



SOCIAL FORESTRY NETWORK



COMMONS, TREES AND THE POOR IN THE UTTAR PRADESH HILLS

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Forests are said to constitute the lungs of a nation: in the case of the hills they represent the very soul of the people living there. They fulfill people's energy needs and provide fodder for the livestock which produce manure for agriculture. Each hectare of cultivated land requires a sufficient uncultivated vegetated area for these needs. The people depend on forests for water supply, slates and stones for houses, and minor forest produce like bamboos and medicinal herbs. Water, land, livestock and people are highly integrated in the farming system of the hills. Forests also absorb excess water during the rainy season and release it in the post monsoon period. Thus they perform the great economic function of reallocating water over time.

Deforestation, apart from creating the immediate shortages of fuelwood and fodder, has directly affected the quality of life of people. The Government of Uttar Pradesh has responded to the problem of increasing deforestation creating several new divisions to afforest the common lands (called civil and soyam lands in the hills).

Have we been able to reverse the tide of deforestation? Is the increased target really being achieved? What about survival rates? Is the priority given to civil lands as opposed to reserved, panchayat or private lands justified by the experience gained in the last 15 years? Are people receiving the benefits of higher investment through increased supplies of forest produce? What correctives in policy and strategy need to be applied now? The present paper addresses itself to these issues.

The eight hill districts of Uttar Pradesh cover 17% of the area and 4% of population of the State. Literacy is higher than the state average, and so is the per capita income. As income distribution is less skewed in the hills, owing to lack of industries and an equitable land holding pattern, an average marginal farmer in the hills earns at least twice as much as his counterpart in the plains of Uttar Pradesh. Thus the hill people are neither illiterate nor backward, as is commonly assumed.

The pattern of social stratification is different in the hills. Land distribution is more equitable here, as landlessness is low and large farmers (owning more than 4 ha) are few in number. As opposed to multi-caste villages in the plains with no single caste controlling more than 20 percent of the population, Thakurs in the hills are in an absolute majority, single-caste villages are not uncommon, and most of the villages consist of just 3 or 4 castes like Thakurs, Brahmins, Vaishyas and the scheduled castes. The institution of the Panchayat has been stronger in the hills too; these deal with social disputes, arrangements for festivals etc with every adult member having a voice in its affairs. (Guha, 1985, p.51). The diluted caste system, absence of sharp class divisions, and strong community solidarity has made the hill society an exception to the pattern of social hierarchy elsewhere in India.

The UP Himalayas share too an important historical characteristic with other Himalayan societies: they have always abhorred rule and control by the centre. In geopolitical terms the Himalaya is not a power vacuum - for that would imply that it could readily be filled - but, rather a sort of plateau where the power of the plains finally becomes so attenuated that it can no longer sway events one way or the other. (Thompson and Warburton, 1985, pp.203-220).

Forest Cover

Landsat imagery of actual tree cover for the years 1980-82 shows that of the total 34,042 sq km of land declared as forest, good tree cover exists only on 6.6% of forest land, another 22.5% and 13.8% can be classified as medium and poor forests respectively, whereas on the rest 57.1% of land there are no trees at all. The implication of this data, is not accepted by the forest department. According to them, the forest area in Garhwal covers snow bound lands, boulders and very steep slopes where no forest cover is possible. The forest department, states that only 9.2% of the total area is the balance left for plantation. As regards the density of forest under the control of various agencies, Sri Harikant CCF (Hills) UP (pers comm) mentioned that the civil and soyam forest lands, including those under

the forest department's management, would have a tree density of only 10% of their potential, whereas for Panchayat and reserved forest lands this percentage would be approximately 50 and 70 respectively.

Biotic Interference?

Why did deforestation take place in this area? Although vast tracts of forest lands were cleared in the Tarai to make more land available for agriculture, this has not happened in the hilly region of the districts. There has been hardly any substantial net increase in the total area under agriculture in the last thirty years. True, common and government lands have often been encroached upon or allotted (till 1980 under the Nayabad Act) for agriculture, but equivalent (or perhaps even more) private lands have been abandoned for cultivation either because of migration or soil erosion.

