Integrated agricultural development: increasing agricultural production with improved seeds, fertiliser and management techniques; improving livestock management and production with improved breeds, fodder schemes and pasture development and veterinary care; introduction of cash crops, vegetables, grain legumes, medicinal herbs and fruit; forestry development with nurseries, fuelwood and fodder tree schemes; promotion of cottage industry - weaving etc.

2. Regional programmes: developing communications with road and trail construction and repair; provision of integrated health care services with construction of health posts and training Village Health Workers; education programme, establishing Agricultural Technical School and Education Resource Centre, improving school resources, adult literacy programme; promotion of women's affairs with establishment of Women's Affairs Training Centre and related field programmes.

3. Independent projects: irrigation schemes to increase cultivable land; water supplies and sanitation, including drinking water schemes and promotion of pit latrines.

Project Summary:

Duration	:	1977 - 84
Area	:	Kosi Zone, Eastern Nepal
Cost	:	6.75 mill.
Donor	:	ODA
Implementing Agency	:	Ministry of Home Panchayat, HMG/N

1. FORMS OF PEOPLE'S PARTICIPATION IN THE PROJECT

Planning:

- Socio-economic study of Kosi area conducted by random sample of District
- Informal discussions conducted at national level
- Planning of Phase 1 through District Panchayats created resentment in Ministry of Panchayat and Local Development which forbade direct discussion at local level. But increased size of project in Phase 2 necessitated increased incorporation of District Panchayat and consultations at village level in planning.

  Note:
  Lack of contact with local population in early stages felt to have caused lack of success of projects.
- Project experts in advisory role only - no authority except final sanction for withdrawing funds

Decision-making, Consultation and Negotiation:

- Formal consultations with national-level government officials through Programme Area Development Executive Committee (PADEC)
- District Planning Workshops held annually
- Until 1984, consultations with District level officials only - none with village level leaders

- From 1985, introduction of Panchayat Forestry Committees to involve local representatives (based on CFDP experience) is made a condition of project financing. PFCs to be set up by village panchayats according to their own political system, by passing District Panchayat

- No public meetings held; now felt they were necessary for communication of project activities to local people, to control "leakage of funds"

- New scheme planned to by-pass District Panchayat: creation of Specialist Units, including selected representatives of target groups, to identify projects and discuss details with target population; District Panchayat involved only in discussions to identify target area
  Note:
  By-passing of MPLD and District Panchayat is felt to be essential for success of a scheme

Implementation/Installation:

- Projects conducted on state, group and individual resources

- Labour fully paid in projects on govt., resources (e.g. road construction); 5 percent cash and 20 percent labour contribution required for projects on group and private land
  Note:
  Arrangement not very successful due to inequitable distribution of work load and benefits by local people, leading to low standard of work

- Pradhan Panchas expected to supervise some projects (irrigation and drinking water) voluntarily; however, lack of payment caused limited success of this arrangement

Ongoing Management:

- Maintenance labour provided voluntarily on group and individual resources

- Maintenance materials mostly provided by project

- Operational management conducted by Pradhan Panchas and government officers, with project staff in advisory role

- Enforcement by locally employed Watchmen and voluntarily through communication and, recently, through new Forestry Committees

2. INCENTIVES USED TO SUPPORT WATERSHED MANAGEMENT ACTVITIES

Individual Resources:

- Materials provided for land use changes: irrigation and drainage channels, seedlings for tree planting, seed for changes in cropping systems

- Grass cutting rights on closed land

- Experimental introduction of energy alternatives-chulhos and bio-gas plants - not continued due to poor maintenance

- Livestock improvement: distribution of government-owned animals; sale of improved breeds; loans provided for purchase of livestock, livestock housing and drugs

- Technical assistance for construction of stalls for stall-feeding

- Subsidised veterinary services

- 12 Agricultural Services Centres established

Group Resources:

- Running costs, labour costs and seeds provided for plantations

- Grass cutting rights on closed land

- All materials paid for irrigation schemes

State Resources:

- Trail and road construction entirely project-financed, implemented by local contractors and fully-paid local workers
  Note:
  When no individual benefit seen, as in case of major trails, local people unwilling to give voluntary labour

- Compensation paid for loss of private property due to road construction

3. ACTIVITIES UNDERTAKEN TO SUPPORT PARTICIPATION

Policy Measures:

- Surveys conducted to establish land tenure rights

- Initiation of process of handing over of PPF and PF to local communities

- Marketing studies conducted on local products (dairy, medicinal herbs, hides etc.) to develop marketing schemes

- Establishment and support of cottage industry (weaving, bamboo products etc.)

