

4 The Basis and Rationale for the Introduction of Joint Forest Management (JFM) in Uttarakhand

4.1 The Cultural Basis and Advantages of Introducing JFM

The rich cultural heritage of Uttarakhand provides perhaps the strongest basis for the introduction of JFM in this region. This introduction will actually be a step towards reviving the practice, once widely prevalent in this region, of community management of natural resources. The strong cultural values of the people of Uttarakhand can be described in terms of their strong sense of tradition, closely knit social structures, capacity for hard work, legacy of mutual trust and faith, lack of orthodoxy, and celebration of religious festivals together in a participatory way. Most people in Uttarakhand are highly religious and attached to nature, as shown in many rituals like daily tree and sun worship. Many villages have their own *gram-devata* (village god) and *bhumi-devata* (land deity). And many folk songs sing the praise of the forest as one of the almighty's manifestations that provides good health to all people. In short, the cultural ethos puts a high value on nature and its creations, especially trees.

Another striking tradition is that of settling disputes through the mediation of the people in *panchayats*. People only resort to the courts or the police in extreme cases. Harmony and closeness is thus second nature in hill communities. Women, who form the backbone of Uttarakhand society, always go in groups to collect fuelwood, fodder, and water, singing folk songs to while away fatigue and boredom. Not only do people carry out various cultural operations together, they also

barter labour through an *alta-palta* system. Thus the social and cultural bonds and deep association with forests provide a good basis for the introduction of JFM.

For all practical purposes, the attitude of the people towards the management of Reserve Forest depends on how close to the forest they live. As a rule, those who live near the forest dislike restraints and regulations and often do not see any justification for them, and those who live far away are not interested. Local people are generally intolerant of purely protective regulations. This is especially true in the case of degraded forests, where forest management is limited to stopping people from using the forest, the reasons for the restrictions are generally not well understood, and the forest guard is little more than a forest policeman. Even so, there are many areas in Uttarakhand, especially in remote areas, where people have cooperated well with the Forest Department for a fairly long time, and where department plantations and other forestry work have been successful. A study has reported that a large number of villages in Tehri Garhwal district (Pratap Nagar block) voluntarily protect chir forest, pine and *deodar* mixed forest, and other forest areas and patches of *Bauhinia retusa*. In Motana village, a women's group (*mahila mandal*) is protecting three blocks of Civil Soyam lands where only shrubs grow. These are harvested by the women for fuelwood in a three-year rotational cycle. Tables 4.1 to 4.3 show some details of these voluntary protection activities.

Table 4.1: Number of Villages Voluntarily Protecting Forests

Area	Total No. of Villages	Villages Protecting Forests		Area Protected (ha)	Total Area (ha)	Average Area Per Village (ha)
		No.	(%)			
Balganga range	80	26	33	1021	1131	43.5
Dharkot range	35	6	17	392	392	65
Forest beat Dhung	25	10	40	285	349	34.9
Total	140	42	30	1698	1872	44.5

Table 4.2: Species Being Voluntarily Protected by the Villagers

Area	No. of villages	Number of Villages Protecting a Particular Species			
		Banj (oak)	Chir	Chir/oak mix	Kukat (including <i>baubhinia retusa</i>)
Balganga range	26	3	4	19	NA
Dharkot range	6	4	NA	NA	2
Forest beat Dhung	10	8	NA	NA	2
Total	42	15	4	19	4

Table 4.3: Duration of Protection by Villagers

Area	Total No. of Villages	Number of Villages by Duration of Protection				
		50 Years	30 Years	20 Years	10 Years	Less than 10 Years
Balganga range	26	7	10	9	NA	NA
Dharkot range	6	1	NA	NA	5	NA
Dhung beat	10	NA	NA	7	NA	3
	42	8	10	16	5	3

4.1.1 Consolidation of Areas

An area of approximately 8,014 sq.km. of the 34,247 sq.km. of forest in Uttarakhand (23.4%), is Civil Forest, i.e., a common resource. However, these areas suffer from a lack of proper care and management. They need to be brought under the control of the Forest Department or under a community management system. The latter is preferable, since these areas were traditionally under community control. The Civil Forest areas are largely devoid of forest cover, however, and reforestation efforts have the highest priority. Good rootstocks are available in many civil areas, especially in the oak region, and offer the possibility of rehabilitation simply through protection. It should be easy to rehabilitate the Civil Forest areas under a Joint Forest Management system.

4.1.2 Availability of Fuel and Fodder

The success of JFM is likely to depend largely on how long it takes for the participating community to obtain a return. Fodder and fuel are the top priorities for local people. Thus forests can only be saved if the production of grass and fodder is increased several-fold to meet the demands of the increasing population. Fuel and fodder are already scarce commodities, thus JFM should be welcomed by village communities since people will have a stake in the programme.

4.1.3 Direct Financial Gains

In the long run, the extent of involvement of the public in the management of forests depends on how effectively they obtain direct financial gains in the form of cash or employment. The JFM rules promulgated recently in UP ensure a

direct financial gain for the stakeholders. This provision was missing in the *Van Panchayat* Rules. Under JFM, the capacity of local young people will also be enhanced. They will have the possibility of employment both during the project period and later.

4.1.4 Regulation of Biotic Interference

Forests suffer most as a result of the ever increasing biotic pressures that result from the population explosion of cattle and humans. This problem could not be controlled under regulatory forestry where the stakeholders were not involved. If JFM is adopted, the village community will take over the responsibility for protection of the forests and will try to reduce the number of unproductive cattle to ensure a sustained supply of fodder. This objective can be achieved by educating people and arousing awareness of the need to conserve the forests to ensure conservation of soil and water. This, complemented with a family planning programme to tackle the problems of the increasing human population, should lead to a reduction in the biotic pressures on forests.

4.1.5 Harnessing the Potential of Degraded Areas

Both Civil Forest areas and Reserve Forest areas lying close to villages have become degraded as a result of over use. Afforestation of these areas would require large amounts of money, whereas natural regeneration through voluntary community protection would cost much less. Not only this, the flow of NTFPs from naturally regenerated forest could generate more income for local people. The potential for growing medicinal herbs is also very high in these areas. Women, who are the real stakeholders of the forest, can be involved effectively in these activities. This would not only help to improve their financial status, it would also help regeneration of the degraded areas.

4.1.6 Checking Encroachment and Other Illegal Activities

The Forest Department alone cannot save invaluable forest from degradation, not least

because the Department cannot continue to increase its staff to match the ever-growing pressure of encroachment and illegal activities by unscrupulous people. If the local communities are involved as custodians of the common resource, these problems can be tackled more effectively. This is one of the major objectives for the introduction of JFM in Uttarakhand.