The conventional view about depletion of forest cover is that it is due to the large human and livestock population now living in Himalayas. Two points need to be made here. First, although population has increased by 92% during 1951-81, per capita availability of cultivated land in hills is 0.28 ha which is marginally higher than 0.27 for the entire state, which does not indicate extreme pressure on resources. Per capita availability of forest area in the hills is 0.71 hectares as opposed to the UP average of 0.06 ha (Joshi 1984). Population pressure by itself is not the only factor or even the main factor in causing environmental stress. In a study of forty sites (Pitt, 1985 p.20a) in different parts of Nepal it was shown that population pressure does not necessarily result in watershed deterioration. 7 out of 9 excellent watersheds were located in high population pressure zones. Second, there has been only marginal increase in the cattle population, except that of buffaloes and goats.

It would require 6,313 km² of fuel forest with a yield of 7.5 m³/ha/yr to provide firewood for 43.25 lakh population using 1.5 kg firewood per person per day (M Ashish pers comm). Similarly the requirement of fodder of 41.34 lakh tons per annum can be met from 3,062 km² plantations of fodder forest which would yield 12 tons/ha/yr dry leaf

fodder and 1.5 tons/ha/yr grass. Thus the total requirement of land would be $6,313 + 3,062 = 9,375 \text{ km}^2$ which is close to the area under civil, soyam and panchayati forests, and is only 28% of the total available land under forests.

It would thus appear that if the present forest lands were to work with optimum productivity there would be enough to fulfill the needs of the people. Thus supply constraints rather than biotic pressure should be the primary focus for study, if one is to fathom the dynamics of deforestation.

It will be argued in this paper that disappearance of tree cover from civil and soyam lands was because of such lands being treated as open access lands, which were not managed or protected by either the government or the community. On the other hand, both reserved and Panchayati forests could be saved from total denudation because of clarity on "who owned the trees". Thus, Hobley's distinction (1985) between common property in which rights are regulated by the community through formal or informal institutions, and those resources that are open to unregulated access by individuals seems to be valid in the context of UP hills. Whereas civil forests neatly fit in the category of open access resources and hence got denuded, the panchayati forests were saved from over-exploitation, because of their nature as common property. Thus giving up control over forests by the government and turning them over to the "people" is a double edged weapon. Where users have independent rights to the use of the forest resource, no user can control the activities of other users, total demand exceeds the supply, and there is no organisation to enforce discipline, unrestricted exploitation is bound to result in degradation of the resource. However, in the same scenario, introduce an organisation which helps the users in evolving conservation norms, has some credibility to enforce such norms and has access to funds which can regenerate depleted areas, the resource is likely to remain intact. Thus, withdrawal of government control may not always result in self-regulatory forces which prevent the destruction of forest and grazing lands. Human systems are not self-regulating, they need to be managed through consensus and discipline. The conflict between short

term and long term interest of the individuals as well as between the individual and the group cannot be resolved by the individual alone, as there are other individuals on whose behaviour he has little control. The local Panchayats could perform this function, provided they are strengthened and trusted with funds.

It will also be suggested in this paper that the present strategy of giving the entire responsibility of afforestation to the forest department on lands like civil/soyam and panchayat on which it has little dejure control needs to be reviewed. It would seem more advantageous if the Panchayats and farmers are also directly involved in plantation. They along with the forest department should concentrate on wastelands on which they have best control. After all the key to understanding the issue of exploitation of uncultivated land in the hills lies in analysing tenurial relations, as almost 80 percent of the land is in non-private institutional hands. Rights and obligations of people and government in various categories of land are described in Table No.1.

Table No.1
Rights and obligations of people and government in various categories of land

LAND			
Private	Civil/Soyam	Forest	Panchayat
<p>Full rights as regards agriculture. Harvesting of trees on private lands is not permitted, which discourages use of degraded land for tree plantations. Quality of land is generally deteriorating resulting in stagnant/declining agriculture production. Land operations are performed by women.</p>	<p>Unrestricted grazing and tree cutting rights in practice. Encroachments are encouraged, tolerated or regularised. These lands are highly degraded productivity is very low. People do not identify with these lands.</p>	<p>Except in closed areas, grazing and collection of dry fallen wood is permitted, although frowned upon by local foresters. Traditional benefits regarding supply of timber generally do not benefit the poor as these are routed by the forest department through the Village Pradhan. People are hostile to forest department and do not identify with forest lands.</p>	<p>Although Panchayat forests are maintained, ordinary people do not actively participate in its management. Only 8 to 15% of their requirements are met from Panchayat forests. People's dis-illusionment with Panchayat forests is of late on the increase, yet they identify with these lands and are aware of management practices.</p>
<p>People ----></p>			
<p>Because of traditional functions of maintenance of land records, collection of taxes and Police the village Patwari continues to be extremely powerful in</p>	<p>In actual practice very few people have been convicted for felling trees or encroaching upon such lands. Because of other</p>	<p>Negligible. Sometimes law & Order situations are created because of hostility between people and foresters, which require intervention by the</p>	<p>Gaon Sabhas Forest Panchayats are under the administrative control of the revenue department which has a status-quo perspective.</p>