Research, Monitoring and Evaluation:

- Project conducted farmers' field and forestry trials; labour input studies

- Khardep Impact Studies conducted twice a year: visits to 230 households in area to assess impact of project and existing needs

- Occasional case studies conducted in areas with Agricultural Services Centres

- Constant field visits by project staff

Training:

- Staff: JT and JTA in-service training courses; Agricultural, Livestock and Forestry training at Pakribas Agricultural Centre; Training Award Scheme to UK

- Paraprofessional: training of Livestock Assistants, Animal Health workers and teachers

- Leader Farmer training courses in agriculture and forestry

- Farmers' tours in and outside project area

Communication:

- Media: slide shows, audio-visuals, posters, informative literature

- Face-to-face extension major form of communication

- Traditional local leaders encouraged as demonstrators of new schemes - emphasis on "looking over the fence" method of extension
  Note:
  Demonstration of new methods by leader farmers proved to be the most effective method of communication.

- Use of ex-Gorkha soldiers as support staff
  Note:
  Could be used more as community leaders and intermediaries but for resentment of government officials.

- Village Panchayat extension meetings held with farmers' representatives from each ward

- Local MPs are taking an increasing interest in project activities

AGA KHAN RURAL SUPPORT PROGRAMME, PAKISTAN

Sponsor: Aga Khan Foundation

INTRODUCTION

The Aga Khan Rural Support Programme was initiated in Gilgit District of the Northern Areas of Pakistan in November 1982 to organise small farmer development in the region. The programme has now been expanded to include Chitral and parts of Baltistan Districts as well. The scanty rainfall (50 - 150 mm annually) leads to sparse vegetation and high altitude desert conditions. In this high altitude arid zone, availability of water is the key to survival. Careful management of water resources enables the utilisation of the economic potential of the area which consists largely of temperate fruits and livestock.

The strategy used by AKRSP is to establish Village Organisations at the local level which are then assisted in the formulation and implementation of development schemes.

Major components of the current programme are:

1. Productive Physical Infrastructure (PPI)
2. Village Organisation Savings Scheme
3. Prevention of Losses
4. Marketing
5. Extension, Training and Supplies

Land development including afforestation is an important result of the PPI schemes and is the part which related most directly to watershed management. The role of Village Organisations in promoting self-reliance is probably most relevant for the purposes of this study.

Project Summary:

Area	:	Chitral, Gilgit and Baltistan Districts
Duration	:	1982 - ongoing
Cost	:	1983-5: average Rs. 31 million per annum
Donor	:	Aga Khan Foundation
Implementing Agency	:	AKRSP as a private foundation

1. FORMS OF PEOPLE'S PARTICIPATION IN THE PROJECT

Planning:

- Wheat, pasture and livestock surveys conducted at regional level; diagnostic surveys at village level
- Informal discussions conducted with Village Organisations (VOs) and representatives (largely male) of all households

Decision-making, Consultation and Negotiation:

- Consultative dialogues - 1st, 2nd, 3rd dialogues - with villagers to identify, develop and approve schemes
- Programme acts as intermediary between villages and government, credit institutions etc.
- Formal public meetings held at regional level - Managers' Conferences - for consultations and extension
- Weekly meetings held at village level for internal village organisation
- Councils established at regional level for religious and ethnic special interest groups
- Women's Organisations established at village level
- Use of political processes at regional level: District Council meetings, Northern Area Council meetings; at village level emphasis placed on collectivity of villagers rather than elected representatives alone
- In Baltistan District, AKRSP was invited to introduce its programme by the District Council; unit of planning is Union Council rather than village

Implementation/Installation:

- Subsidised labour on group resources (approximately two-thirds normal wage paid to VOs)
- Group and private land used
- Use of local paraprofessionals on group resources (paid) and private resources (voluntary)
  Note:
  Programme policy of gradually replacing externally recruited personnel, including professionals, by those originating from the area