4.1.7 Capacity Building

Seventy years of community forestry in Uttarakhand have shown that capacity building, in the form of imparting knowledge on rules and regulations, rights and privileges, and technical aspects of forestry, is a necessity for the successful joint management of common resources like water, land, and forest. Joint Forest Management will include large-scale capacity building of all the stakeholders and effective monitoring of progress, and will thus be a departure from the *van panchayat* system.

4.1.8 Changing Attitudes and Liaising

Attitudinal changes of both government personnel and communities are necessary for the success of conservation of natural resources like forest. Joint Forest Management is a part of the ambitious UP Forestry Project, which envisages a total change in the process, but JFM will be introduced initially in a cautious manner. This will be a step towards bringing about an attitudinal change at all levels of the administration. Attempts will also be made to integrate forest management with other developmental activities being carried out at district and *panchayat* levels so that the thinking of the local people, who now regard forest conservation as a major hurdle against local development, can be changed so that they become partners in the conservation of forests.

4.1.9 Protection of Plantations

Almost all the forest divisions in Uttarakhand have been establishing plantations every year. These plantations are protected by government hired watchers for the first three years of reforestation work, but plantations require at least 10 to 15 years of protection. Introduction of

JFM will help automatically to provide voluntary protection of the plantations carried out by the department. In return, communities will be able to take out grass and extra growth in the plantations. Plantations in close proximity to villages will benefit most from this arrangement.

4.1.10 Policy Directives

The new Forest Policy and the Government of India Guidelines (June 1990) don't distinguish between fringe or interior areas. All forest land is supposed to be brought under the fold of the changed objectives of environmental benefits, biodiversity conservation, meeting local peoples' demands, and involving people in programmes of protection, conservation, and management of forests. Introduction of JFM in selected areas will be an initial step in implementing the policy directives and will also serve to show how this new approach helps ameliorate the bad state of forests.

4.1.11 Environmental Reasons

Agriculture in Uttarakhand is not very productive, even though it is a basic way of life and an age-old practice. Extension of agriculture to marginal lands with faulty land use practices can cause negative environmental impacts. Under JFM, large-scale capacity building will be initiated and all these problems will be addressed. Soil and water conservation through tree farming on suitable lands will be encouraged. This will also help to reduce the pressure on existing forests.

4.1.12 Advantages Compared to Van Panchayats

The advantages of JFM over *van panchayats* include the following.

- Under JFM, 250 to 300 ha areas will be taken for community management, whereas the area of most *van panchayats* is less than 50 ha.
- Villagers will prepare their own micro-plans with the help of the Spearhead Team, execute and monitor the project, and spend

the money allocated for forestry development.

- There will be direct monetary benefits for the stakeholders.
- There will be fewer legal problems.
- Non forestry activities will be taken up on a priority basis in JFM areas and will be undertaken in conjunction with other district development plans.

4.2 The Uttar Pradesh State Forestry Action Programme

A State Forestry Action Programme (SFAP), with greater emphasis on participatory forest management, was put forward in Uttar Pradesh in 1995. The broad objectives of the programme are, in accordance with the National Forest Policy of 1988, to ensure environmental stability and the maintenance of ecological balance, to ensure conservation of the national biological heritage, to increase the sustainability of the forest and tree cover on forest and farm lands, to increase the productivity of forests, and to ensure the participation of local people in the management of forests.

The broad objectives of this plan would involve a change in the departmental working approach as follows.

- A change in the role of the UP Forest Department (UPFD) from a predominantly regulatory approach to one in which communities are treated as equal partners in the management of forest resources. Stakeholders will be enabled to make decisions and to manage and protect forests, thus ensuring the appropriateness and the effectiveness of the micro-plan, whilst the UPFD remains the custodian of national interests.
- A change in management systems to one that is client-oriented and adaptable, based on decentralisation of decision-making, and improved planning, monitoring, and evaluation,.
- Human resource development linked to role definition, skill-gap analysis, and appropriate manpower planning and management.

Even though the project area is intended to cover the entire state of Uttar Pradesh, hill areas will benefit most because they contain most of the forests. The project is intended to be implemented over a four-year period. It has four main components.

- Changing the approach of the UPFD, improving manpower planning, changing process and skill-gap analysis. This would be introduced together with competency-based training, improved planning, monitoring and evaluation procedures, and the necessary management information systems.
- The project is intended to finance a variety of interventions for forest resource development, including management of intact and degraded natural forests, farm forests, and community forests. Priority will be given to community participation in natural forest management through Joint Forest Management, although certain less degraded areas would continue to be managed by the UPFD. Farm forestry will be a purely private sector matter. The project will also support urban forestry activities and programmes of silvopasture development.
- Continuation of selected long-term species' trials and observation plots will be promoted, together with provision of the necessary equipment and training to develop linkages with a research database. A planting material improvement programme will be implemented to ensure better quality seeds and seedlings. A Pasture Development Unit and demonstration plots and fodder seed production plots will be established. A fire protection strategy will be developed for the state.
- Under this project, long-term strategic planning will be undertaken for biodiversity conservation in the state, both within and outside Protected Areas (PAs). Improved management will be introduced in 15 priority PAs linked to eco-development programmes to provide alternative sources of incomes for local communities. Associated research and public awareness programmes will also be implemented.

4.3 The World Bank Project

The World Bank assisted Himalayan Watershed Management Project was started in 1983-84 with an area development approach encompassing all land-based activities. The project suffered from a basic weakness in the early stages resulting from the lack of involvement of local people at the time of planning and implementation. This weakness was avoided in the follow-up Doon Valley Project, which was started in 1993.

The experience gained during this project suggested that the ideal model for JFM should integrate all land-based activities like forestry, soil conservation, minor irrigation, horticulture, agriculture, animal husbandry, use of non-conventional energy, and skill development to supplement local incomes and involve local people using a participatory rural appraisal (PRA) approach.

As a part of the above project the World Bank has now planned the 'UP Forestry Project', with an intended date for start of implementation in 1999. JFM is a major component of the five-year project, and forms the basis of the approach to forestry development and conservation. The approach is described in more detail in the following sections.

4.3.1 The Main Features of the World Bank Guidelines for JFM

The World Bank funded project will operate in the central Himalayas (Uttarakhand), the Terai, and parts of the Vindhyas region. Project finance for forest development and management activities, such as fencing, soil working, planting, and protection is linked with activities to promote the sustainable use of forest resources and to meet other community needs. The programme is based on site-specific village micro-plans, developed through a participatory process, leading to the formation of a Village Forest Committee (VFC) or the strengthening of existing forest *van panchayats*. The micro-plan forms the basis of formal agreements that set out the rights and obligations of both the local community

and the UPFD. The micro-plans cover Reserve Forests, Civil Forests, Soyam lands, and *Van Panchayat* Forests in the hills. The benefit sharing arrangements differ for the different types of land.