Revenue ---> the village.
 Department People generally cut trees on their private lands after bribing the Patwari, rather than obtaining permission as required under law.

pressing responsibilities Revenue Departments role in regulation of such lands or in their development has been almost nil.

revenue authorities. Forest staff is often used for helping in national campaigns of family planning, mobilisation of savings etc.

Has not felt responsible for development of new forests or for providing greater satisfaction to the right holders. Inter and intra village disputes are arbitrated by the Revenue Department

Unlike in the plains, forest department's programme of farm forestry is negligible in the hills. Inter-action with people is limited to granting of permission for felling of trees which is time consuming. In soil conservation Divisions private lands have been taken up, but engineering treatment increases problems of soil erosion. The programme is neither popular nor increases productivity.

Has little regulatory control over such lands - 15% of these have been transferred to the forest department for afforestation. Survival of trees is about 25 to 30%, may be even lower in Garhwal. It appears that the Government is in no hurry to transfer afforested lands to Panchayats even after 5 years. Forests in small pockets may not survive after transfer to Panchayats unless adequate precautions are taken.

Has full rights. The powers are derived from Indian Forest Act. New plantation in such areas has suffered from lack of funds. Although soil texture is better as compared to civil/soyam lands, broad leaved species are not given preference. Banning of felling over 1,000m is likely to improve tree density in the coming years.

Although 40% of Panchayats income is to be spent by the forest department for improvement of Panchayat forests, yet little action has been taken in that direction. Working Plans for such Panchayats have also not been prepared although required by law. Last priority is given to such lands by the department, resulting in loss of income to the Panchayat.

Forest --->
 Department

<p>Plays little role on private lands, except in the case of very active Panchayats where people are encouraged to plant fruit trees on private lands.</p>	<p>Gaon Sabhas exercise little control, except in some villages. Not keen to take over afforested lands for want of adequate financial support from Government for protection.</p>	<p>Almost nil except in case of very active Panchayats (CHIFKO) or remote areas of Chaktata and Jaunsar Bawar where Panchayats take interest in distribution from Forest lands. This is likely to improve in future.</p>	<p>Regulated by Van Panchayat's Rules, which give little freedom of action to the Panchayats. Panchayat income is not readily available for re-investment. Yet Management can be made viable</p>
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Tragedy of the Commons?

If land is left undisturbed natural forest would reappear in most of the hills through a succession of vegetation types. The natural species for lower hills and the Tarai is sal and other deciduous broad leaved trees, for higher altitudes are conifers interspersed with oak, wherever soil and moisture conditions are better. If grazing pressure and biotic interference increases the reverse process sets in. Ultimately either bare ground will result, or plants alien to the area, which are neither eaten by animals nor useful to men, will appear. Most of the steep slopes in Garhwal and Kumaon are already invaded by such useless plants, like lantana, cacti.

The number of animals which an individual would keep and the manner in which he would utilise the commons is obviously determined by the preception of costs and benefits. If grazing lands are commonly held, which permit open and unrestricted access to all the villagers on a defined or undefined area, each villager would perceive short term benefits by increasing his herd, or increasing intensity of grazing whereas costs from the deterioration of the commons because of over grazing are delayed. This is what Hardin called, 'The Tragedy of the Commons'. In a theoretical examination of the psychology of herdsmen regarding rangelands Hardin observed.

"Therein lies the tragedy. Each man is locked into a system that compels him to increase his herd without limit - in a world that is limited. Ruin is the destination toward which all men rush, each pursuing his own best interest in a society that believes in the freedom of the commons".

As an individual he may be aware that overgrazing is suicidal, but he cannot reduce the number of his animals, as this will worsen his condition and others would benefit at his cost; unless everyone agrees to a certain code of conduct.