Ongoing Management:

- Maintenance labour, materials, operational management and enforcement by VOs
- Enforcement monitored by AKRSP - sanctions (cut-off of further loans, training and assistance) for non-compliance

2. INCENTIVES USED TO SUPPORT WATERSHED MANAGEMENT ACTIVITIES

Individual/Household Resources:

- Irrigation/drainage channels: project subsidises labour costs and provides tools, equipment and technical assistance through the PPI scheme
- Land Development Loans provided for pasture, crops and tree plantation
- Tree planting, orchards and agroforestry: project provides tools and equipment, free saplings and technical assistance
- Energy alternatives at experimental stage, e.g. solar fruit driers, sulphur fumigation for fruit, solar cookers
- Experimental introduction of artificial insemination in two villages
- Experimentation with improved varieties of fodder crops

Group Resources:

- Project support for community organisation for irrigation and tree planting activities
- Training programme for forest management planned
- Land Development Loans for plantations, buying saplings
- Walls around pastures in some villages
- Embankments to reduce erosion as PPI
- Kuhls and storage reservoirs as PPI. Experimentation with drip and lift irrigation

State Resources:

- Construction of roads as PPI with same incentive scheme

3. ACTIVITIES UNDERTAKEN TO SUPPORT PARTICIPATION

Policy Measures:

- Loans arranged for land development and second generation PPI's using VO savings as collateral
- Provision of loans etc., by Marketing Division
- Off-farm employment support in PPIs and as village paraprofessionals

Research, Monitoring and Evaluation:

- On-farm trials conducted on wheat, vegetables, fodder, chickpeas
- Monitoring and evaluation surveys conducted
- Case studies conducted
- Ongoing evaluation through field visits and VO's diaries
- Meetings of project staff with VOs, average every two months
- Monthly Managers' Conference and sub-engineers' reports
- Impact Evaluation: case studies, baseline surveys, engineering re-surveys

Training:

- Staff: in-service training, occasional workshops, selected overseas trips

- Paraprofessionals trained in poultry, veterinary care, plant care, livestock management, administration (book and record keeping)

- Former provision of key farmer training, now abandoned (not cost effective because of fortnightly frequency)

- Leader study tours planned

Communication:

- Media: in Gilgit, video, flip-charts, slides; in villages, leaflets, video

- Face-to-face extension is main form of communication

- Use of local groups - Ismaili group, women, political representatives

PAK/80/009 INTEGRATED RURAL DEVELOPMENT PROJECT, PAKISTAN

Sponsors: Govt. of Pakistan/UNDP/FAO

INTRODUCTION

The Integrated Rural Development Programme of Pakistan for the Northern Areas is being implemented in collaboration with FAO and UNDP funding for a three-year period. The project is being implemented in 22 villages of the Hunza, Ishkoman and Yasin valleys of Gilgit District. The overall objectives of the project are to improve productivity and living standards among rural people and increase capability for self-reliant village and farm development. Due to the area's remote location, base research data was not available (either agricultural or socio-economic). The initial part of the project was therefore conceived as a research phase.

The immediate objectives of the project were to:

1. Introduce rapidly a research base for agricultural and socio-economic development
2. Attempt improved production methods and practices in agriculture to secure immediate production advances
3. Introduce improved methods of minor irrigation and related works
4. Improve income earning opportunities of farm women through training and extension

Acknowledging the finely balanced farming system both in terms of relatively high productivity and excellent conservation principles, the project aimed at improving productivity and economies with minimal changes to the society, agriculture and the ecological balances.