In order to ensure sustainability, local ownership, and responsibility, communities are asked to decide the level of their contribution to the scheme. Details of appropriate mechanisms for community contributions are agreed at the appraisal stage. Communities that opt to contribute labour for forest development receive an equivalent cash payment deposited in a Village Development Fund, which is established by the VFC; for undertaking non-forestry activities specified in the micro-plan.

The success of JFM will largely depend on the availability of trained staff who have a commitment to the participatory process, and for this reason orientation workshops and other measures to identify and develop appropriate staff competencies form an important part of the human resource development component of the project.

The phasing of project-financed activities is explicitly linked to the availability of trained staff. It is estimated that a total of about 1,160 communities (744 in the hills) will be involved over the four-year project period, managing and protecting about 210,000 ha of forest land for which detailed village micro-plans will have been completed.

The project is also financing the development of approximately 7,000 ha of forest on community lands in the plains, to be managed by 350 communities. The same principles of micro-planning with community participation will be applied. This will represent a significant departure from the community plantations developed under previous social forestry programmes. Similarly, strip plantations financed under the project will be based on agreements reached with communities, and the UPFD will propose benefit-sharing management appropriate to the nature of these plantations.

JFM Implementation plans will be undertaken through the Territorial Wing of the UPFD. The CF will have overall responsibility for the programme in each Circle. At the Divisional level, the DFO will take a lead role in promoting a participatory approach by building divisional teams across the hierarchical structure of the UPFD. He will also ensure co-ordination with other government agencies through the District Project Implementation Committee.

The Spearhead Team will prepare village micro-plans, and will also provide practical on-the-job training on the principles and practice of participatory village planning and programme implementation to rangers, foresters, and forest guards within the Division during the preparation of micro-plans. Once trained, these staff will play an advisory role to communities, with a major responsibility for timely and appropriate implementation of the agreed plan. At the community level, responsibility will lie with the Village Forest Protection Committee (in the hills the name *van panchayat* has been retained), which includes representatives from every household in the village. The nature of micro-plans, their financial implication, management of funds, and the phasing of the programme will be looked after by the Project Unit (PU) and the CF Project Planning Committee will monitor micro-plans and expenditures to ensure that the concerns of disadvantaged people are adequately addressed.

As a key component in project implementation, the project will support the operation of Spearhead Teams and related FD staff in all the steps in participatory planning leading to the implementation of micro-plans. The primary function of the Spearhead Teams will be to facilitate the preparation of JFM micro-plans. Training of teams will give priority to their facilitating role in order to avoid top-down and supply-driven micro-planning. Spearhead Teams will be formed in each division under the day day-to-day guidance and supervision of the DFO. Each Spearhead Team will consist of an Assistant Conservator of Forests (ACF), a Ranger or Deputy Ranger, a Forester or Forest Guard, and two NGO social motivators. The social

motivators will be recruited under contract with NGOs and one will be a woman. Both will have qualifications, seniority, and rank comparable to an ACF or Ranger. Spearhead Teams will directly support the development of micro-plans, and train and assist the Range Level Micro-planning Teams to support participatory planning within their respective ranges.

The Spearhead Teams will also provide on-the-job training in participatory planning and programme implementation to Rangers, Foresters, and Forest Guards in four Ranges in each Division every year. After initial training, territorial staff in each range will jointly form a Range Level Micro-planning Team (RLMT) headed by a Forest Ranger. The specific responsibilities of Spearhead Teams will be to provide continuous training and guidance to the RLMT; to assist the RLMT in PRA, environmental stakeholder identification, and the identification of forest user groups for JFM; and to assist forest user groups and RLMT in micro-planning and completion of agreements between *van panchayats* or VFCs and the FD. As resident territorial staff, the RLMT will play a continuing and longer term advisory role to VFCs and *van panchayats* in the timely and appropriate implementation of the micro-plans. The technical advisory efforts of the range-level staff will be supplemented by NGO support for VFC and *van panchayat* capacity building. The capacity and quality of performance of Spearhead Teams, and in particular the RLMT, will be a priority subject for the bi-annual JFM review workshops.

The project will assist the FD in financing forest development and management activities based on site-specific micro-plans as agreed between the FD and VFCs or *van panchayats*. According to the JFM rules, JFM will only be implemented on degraded forest lands. Most activities will be concentrated in the hills, where 50 of the planned 69 Spearhead Teams will be established, and about two thirds of the projected 1,060 micro-plans will be developed.

The number of communities involved and the number of plans prepared will be linked to the

capacity to train staff and Spearhead Teams to implement activities. In order to ensure that the ownership of micro-plans lies with the forest user group, Spearhead Teams will support the micro-planning process in a way that allows adequate time for all members of the forest user groups to be involved and develop their own priorities and plans.

During the preparatory year, Spearhead Teams will be formed in 9 divisions and some will assist forest user groups in finalising micro-plans. The project will start supporting the implementation of these plans by the beginning of project year 1. Fifteen Spearhead Teams will be formed in each of the subsequent project years, to give a total of 69 teams formed during the project period. Each Spearhead Team will prepare one micro-plan in the first year after training. In the second year after training, each Spearhead team will again prepare one micro-plan, while at the same time providing on-the-job training to four RLMTs. In subsequent years, Spearhead Teams will prepare two micro-plans per year while continuing to provide technical support to the RLMTs. In the first year, RLMTs working under the guidance of a Spearhead Team will prepare one micro-plan. In subsequent years, the RLMTs will prepare two micro-plans per year. The first three JFM micro-plans in the hills, and one each from the Terai, plains, and Vindhan regions, will be reviewed by the World Bank prior to their agreement and implementation.

4.3.2 Plan Implementation

Implementation of each 5-year micro-plan will start after signing of the agreement between the VFC or *van panchayat* and the FD. With assistance from the World Bank, the FD will finance site enhancement, protection, and enrichment planting activities. The forest user group will contribute with agreed inputs such as labour, protection, and other materials. The VFCs will prepare annual workplans based on the activities described in the micro-plan and provide details of the necessary budget. The DFO and VFC or *van panchayat* will agree on the annual work plan (and budget) as a basis for the release of funds from the FD.

Monitoring and evaluation of JFM and community forestry will aim at establishing a process of learning that is based on a 'learning-by-doing' strategy. The lessons learned through monitoring will be fed back into project activities, and implementation and regular reviews will also feed back into training and capacity building activities.