It may be noted here that there has been almost no increase in the number of cows and bullocks in the hills. Therefore sentiment of cow

worship or dietary habit is not the reason for the problem that is confronting us. Secondly, "too many animals" is a relative concept, dependent upon the present productivity of land. There is potential for increasing the productivity of non-private lands, and hence, at least in theory, the system can cope with the present population. Thirdly, the action on the part of the farmers to keep non-descript cattle has been generally viewed by the policy-makers as against "national" interest, and therefore irrational. Failure to appreciate rationality of the farmers behaviour has led to a belief within the government that "excessive" cattle in the hills is the cause of deforestation, and that it has nothing to do with the prevailing man-land relationships. As it is perceived to be autonomous and independent of other factors, it is sought to be changed either through legislation, or education or administrative controls, difficult questions of tenure are not gone into. As repeatedly stressed in this paper, people's rights and obligations in land, and the way in which it is used and the products distributed determines the nature of exploitation of the land. Since these rights and obligations were quite different on revenue lands as compared with Panchayat lands, the degree of deforestation also significantly varied in the two cases. A chart comparing different forms of forest management is given as Table No.2

Table No. 2

CHART COMPARING DIFFERENT FORMS OF FOREST MANAGEMENT

Institutional Framework Characteristics	Civil Forests under Revenue Management	Civil Forests under Forest Management	Reserve Forests under Forest Management	Forests under Panchayat Management
1. Present condition	Highly degraded	Chirpine has been planted in the last ten years covering about 10-15% of the area.	Tree density is between 40 to 50%. It is better at higher altitudes. As compared to Garhwal, Kumaon is better wooded.	60 to 70% of the area is under trees, although there is a great deal of variation from Panchayat to Panchayat
2. Encroachments	High	Encroached land is not transferred to the Forest department.	Few, except in the Tarai.	Negligible.
3. Grazing practice	Open throughout	Grass can be cut anytime of the year. Grazing is controlled in closed areas because of the choice of species, boundary wall and a watchman.	Open throughout the year except such areas which are closed.	Rational grazing is practised in some panchayats. Area is generally closed during the rainy season, grass can be cut after obtaining a pass once or twice in a year. Grazing in other months is discouraged if fodder trees have been planted in the area. As this is effective only in some places, Panchayats also prefer to plant non-browsable species.

4. Exploitation	Uncontrolled	Trees are less than 10 years in age. Lopping is discouraged, although such instructions are often ineffective.	Felling of trees above 1,000m is banned since 1979, in lower reaches mostly industrial and commercial species like sal, poplar, eucalyptus and pine have been planted.	Trees are sold to the villagers on a subsidized basis. Often there are allegations of bias in allotment of trees. The poorest were ignored in the Panchayats which were studied.
5. Effectiveness	No action is taken except when encroachments are reported. These cases are tried under the Public Premises Act, take a lot of time, and result in few convictions.	Indian Forest Act is not applicable, hence deterrent action is not possible.	Action, both administrative and judicial, is generally prompt and effective.	Consensus and social sanctions are more effective than judicial action. Fines are imposed by the Panchayat, although legal, are often paid by the offenders.
6. Management Input from people	Nil	After passing a resolution to transfer such lands to the forest department there is little involvement of the people.	Is not sought under the present scheme of things.	Requires intensive supervision from Sarpanch. People's involvement varies from passive support to Sarpanch, to active involvement in protection and distribution of produce.
7. Input from	Nil, except as under (5).	Separate divisions have been created with adequate funds. Annual expenditure on afforestation of these lands may be around Rs.20 crores.	Territorial divisions have been in existence since a long time. These also undertake new plantation to improve density of the existing stock. The emphasis is on upkeep of real estate rather than on new plantations.	So far negligible. The input is mostly regulatory rather than developmental.