Project Summary:

Area	:	Gilgit District
Duration	:	1982 - 85
Cost	:	- -
Donor	:	UNDP and FAO
Implementing Agency	:	Govt. of Pakistan/FAO

1. FORMS OF PEOPLE'S PARTICIPATION IN THE PROJECT

Planning:

- Baseline and agronomic surveys conducted at village level: studies of 22 villages
- Informal discussions at village level during village visits for establishment of Village Production Groups (VPGs); some programmes emerged out of VPG discussions

Decision-making, Consultation and Negotiation:

- Formal consultations at village level with Union Council members and village headmen, (numbardars)
- Informal consultations at village level with local leaders
- Formal public meetings of VPGs
- Informal gatherings later in project
- Women's Vocational and Extension Programme at village level
- Union Councils mobilised at village level

Implementation/Installation:

- Voluntary labour on private land
- Use of private land
- Paraprofessionals used for veterinary and livestock activities

Ongoing Management:

- Materials and tools (drills, explosives, etc.) supplied by project for maintenance of irrigation channels

2. INCENTIVES USED TO SUPPORT WATERSHED MANAGEMENT ACTIVITIES

Individual/Household Resources:

- Materials provided for irrigation/drainage channels
- Fruit tree saplings provided at government rates from government nurseries. Exotic species and improved root stock provided for nursery improvement
- Seed, saplings and technical advice provided for walled gardens; land closure encouraged through support for walled gardens
- Fodder cultivation encouraged through demonstration of vetch, rye, lucerne and other possible winter crops
- Alternate crop rotation cycles introduced in combination with high-yielding grains such as triticale; further demonstration and extension needed
- Improved water mills provided on demonstration basis: Metal bearings and Rs.200 per mill improved, paid by project

Group Resources:

- Materials for irrigation/water harvesting supplied by project
- Demonstration plots on public and private lands

State Resources:

- Trial plots established on government land

3. ACTIVITIES UNDERTAKEN TO SUPPORT PARTICIPATION

Policy Measures:

- The establishment of Union Councils, made possible through the extension of the Local Government Act to the Northern Areas, has provided a forum through which villagers can be approached and support mobilised at local level
- Village Production Groups (VPGs) organised with units larger than villages
- Specialised production groups for (a) seed potato production; and (b) vegetable seed production organised; the Seed Potato Association involves the whole of Gojal

Research, Monitoring and Evaluation:

- On-farm trials conducted with fruit trees, fodder, vegetables, wheat and maize
- Community resource trials conducted on government land and government nurseries
- Follow-up surveys conducted but monitoring and evaluation more on ad-hoc individual basis
- Regular field visits by project staff
- Evaluation conducted during meetings of VPGs, Union Councils and through personal contact with individuals

Training:

- In-service training of staff
- Paraprofessionals trained in veterinary work, poultry, weaving, and plant protection
- Key farmer training, especially in seed potato programme, vegetable seeds and fresh vegetable growers
- Study tours conducted for farmers and field assistants
- Training at farmers' field days

Communication:

- Media: pamphlets, hand-outs, and a few radio programmes
- Face-to-face extension with individual farmers - most important
- Demonstration at farmers' field days
- Use of individual local intermediaries (numbardars) and local influential people
- Use of local women's groups
- Use of political representatives in Union Councils

Anis Ahmad Dani is an anthropologist currently working as Social Scientist with the Mountain Social and Economic Division of ICIMOD. He obtained Master's Degrees in philosophy and anthropology before undertaking doctoral studies in anthropology at the University of Pennsylvania. He is particularly interested in the anthropology of development and has conducted extensive individual and project related fieldwork and research in Pakistan.

J. Gabriel Campbell, an anthropologist working as Resident Associate at ICIMOD, obtained his Ph.D. from Columbia University, and is presently associated with the Forestry Department, University of California at Berkeley. He has recently completed a four-year assignment as Socio-Economist on the HMG/UNDP/FAO Community Forestry Project in Nepal and continues to serve as a consultant to the World Bank and FAO in Nepal, India and Bhutan.

Founding of ICIMOD

The fundamental motivation for founding of this first International Centre in the field of mountain area development was widespread recognition of the alarming environmental degradation of mountain habitats, and consequent increasing impoverishment of mountain communities. A coordinated and systematic effort on an international scale was deemed essential to design and implement more effective development responses in each of the countries concerned.

The establishment of the Centre is based upon an agreement between His Majesty's Government of Nepal and the United Nations Educational, Scientific and Cultural Organisation (UNESCO) signed in 1981. The Centre was inaugurated by the Prime Minister of Nepal in December 1983, and began its professional activities in September 1984.