Implementation Arrangements

The overall responsibility for the JFM programme development and co-ordination in the Project Unit (PU) will lie with the CF Process Change Group assisted by a Deputy Conservator of Forests (DCF) with specific responsibility for the programme. The JFM Departmental Working Group will have the responsibility for ensuring the consistency of the approach to JFM in various parts of the state. At the central PU level, the CF Planning and Monitoring Unit will monitor micro-plans and expenditure based on inputs from the DFOs.

JFM implementation will be carried out through the Territorial Wing of the FD. The CF will have the overall responsibility for the programme in each Circle. At the divisional level, the Divisional Forest Officer (DFO) will have the following major responsibilities:

- taking a lead role in promoting participatory approaches by building Divisional Spearhead and Range Level Micro-planning Teams;
- prioritising, and initially selecting sites for JFM ;
- approving JFM micro-plans in consultation with the Divisional Level Committee for JFM (and according to the JFM rules);
- releasing funds for VFCs and *van panchayats* to implement micro-plans; and
- playing a key role in progress monitoring of the JFM programme and in the bi-annual review workshops.

The DFO, with other territorial staff, will be responsible for developing community-based management arrangements for existing community forests on *gram sabha* land. The

principles of participatory planning and formation of VFCs will also be applied here.

Funding Arrangements

Funds for JFM will be allocated by the project to each division by November of each year for the following year's activities. Allocation to the JFM Fund in each division, compared to the total funds for works, will be consistent with the overall divisional strategy. The amount will be based first on the 'spillover' from previous committed work plans, and second on the estimated number of micro-plans to be implemented.

Divisional budgets for JFM and community forestry will be based on the estimated numbers of villages/micro-plans in the division to be included in the programme. It is assumed that, for the purposes of budgetary planning, each village in the hills will have an average of 300 ha of forest land under JFM as a result of the programme. The 300 ha will consist of a site-specific combination of Reserve Forest, Civil Soyam land, *van panchayat* land, and community/*panchayat* land. The forest land available for JFM in villages in the Vindhyan and Terai regions will be less than in the hills.

Each JFM micro-plan will contain a detailed 5-year budget for forest management and development including cost and benefit sharing arrangements.

Approval and funding procedures for micro-plans are laid down in the JFM rules. The micro-plan needs to be approved by the DFO (in consultation with the Spearhead Team and the divisional level JFM committee). The DFO will be responsible (in consultation with the range level staff/RLMT, Spearhead Team, and the Divisional Committee) for the release of funds to the VFCs or *van panchayats* on the basis of an approved micro-plan and detailed annual plans. As a precondition for release of annual instalments, the VFC has to submit annual accounts after verification by the Range Level Committee on the progress of activities already funded.

The DFO will transfer funds directly to a bank account operated by the VFC or *van panchayat*. In the case of the VFC, which is a sub-committee under the *Gram Sabha*, the Pradhan will open a specific bank account or keep a separate account under the *Gram Sabha*'s general account. Expenditure for specific micro-plan activities has to be authorised against the signature of the Pradhan and Secretary of the VFC. In the case of a *van panchayat*, funds will be transferred to the *van panchayat* bank account with expenditures authorised against the signature of the *van panchayat sarpanch* and secretary (*panchayat van vanvid*).

Benefit and Cost Sharing

The purpose of introducing benefit and cost sharing is to ensure sustainability by creating a sense of commitment to forest management and providing a framework within which decisions can be taken based on known costs and expected benefits and to limit total expenditure.

The distribution of benefits among the village community will be done as follows:

- distributed among all members of the forest user group according to criteria laid down in the micro-plan, or
- invested in other village development work. In this case, the activities and budget for village development work will be included in the annual plan and budget prepared by the forest user group according to the JFM rules. One of the capacity-building activities of NGOs will be to support forest user groups in planning and budgeting for such development activities.

The arrangements for cost-sharing will be as follow.

Overall, the total cost of a micro-plan should not exceed Rs 8,000, per ha. This means that during the micro-planning process, agreement must be reached on the relative desirability of bringing areas under protection and/or planting, given the costs and conditions set out below.

- General management, including the development of management arrangements, demarcation of the area, rotational patrolling, and general protection, will not involve any financial costs but, depending on the need and the arrangements agreed, will require time from each household.
- The actual requirements for site enhancement through protection from fire, grazing, and illicit felling using various methods of protection, will vary from village to village and therefore a project wide norm has been determined. The project will pay a fixed sum of Rs. 660 per ha for each year for effective protection for the first 5 years of the micro-plan. The agreement between the FD and the VFC will define the (site-specific) indicator (s) that will be used to determine 'effectiveness' and therefore to release payment. Money will be paid into the Village Development Fund which can be used to fund agreed activities. In the first year, the DFO may approve the release of money in advance as a measure of good faith. Subsequent payments will depend on effective protection. Payments will be limited to five years, thereafter the flow of benefits is expected to ensure the sustainability of the arrangements.
- The need for enrichment planting varies throughout the area. A maximum of Rs. 8,000 per hectare will be granted, this figure based on a rough estimate of the planting requirements for a typical VFC in the hills. The FD, with the support of the IDA, will finance up to 80 per cent of the forest enrichment planting activities planned for the first 5 years of the micro-plan period. In order to ensure local commitment and ownership, and so that micro-plans reflect the goals of user groups, it is expected that the forest user group will provide 20 per cent of the costs of forest enrichment planting. The FD will deposit its share in the Village Development Fund. This money is not transferable to other activities.
- Inflows into the Village Development Fund account will include the contribution to protection costs from the FD, the costs of planting, and the VFC's share of benefits ac-

ording to the agreement. The VFC can use the fund for forestry related fees or fines that are collected as part of their management arrangements. The account will be known as the Village Forest Development Fund (VDFD). Expenditure from the VDF will be to meet the costs of planting, to meet any other management costs, and to distribute individual shares of benefits to members as laid down in the rules. The share of the benefits to be retained for re-investment in forest management will be earmarked within the account or held in a separate, subsidiary account.

- A Forest User Group may decide to invest funds received from the FD for forest protection in other community development activities as presented in the micro-plan's non-forestry activities. In this case, the forest user groups have to undertake the protection activities themselves.

4.3.3 Criteria for the Selection of Villages for the Implementation of JFM

The proposed JFM guidelines (appended to the JFM rules) outline the criteria for selecting sites for JFM activities. The DFO (in consultation with the divisional level JFM Committee) is responsible for the initial selection of sites/villages. The following criteria are applied.