8. Benefit to villagers
- Small quantities of grass after the rains.
- Pradhan gets a contract for civil works. People will start getting fallen twigs after a few years.
- Rights of the people are recorded. Grazing and fuelwood collection is permitted, except in areas which are under closure. There were complaints regarding distribution of grant trees, as they are given to the pradhans and often do not reach the people.
- The benefit depends on the total area of the forests and its management. They get grass and sometimes fuelwood at a subsidized rate. On the whole this meets hardly 2 months requirements.
9. Benefit to Government
- Nil
- Ecological benefits are not fully established through plantation of pine, although area has started looking green.
- Conventional benefits, although revenue has started declining because of ban on commercial felling of green trees above 1,000m.
- Income from sale of resin is used for all kinds of purposes, like fulfilment of target under small savings, and petty development works.
10. Plantation of new trees
- There is no scheme.
- Is being tried on a massive scale, although survival is between 20 to 30%.
- Not on a significant scale as Government help is unplanned and sporadic.

The Government of India had appointed a Task Force in 1984 to study all aspects of grazing and fodder and to evolve a National Grazing Policy. The report, in a number of places, strongly recommended measures to reduce the number of animals. No where did the report discuss the impact of grazing on common lands, including forest lands.

The problem on revenue and forest lands is certainly a social one. It has several interrelated elements. First, the hill farmers tend to ignore social costs. Second, they, being largely poor, disregard the future effects of their actions. Their world-view is limited and benefits which are likely to accrue to them in distant future do not mean much to them. Third, they do not identify with public property like government forests. And fourth, which is perhaps the most important, lack of collective organization puts a limit to individual rationality and it challenges a "fundamental faith that rational human beings can achieve rational results".

Two solutions have been theoretically suggested in order to avoid the tragedy of the commons. Hardin, in a later article, suggested either privatisation of the resource or coercive government control. The logic is that as the tragedy of commons is unavoidable, we should either get rid of the commons through privatisation or we must change human nature through coercive authority. When the resource is held in common the market fails as an instrument for signalling demand (Bowonder 1983). Consumption is not restricted to those who pay a market price and market forces do not operate to restore the imbalance between supply and demand. But if the resource is privatised market forces start operating and overuse is stopped. Similarly, introducing effective control by the Government may enhance efficiency if theft from free riders is kept under check. We shall discuss the feasibility of these two solutions in the context of UP hills.

Privatisation of Common Lands

There are several problems in privatising rangelands, whether located within the legal category of civil/soyam lands or forest lands. First, as will be discussed later, there is substantial private land available in the hills which could be afforested or brought under

grass, provided sufficient attention is given to such lands. Thus further privatisation could wait and is not called for in the immediate future. Second, creating rights in favour of some on resources on which the entire village is dependent would not appear fair and may lead to social tensions, even within the category of the poor. Third, the quality of common land varies from point to point, even within a five hectare plot, and its equitable division would be beset with problems. Fourth, civil lands are generally removed from the village and cannot be regenerated or conserved without adequate protection. Privatisation would certainly increase the cost, as against one watchman for the entire plot each family would have to engage a separate watchman. Fifth, hill societies have been less heterogeneous and more integrated than in the plains and cooperation is easier to achieve. Divisive forces of class, caste, and access to markets which the villagers have to contend with in the plains are less pronounced in the hills. Sixth, privatisation encourages intensive landuse especially for agriculture, whereas both from the point of view of ecological considerations and social needs, what is required is vegetative cover through grasses and trees. Seventh, several watershed areas are a part of such lands, which require comprehensive integrated planning as regards land use. Creating private rights may delay the implementation of such a plan, as securing willingness of landowners is time consuming. Eighth, the Tree Patta Scheme, as has been formulated by the Government of India distinguishes between tree tenure and land tenure; that is, the beneficiaries have no rights on land, their rights are confined to the usufruct of trees. Such a distinction is totally alien to the Indian culture. People are not used to this concept, as according to the land systems in India trees are considered as "fixtures", permanently affixed to land and hence belong to the owner of the land. The new concept therefore acts as a psychological barrier and inhibits people's participation on Patta lands.