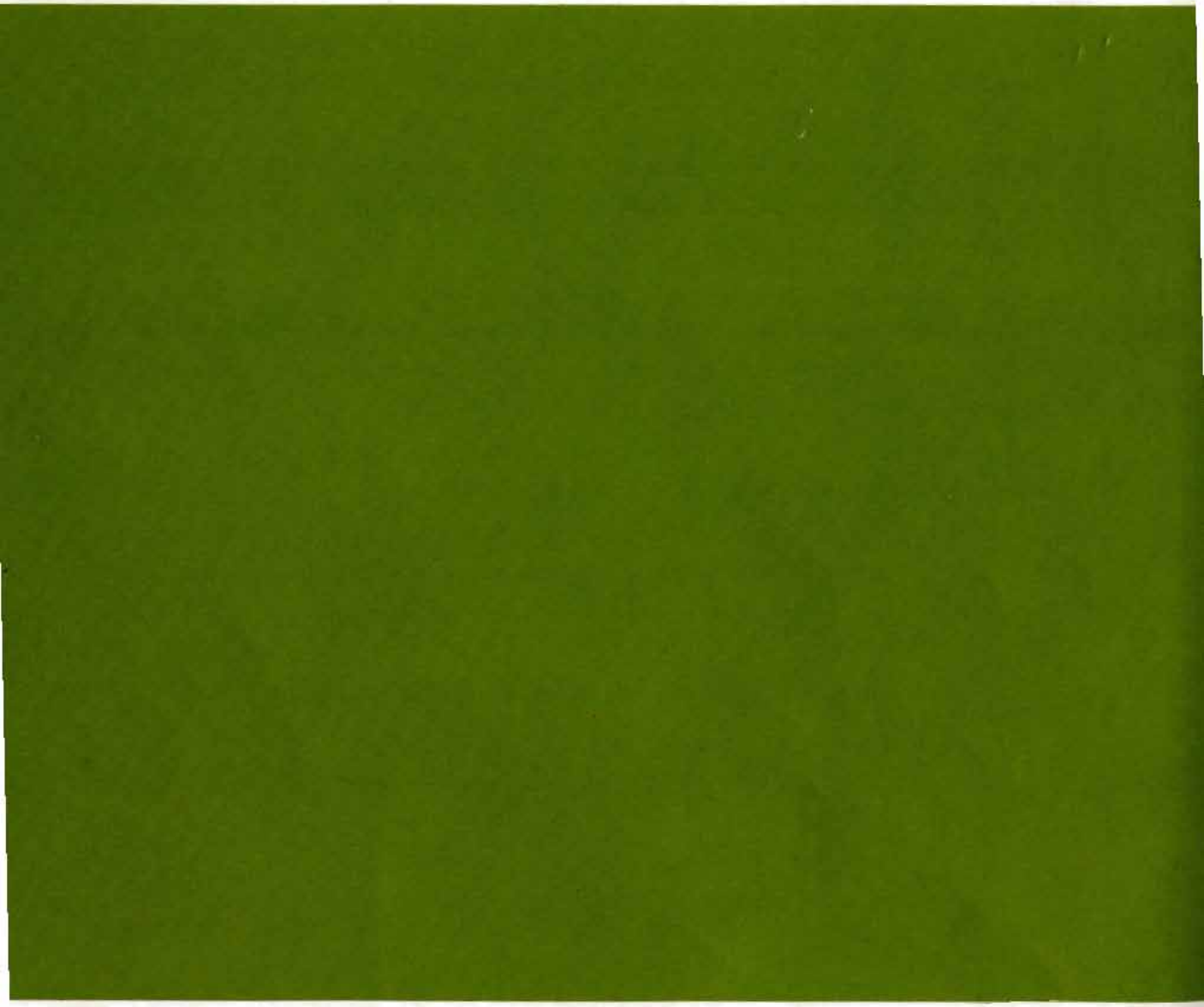
The Centre, located in Kathmandu, the capital of the Kingdom of Nepal, enjoys the status of an autonomous international organisation.

Participating Countries of the Hindu Kush-Himalaya Region

- Afghanistan
- Bangladesh
- Bhutan
- Burma
- China
- India
- Nepal
- Pakistan

Director : Dr. K.C. Rosser

Deputy Director : Dr. R.P.Yadav



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