- Step 1: Sufficient degraded forest land (reserve, community or civil-soyam) is available to attract the interest of the community.
- Step 2: The village population has a traditional dependence on forests for their daily needs and general livelihood (i.e., they should be traditional users of forests as opposed to recent entrants extracting forest products for purely commercial purposes).
- Step 3: The village has one or more respected persons who will provide constructive and participatory leadership.
- Step 4: The village is socially homogeneous or, if heterogeneous, does not have conflicts over resources or political rivalry between sub-groups or individual households.

It has a high degree of economic and financial equity.

- Step 5: The village has a history of joint community action (*sramadhan*).
- Step 6: The physical boundary of the village is clearly demarcated and there are no serious conflicts over forests/natural resources with neighbouring villages.

When sites have been chosen, the process of participatory planning and formation of a VFC starts. For the process of identifying forest user groups(s) in a chosen village, and for micro-planning, additional guiding criteria are applied as outlined above under steps 2 and 3 in the Participatory Planning for JFM (Project Support section). Villages (or sub-villages) initially selected may be excluded if the PRA (Step 1) and Stakeholder Identification (Step 2) do not result in the identification of forest user groups willing or able to participate in JFM according to the existing rules/guidelines and criteria for micro-plan preparation.

4.3.4 Criteria for NGO Selection

The criteria for the selection of NGOs to be involved in the project to support Spearhead Teams and eco-development for community forestry, or to be eligible for funding from the project's special NGO fund, are as follow.

- As a part of the legal requirements, the NGO should be registered under relevant State Law.
- The NGO should demonstrate internal stability and have an activity record of at least 3 years from the time of registration.
- The NGO should have at least 2 years experience in forestry and natural resource management or at least 2 years experience in watershed management and related community development activities.
- The NGO should have experience in PRA training and implementation, and in other participatory processes related to planning, implementation, and monitoring (including reporting) of projects.
- The NGO should have experience in collaboration with local authorities,

panchayats, and government departments.

- The NGO should have practical, theoretical, and technical expertise in forestry or forestry related activities.
- The NGO should demonstrate experience in project budgeting and accounting. It should also demonstrate the ability to maintain accounting records regularly and have audited annual statements of income and expenditure.
- For project activities requiring field activities over a larger area, the NGO should have an adequate number of trained field staff who are conversant with the local dialect and customs and have a good knowledge of the socioeconomic and political situation of the area in which they will be operating. The field staff should have at least 2 years of work experience in the organisation, and they should possess skills in communication and rapport with villagers in general, local leaders, and authorities.
- The NGO should not be affiliated to any political party.
- The NGO should be able to document its qualifications and track record based on available documents and ongoing project activities.

4.3.5 Participatory Planning for JFM

The process of participatory planning for JFM involves the following 5-step sequence of activities to be undertaken by Spearhead Teams in consultation with communities.

- Scoping using participatory rural appraisal (PRA)
- Stakeholder identification and social targeting
- Micro-planning using PRA
- Formation of a VFC
- JFM agreement

This generic sequence of activities is the project's first guidance in initiating JFM activities. Each step described in more detail below. The project approach is 'learning by doing' and lessons learned during implementation will be documented through regular review workshops

and monitoring that will feed into the Forest Management Information System. The lessons learned will be incorporated in the recurrent training of Spearhead Teams and their field activities. In addition, a JFM Source Book will be developed as a basis for training courses and field implementation. The Source Book will be completed by the end of the 4-year project period and will subsequently guide the expansion of JFM throughout the state.

Scoping Using Participatory Rural Appraisal

Spearhead Teams will conduct PRA exercises as the first step in understanding the social configuration and natural resources of the village. This will also enable the Spearhead Team to take major decisions on the involvement of the village in the programme. Although PRA is a participatory and joint exercise between the community and the Spearhead Team, it is also meant to be a benchmark for decision-making by the team on how to identify the forest user group that will participate in preparing the micro-plan and sign the agreement with the FD for its implementation. Selection of the forest user group will be based on stakeholder identification and social targeting according to the criteria outlined below. PRA will be used to assess the following.

- The social structure of the village including caste, economic stratification, land tenure groups, occupations, village institutions and leadership
- The functioning and performance of existing *van panchayats*, other village institutions in resource management, problems and complaints, and suggestions for improvements
- The natural resource base in general, including the extent and nature of cultivated lands, water resources, livestock ownership, and forests used by the community
- The forest resources in particular (as part of the environmental assessment), including location and area, categories and condition, and current patterns of use by different user group categories according to criteria like caste and gender
- Expressed problems, needs, and priorities of different groups

Stakeholder Identification and Social Targeting

The PRA exercise should lead to the identification of different interest groups, or stakeholders, within a village. The objective of stakeholder identification is to ensure that the interests of all the people who depend on forests is addressed. Stakeholders will be identified on the basis of some, if not all, of the following criteria: gender, caste, level of poverty, dependence on forests, resource endowment, occupation and residence, and political influence. The problems and priorities of each stakeholder group will be assessed through separate focus group interviews. The Spearhead Team will then try to build consensus in the community on its development priorities for the forests and related natural resources. This may result in the identification of stakeholder groups with different interests and forest use patterns. A consensus on the shared use of forests among these groups may be possible, in which case they will work out a joint micro-plan that reflects their respective interests.

The purpose of social targeting is to identify real forest users who will prepare their own micro-plan, form their own committee, and sign an agreement with the FD on the implementation of the plan. Social targeting will lead to the identification of forest user groups without any conflicting interests that may undermine the cohesion of the group and lead to failure in forest management. Social targeting may therefore result in sub-villages, castes, or occupational groups constituting themselves as independent user groups, each of which will then prepare its own micro-plan and form its own committee. Social targeting may also lead to the exclusion of a part of a village if a particular sub-group is not relevant to the objectives of JFM or community forestry. Social targeting is the most difficult step in participatory planning since it may involve difficult and sensitive choices on the part of the Spearhead Team. Well-conducted PRA and stakeholder identification will, however, make social targeting an easier task. The Spearhead team will apply the following criteria in the identification of forest user groups for JFM.

- Preference will be given to user groups whose access to forest products is restricted by protection. They will have the first claim on benefits.
- Preference will be given to poorer groups whose livelihoods traditionally depend on forest products (i.e., resource-poor and vulnerable groups).
- Priority will be placed on identifying women as a separate user group because of the prevailing gender division of labour in relation to the use of forests.
- An effort will be made to avoid the inclusion of stakeholders and individual households who have an adverse effect on the subsistence-based use pattern of poorer and vulnerable groups and/or on the sustainable management and development of forests.