What kind of objective conditions and market forces promote privatisation of resources? It has generally been observed that land requiring intensive inputs of labour and cash would be difficult to sustain as a common resource. Traditionally economic activity in the

Indian villages was always family-based, whether agriculture, cattle rearing or cottage industries, whereas commons provided low value consumption goods, which required negligible investment. Thus wherever agriculture was possible, land has been either encroached upon, or allotted by government or encroachments have been regularised. The remaining common land is likely to remain uncultivated unless technological advancement brings irrigation to new areas. Similarly, efforts to retain the cooperative character of agricultural production farms is not likely to succeed, as individuals prefer family based production units (Tushar Shah & Ballabh, p.8-10). Thus wherever the productivity of commons is likely to increase substantially, it is better to allot it to the poor, rather than work against market forces to retain its character as commons. In a situation of increasing productivity of land over time, commons are a transitory phase between open access lands and private lands; when it produces too little it is open to all, when it starts generating cash incomes, it gets into private hands. At the latter stage it is best to create private tenure in favour of the poor. There is no prospect of this happening to lands outside direct government control in the near future in the UP hills. If present trends are any indication, productivity of both private and common lands is on the decline. To sum up, privatisation of degraded lands on a large scale is not the solution, but afforestation of civil/soyam lands should either be handed to Panchayat after 10 years, or private tenure could be created after afforestation. A situation where common lands have become productive because of government investment and private lands are losing productivity because of soil erosion is not a stable one. This would encourage encroachments, and hence well defined tenure must be created. However, a great deal of empirical data would be required before large scale tenurial changes can be suggested.

Government Programme

The other option of bringing common degraded lands under government control has been tried in UP. Of the total funds meant for afforestation in the hills, about 70% is spent on civil and soyam lands. The following comments may be made about this programme:

1. The main objective is plantation of trees, a laissez faire attitude is adopted towards grass. Thus only non-browsable species are planted. However, people's immediate requirement is fodder and not timber.
2. In order to "secure" the willingness of the Pradhan he is offered the contract of building the protection wall. This along with several other development works entrusted to him has turned almost all Pradhans into Government contractors.
3. The resolution of the Gram Sabha to transfer civil lands is generally not taken in an open meeting of the village. The resolution is sent by the Pradhan and sanction of other members is taken later.
4. Plantation is undertaken as a departmental undertaking. The people regard it as a Government project and do not identify themselves with it.
5. A wall erected is to prevent intrusion by animals. The quality of construction is generally poor and it fails to check the entry of animals. Where stones are not readily available, trenches have been dug. These are not along the contour lines and add to the erosion hazards.
6. It is difficult to get civil lands in large chunks. It increases supervision problems. In Pauri, for instance, in 1986-87 1,100 hectares of targetted land was made available in 200-250 patches.
7. The number of nurseries is inadequate, especially in Garhwal hills. Plants have to be transported

from the nursery to the plantation sites on the onset of monsoons. It takes several days which increases mortality. The slopes are steeper in Garhwal, where survival rate is not more than 20% (conversation with DFO Pauri-Garhwal).

8. The watchman is effective only for one site. However, he has up to 10-15 sites under his supervision. This increases theft and over-grazing by animals.
9. Forest department has little legal powers in such lands; even if the watchman is able to report against offenders, no action is forthcoming.
10. Transfer arrangements of land and forests to local bodies have not been worked out. It is unrealistic to think that a resource, which was identified by the people as Government property for 5 to 10 years, would be properly managed by such organisations unless steps are taken to improve the capability of such organisations and to make them identify with growing trees during the interim period.
11. The principal purpose of Social Forestry was to build the institutional capacity of communities, Panchayats and individuals so that they could undertake fuelwood and fodder plantations through self-help schemes. This has not happened.
12. It was also observed that availability of funds for afforestation for the blocks was ad hoc and uncertain.

Choice of species

In Almora district it was noted that 71% of the area was put under conifers, mainly Chirpine (S L Shah, pers comm). The people wanted Oak and other broad leaved fodder trees. According to them, pine trees deplete the soil, absorb soil moisture and leave the land dry making it impossible for other broad leaved species to grow. On the other hand the forest department explained the dominance of Chir as due to highly eroded and poor soils where nothing else would grow. The tradition of unrestricted grazing and indiscriminate lopping in civil/soyam lands by the people also forces them to prefer a tree which is non-browsable. Other trees would require better protection arrangements, more intensive management, besides richer soils and willing cooperation from the people. As the legal control of the forest department on civil/soyam lands is tenuous, it hesitates to try other species, where survival would be poor.

In 1981 the Government of UP had appointed a high powered committee with the Chief Conservator of Forests as its member-secretary and several other retired foresters as members to look into the policy regarding exploitation of forests and protection of trees and to bring improvement in the maintenance of environmental balance in the Himalayan region of UP. The fourth term of reference read as follows:

"The Committee should give its opinion, after reviewing the choice of species for plantations, especially in the civil and soyam forests, whether the department has given enough emphasis to the commercial aspect rather than to improvement of environment and needs of villagers for fodder and firewood. It is often complained that the department has encouraged planting of Chir instead of broad leaved fodder and fuelwood species. The plantation of Oak will be beneficial to the environment and for meeting the needs of villagers".