Social targeting with these criteria will ensure that the poor or assetless and women obtain their share of benefits from JFM. These measures are not intended to turn forest user groups into organisations of the poor or into women's groups, but the principle of representativeness implies that all interest groups should have a stake in forest management for it to be successful and sustainable.

Micro-Planning Using PRA

Village micro-plans for JFM will be prepared with the full participation of all members of forest user groups and even before the formation of the VFC. Once again, PRA will be conducted, but within the more narrow and operational framework of determining the priorities and components of the micro-plan. In the case of *van panchayats*, the Spearhead Team will ensure that all voices are heard, and not only those of the *van panchayat sarpanch* and committee members.

The micro-plan will contain a 5-year forest development and management plan. In those project areas selected for assisted natural regeneration, the JFM micro-plan, once completed, will become an integral part of the detailed site-specific plan for the area. The

project will support the FD in financing the plan for a 4-year period.

The participatory planning process will allow villagers to bring forward all their development priorities. They may decide to prepare a general rural development plan, although the plan will have to contain a component on forestry development and management. Or, they may decide to prepare a plan with an exclusive focus on forestry. The project will only finance forestry related activities. In order to ensure transparency, micro-plans will also describe all details of cost and benefit sharing arrangements. This will encourage accountability on the part of the VFC and *van panchayat* committees vis-a-vis their constituencies, which may include several sub-groups each with a specific stake in one or more components of the micro-plan. Given the regional differences and specific needs of communities, it is not possible to prescribe all activities in a micro-plan. However, in order to meet the overall objectives of the project, and the objectives of the JFM component in particular, the activities to be considered in micro-plans will follow the criteria outlined below. Priority will be given to the following.

- Activities supporting the sustainable development and management of forests that also meet different needs of the villagers
- Activities reducing pressure on and restoring forests (i.e., contributing to generation of biomass like fuelwood and fodder)
- Activities meeting women's needs that support their involvement in forest management
- Activities that will compensate those whose incomes have been reduced by the imposition of forest protection
- Income-generation activities in support of the needs of the principal users of forests affected by protection arrangements

Formation of the Village Forest Committee

The VFC will be formed in accordance with the rules of the UP *Panchayati Raj* Act (Sections 29-6) of 1947 that allows for the constitution of sub-committees of a village *panchayat* (*gram sabha*). The *gram sabha* concerned will delegate

its powers to the VFC in a way that allows for autonomous decision-making, planning, and management of activities and finances. The Spearhead Team will assist the forest user group in the process of electing VFC members representing all the sub-groups who will have an active role in the implementation of the micro-plan and share the benefits.

The composition of the six-member VFC is also spelled out in the JFM rules. The *gram (sabha) pradhan* is the ex-officio chairman of the VFC and the local Forester/Forest Guard is a non-voting member secretary. The functioning of the VFC will be carefully monitored in regular JFM review workshops with regard to its impact on the functioning of the forest user group, commitment to implementation of the micro-plan, and cost/benefit sharing. The project's NGO Fund will finance NGOs to support further capacity building of VFCs during the implementation of the micro-plan (see the paragraph on NGO funding below).

JFM Agreement

The 5-year JFM micro-plan will form the basis of the agreement between the VFC/*van panchayat* and the FD. A draft agreement format prepared by the FD will be used as a model, although the final contents of the agreement will be subject to the outcome of negotiations between the VFC/*van panchayat* and the FD in which all members of the forest user group will participate.

The agreement will specify the detailed budget for all activities (as in the micro-plan), cost and benefit sharing arrangements (as in the micro-plan - a detailed description of benefit sharing arrangements in the micro-plan will ensure transparency), FD financing procedures (to the Village Development Fund and VFC/*van panchayat* bank account), and all other roles and responsibilities of the FD and VFC/*van panchayat* during plan implementation.

4.3.6 Guidelines for JFM Micro-plans

General Guidelines

The general guidelines are as follow.

- The maximum area of a VFC micro-plan will be about 300 ha.
- Two categories of activities within the micro-plan will be funded by the project: rehabilitation through planting, and rehabilitation through protection.
- The average cost of micro-plan implementation will be about Rs. 7,000 per hectare, giving a total cost of micro-plan implementation over 300 ha of about Rs. 2.1 million. The cost is based on the assumption that 15 per cent of the area will be planted and the remainder protected and rehabilitated.
- The VFC will provide protection for the whole area either by employing someone or through shared responsibilities. This is assumed to be at the rate of 1 person per day per 30 ha.
- to pay for any activity in the Village Development Plan.
- In the first year, the DFO can approve the release of the money in advance as a measure of good faith. Payment will be limited to five years, thereafter the expected flow of benefits should ensure the sustainability of the arrangements.

4.3.7 Voices from the Field

The World Bank funded UP Forestry Project envisages public participation at every feasible level. Before launching the project in April 1998, large-scale preparatory workshops, sensitisation seminars, and capacity building workshops were conducted between October 1996 and December 1997 at the regional, district, and village-levels. An NGO called the Centre for Development Studies of the UP Academy of Administration (CDS-UPAA), Nainital, has played a key facilitatory role in conducting the workshops, and in the consolidation and synthesis of the various workshop recommendations. These recommendations will be followed in the course of project implementation. The gist of the main recommendations from the different workshops is given below.

Recommendations of the NGO Workshop

- The existing structure of *van panchayats* should be used for the implementation of JFM.
- In those areas where *van panchayats* do not exist, an attempt should be made to creating them on a massive scale.
- The number of *van panchayat* inspectors should be increased to facilitate the formation of *van panchayats* in Dehradun, Tehri Garhwal, and Uttarkashi districts where there are none at present. These officials will not only gear up the formation of *van panchayats* but will also speed up the process of JFM.
- There is a need to conduct a detailed study of the operational difficulties in the formation of *van panchayats*, especially in view of the *Van Panchayat Niyamawali* (Rules) as they exist today. The study is of extreme importance in view of the requirements for the micro-plan component of JFM.

Rehabilitation through Planting

- Planting will vary in intensity throughout the area, but the average cost for rehabilitation through planting should not exceed Rs 8,000 per hectare.
- Villagers will have to contribute 20 per cent of the cost of planting.
- High quality planting material will be used, the assumed cost is Rs. 6.00 per seedling.
- Funds for planting cannot be spent on other activities.

Rehabilitation through Protection and Management

- For areas to be rehabilitated through protection, the VFC will receive a fixed sum of Rs. 650 per year for every hectare of effective protection during the first 5 years of micro-plan implementation. This will cover all non-planting costs including, for example, the cost of wall construction, fire lines, controlled burning, and demarcation of areas for rotational grazing.
- The micro-plan and the agreement between the FD and the VFC will define the (site-specific) indicator(s) that will be used to determine the effectiveness of protection to release payment.
- Money will be paid into the Village Forest Development Fund (VFDF) and may be used

- The constitution of JFM should be on a similar pattern to that of a *van panchayat* committee, with 6-9 members. However, nominees of the Revenue and Forest Departments and NGOs should be co-opted as additional members with no voting rights. The role of these co-opted members should be purely advisory.
- Implementation of the JFM project component should be on a District Rural Development Association (DRDA) pattern for the purposes of devolution of funds, i.e., the flow of funds for the project should go directly to the JFM body and the range level tier should be used primarily to conducting monitoring and evaluation work.
- While preparing the micro-plan for each JFM command area, emphasis should be given to looking at forests being beyond the means of generating income, and hence all the possible existing benefits of forest products must be documented.
- While preparing the micro-plan, a complete assessment of the existing carrying capacity of the JFM command area concerned should be made.
- Preparation of the micro-plan must be based on the village ecosystem, and subjects like fodder development and non-timber forest product promotion must be given special consideration.
- Villagers, who have drawn their sustenance from forests, have a cultural and emotional relationship with forests. They also have a deep and traditional knowledge of the management and use of forest resources. Importance must be given to their indigenous knowledge and culture while preparing micro-plans.
- A preparatory workshop should be organised for scheduling the agenda and providing detailed guidelines for conducting range-level workshops. The objectives of JFM should be made clear to all concerned in the implementation of this project through such workshops. The agenda of this workshop should also attempt to arrive at a consensus for standardising the methodology to be used in range-level workshops in order to send a clear-cut message about the project.
- For successful implementation of the project it will also be useful to sensitise all the officials of the district administration, forest department, and revenue department who are likely to be directly or indirectly associated with the project at different stages.
- The NGOs will act as motivators and leaders in the planning and successful implementation of JFM. Later, they may also monitor and evaluate the programme. However, the credibility and sincerity of some of the NGO workers is doubtful. They should be extremely committed to their cause and function as a bridge between the people and the government.
- *Mahila mangal dals*, or local women's groups, in the villages of Uttarakhand region should be considered as NGOs, since women in rural areas are the main working force and their subsistence is largely forest based. This is considered necessary because there is a paucity of women's NGOs as well as of women working in NGOs as community motivators.
- The Forest Training Institute Haldwani and other Institutes should also conduct motivational training for Forest Department staff, NGOs, *van sarpanches*, and *mahila mandal dals* to help spread the message of JFM through *van panchayats*.
- Two Spearhead Teams should be constituted, one each for the Kumaon and Garhwal regions, taking due care and precautions in the selection of their members.
- Each Spearhead Team should prepare two pilot micro-plans for the identified JFM command areas. The final decision taken on the modalities of completing the task of preparing the micro-plans should be taken on the basis of the experience so gained by the two Spearhead Teams.
- Although NGOs possess a lot of experience, capacity, qualifications, and specialisations in different fields, these may still not be enough. In order to clearly understand and visualise the role of NGOs in JFM, a survey should be conducted to identify NGOs that are suitable in the context of the requirements of the programme, and only such NGO's should be invited to collaborate.

- Assistance should be solicited from NGOs at various stages of JFM to disseminate awareness among *van panchayats* and villagers, to develop their capacities and skills, and to strengthen their organisation.
- Cooperation should be sought from NGOs in the preparation of training packages and organisation of training programmes for the capacity-building of Spearhead Groups, *van panchayats*, *mahila mandal dals*, and Forest Department officials.
- NGOs should also be involved in the preparation of micro-plans and in monitoring and evaluation of the work done under JFM at different stages.

Other Related Recommendations

- An organisation of *van panchayats* should be created at the district and state levels.
- There is a need to carry out a specific study of the land that has been abandoned by absentee landlords in Uttarakhand region so that such land can be reclaimed for JFM with the consent of the owners.
- A research programme should be undertaken to study the possibility of consolidating landholdings in the Uttarakhand region. The CDS-UPAA Nainital can co-ordinate this task.
- A survey and documentation of Civil Soyam forests should also be undertaken by CDS-UPAA Nainital along lines similar to that of the *van panchayats'* survey for implementation of JFM.
- Sensitisation of people's representatives like Members of Parliament, Members of Legislative Assembly (MLAs), chairmen, *zila panchayats*, *block pramukhs*, and *gram pradhans* should also be initiated to familiarise them with the aims and objectives of JFM and solicit their support for implementation of the project.

Recommendations of Field Level Workshops

Field-level workshops were conducted between January 1997 and March 1997 in all the divisions of Uttarakhand. The public responded very enthusiastically and even village women attended these workshops with avid interest and gave very useful suggestions. The objectives of

these workshops were two fold. Firstly, they were to sensitise range-level staff, village-level people, *van panchayat sarpanchs*, and local NGOs, and to get to know their views about the ways in which JFM could be introduced successfully. Secondly, they were to verify the suitability of areas selected for the introduction of JFM during the module development workshop.

On average 45 participants took part in each of these workshops. The recommendations and sentiments expressed during the workshops show clearly that JFM can be a reality in Uttarakhand if some of the basic problems of the villagers are addressed first, and if this novel programme is implemented with all sincerity by the Forest Department and other related government departments. Some of the basic problems that need to be addressed first for the implementation of successful participatory forest management are identified below.

- Alternative arrangements must be made for fuel and fodder supply during the formative years of JFM. This problem can be solved by not allotting dead and uprooted trees to the *van nigam*, as currently done, but instead giving local villagers access to these forest products at concessional rates.
- There have been no elections in *van panchayats* in many areas. Elections should be held immediately and meetings held on a regular basis. There should also be greater involvement, and the revenue authorities should pay greater attention to the *van panchayats* by posting more staff.
- Lack of water during the dry season is a limiting factor. Serious thought should be given to rejuvenating drying streams. Repair of non-functional water pipelines should also be taken up.
- Encroachment should be halted in the areas where JFM will be launched, otherwise it will dampen the enthusiasm of others.
- Dairy, fruit, and NTFP cooperatives should be created alongside JFM so that marketing facilities can be provided for the villagers.
- Proper training should be arranged for capacity building of villagers on methods of lopping, grass collection, stall feeding, plan-

tation and seed collection, identification of local herbs, shrubs, and trees and their uses, better use of dung, and water and soil conservation. These capacity-building activities should be arranged before or during the project. Until and unless a traditional attitude towards overuse of forest products is changed, it will be difficult to attain the objectives of JFM.

- Proper demarcation and settlement of disputes should be done before JFM implementation and, as far as possible, JFM should be kept free from party politics.
- Gainful employment for local educated and uneducated young people should be given consideration under the project because most illegal activities are taken up by unemployed youths and not by older people.
- Consolidation of very small *van panchayat* areas should be taken up before introducing JFM in such areas. Consolidation can proceed side-by-side with increasing the area of *panchayats* to make them ecologically viable by including Civil Forest and degraded Reserve Forest.

Some other recommendations

- Micro-planning for an area should be people oriented, and the people should prepare the plans themselves. Forest department personnel should only have an advisory role.
- In areas where there are only *banj* (oak) trees, an effort should be made to develop the best use of oak seeds and leaves.
- Only the rill method should be used to tap resin from chir trees.
- *Sarpanchs* should be chosen with the utmost care. The *sarpanch* should be provided with all information as and when they require by the local Range Officers. The attitude of the Range Officer and his office members should be cooperative in this matter.
- Better road management and introduction of better quality cattle should be tried.

4.3.8 Present Status (1988)

The villages to be included in the JFM Project in the first year have been selected. So far 26

Spearhead Teams involving 69 forest personnel and 62 NGO members have been trained and are now preparing micro-plans for the areas listed in Table 29. The World Bank has already approved one model micro-plan for the hill region, and all the micro-plans being prepared in the hill region are being based on this model, with site specific changes as required. The first model micro-plan for the *Terai* region is under consideration.

4.4 Human Resource Development

The Uttarakhand region of the UP Forest Department has a Range Officer Training Institute at Haldwani which was recently upgraded to an institute for training *van panchayat sarpanchs* and renamed the Forestry and Van Panchayat Training Institute (FVTI). In addition, there are two Forest Guard schools, one at Tarikhet in Almora and one at Dakpatthar in Dehradun.

Every year, 30 to 40 range officers and 50 to 60 *van panchayat sarpanchs* are trained at the FVTI, Haldwani, and 20 to 25 forest guards are trained at the two forest guard schools. However, both the courses for range officers and those for forest guards lack topics related to participatory management of forest and PRA techniques. Now that the emphasis in the UPFD has changed to focus on participatory management, the curriculum should be revised.

The Forest Department also has a large number of other types of employee like resin *moharrirs*, plantation *jamadars*, and seasonal helpers in nursery and various forestry work. Training will have to be arranged for all forest personnel at every conceivable level to facilitate the process and attitudinal change envisaged by the project. Efforts are already being made in this direction. Development of professional competence among development functionaries was advocated in the National Forest Policy of 1988. This will entail a change in the work style and job requirements of UPFD staff at all levels, changes in attitude, and changes in outlook, changes in functional relationships with other staff within UPFD and with the public, and changes in competence and

professional and technical skills. A brand new approach to human resource development (HRD), in which roles are clearly defined, will be needed to bring about such changes. Once roles have been defined, functionaries can be selected, assigned specific training, and thereafter assigned to specific jobs. The UP Forestry Project envisages several job-specific and site-specific training programmes under its HRD component during the next four years (from March 1998 onwards).

Non-government organisations (NGOs) will make a major contribution to the implementation of the JFM and Eco-development Programmes under this project because many NGOs have extensive experience of using participatory processes in rural development. Suitably experienced NGOs will be sought to assist with the orientation and training of UPFD staff and with the implementation of village-level programmes. Suitable NGOs are being identified to assist with workshops for the orientation of senior UPFD staff and, wherever possible, to provide women staff to work in Spearhead Teams as members. Training on PRA and other necessary skills is being given to all the members of the Spearhead Teams.

4.5 The Potential and the Challenges

The greatest potential factor for the success of JFM in the UP hills is the strong base provided by the *van panchayat* system, which is more than 65 years old. The concept of Joint Forest Management is not unfamiliar to the people of Uttarakhand, but modern JFM does not envisage or expect only partial participation of people through a village *sarpanch* as is happening today in the *van panchayats*. Under JFM, each and every member of the village protection committee, whose membership will continually change, will have to perform his or her own role in forest conservation. At the same time, any accrued economic benefit must be shared equally, which is not happening at present either. In the hills, the aim of JFM may not be to obtain direct benefit in the shape of timber—the basic idea in these areas is to conserve biodiversity, soil, and water. Thus JFM in the hills will have to obtain economic benefits from forestry work

in association with the Forest Department and through harvesting NTFPs.

A study conducted by the Centre for Minor Forest Products, in Dehradun in the Kumaon region, showed that there is a great potential for raising medicinal plants, bee keeping, resin tapping, and production of grass. Rearing of silkworms on oak leaves is also a new prospect. Markets exist for these products.

The present system of resin tapping and *jaributi* (medicinal plants) collection by the Forest Department and some other governmental agencies can be taken over by the JFM village committee and involve all the local unemployed young people. Large tracts of denuded Civil Forest lands can be used productively for large-scale pine plantations and medicinal herb production with technical support and supervision from the Forest Department. However, the greatest challenge in realising the objectives listed above is to prepare local people and government officials mentally and to help them accept the concept of JFM. After about 100 years of one-sided management and protection by the Forest Department, and 65 years of apathetic treatment of *panchayat* and Civil Forests, it is not possible to inculcate JFM in the minds of people overnight.

Several village *sarpanchs* in Nainital were contacted by this study team. After hearing at length about several aspects of JFM, the villagers finally concluded that JFM was nothing but a novel and clever method that the Forest Department was using to annex *panchayat* forests. Thus there is need for wide-scale training at every possible level to sensitise government officials and villagers about the benefits of JFM. Mere classroom training will not achieve the objectives. The trainees will have to go to the field with the trainers and discuss various issues. Every batch of trainees should comprise 50 per cent government officials and 50 per cent villagers and local people. The trainees should be encouraged to prepare JFM micro-plans for the selected areas. Only mental acceptance on the part of both the government and the public will ensure the success of JFM in the UP hills. This is perhaps the first and the greatest hurdle.

Re-classification of all protected land, i.e., Civil Forest, and allotment of these lands to JFM is another necessary step if JFM is to be successful in the hills. This is necessary because small areas of 50 to 60 ha are not ecologically viable in the long term. Thus the available area must be increased. Choosing Civil Forest areas to do this is appropriate because it is not possible to put large areas of Reserve Forests under JFM until or unless its success is assured.

Teaching local communities better methods of agriculture, fodder collection, stall feeding, and providing fire protection training, are some of the other challenges that will have to be met at the beginning. Challenges and difficulties always pose some problems before activities are implemented, and the introduction of JFM in the UP Hills is no exception. With the historical basis of the *van panchayat* system, JFM in the UP Hills is bound to be a success if handled properly and sensibly.