The Committee questioned a large number of the public and foresters, and also visited several sites. In its findings, however, it did not fully support the viewpoint of the people. It recommended that fuel

and fodder species should be given priority in Panchayat, civil, soyam lands and khat forests and also in the reserved forest areas close to villages. The recommendation was accepted and orders were issued to the forest department.

Reserved forest lands with better soils, effective closures for regeneration and prompt punitive action would be better utilised for the plantation of broad leaf species. Since felling of green trees above 1,000 meters has been banned, and since distinction of categories like Reserves, Civil etc need to be blurred, it stands to reason that the entire reserved forest area and not only such area close to villages, should be primarily utilised for raising fodder trees preferred by the people. If necessary, the norm regarding cost of plantation may be changed so as to provide for stronger protection walls, better management and more intensive supervision in reserved areas.

Two points need to be emphasized here. First, the much talked about slogan of involving people in social forestry would not become a reality unless foresters are trained in extension and are kept free from routine administrative tasks. Second, Social Forestry seems to have over emphasised plantation of trees. Grasses, legumes and fodder have been relegated to the back seat. Simple closure of areas and plantation of grasses would not only be cheaper but of greater social relevance in the hills. This requires understanding and consensus on grazing which would result when foresters start devoting time from routine administration to people's issues.

Non-Solutions

The crisis of deforestation has invited two kinds of solutions. First, advocated by administrators and foresters, may be termed as tougher top-down approach. Overpopulation of humans and animals is perceived as the problem, the solution therefore lies in military style controls and forced migration. The second could be termed as bottom-up approach. It encourages self-reliance and grassroot activities, notably those involving women and young people. (CSE, New Delhi has been advocating this approach for the last several years).

The logic is that such a decentralised development is likely to fit better with people's real needs and aspirations, "likely to be intersectoral and to produce as well an ecologically sound and sustainable process". (Pitt, 1985 p.151). The problem with this approach is that it assumes communities to be monolithic, to be representing the true interests of the people and the poor, and to be autonomous of market and political forces. Empirical evidence would seem to contradict this.

Realising that many Panchayats are dens of vested interest or favour income approach through commercial species ignoring the consumption needs of the poor, some have suggested bypassing the democratically elected and established Panchayats and depending heavily on NGOs and informal, unregistered organisations of the people, like Yuvak Mangal Dals, Mahila Mandals etc. They would even like government or International funds to be channelised through them.

There are problems with this approach too. First, this view that non-elected organisations like NGOs and women's groups are above class interest, whereas the elected ones are dominated by a few, does not seem to have empirical foundation. It stems from an elitist and paternalistic attitude that the urban educated have towards rural societies, parallel to the white man's burden theory during the colonial period. Second, it makes the task of policy makers of discovering input-output relationships in forestry, that is, what kind of policy interventions would lead to what kind of results, an impossible one, as no policy packet can produce a Chipko movement! Third, as will be discussed in the context of Van Panchayats, consensus among the community needs to be backed by power to punish those who break the consensus, otherwise infringements would become the rule, rather than the exception. Non-statutory organizations would therefore not be able to sustain a durable optimal rational behaviour on the part of its members. Legal and administrative structures should not be at variance with each other. Fourth, the number of good voluntary organisations is limited, and therefore despite fund support from government these may not be able to perform more than five percent of the tasks. At best they can develop models for replication in other places.

The prevalent thesis that the tragedy is inherent to the commons and that, human nature being what it is, the tragedy is therefore unavoidable, itself needs to be questioned. Several micro level studies have demonstrated that given appropriate institutional support, people themselves realise the dichotomy between individual and group rationality, and start observing certain rules to ensure a resource in perpetuity. (Chowdry 1986, Ostrom 1986, Thompson and Warburton 1985, McKean 1985 and Morse 1987). In societies, like the UP hills, which are socially less differentiated, and are remote from state control and markets, commons have a better chance of survival (Shepherd, 1985), especially when they are to be used for low input and low output crops like grasses, fuelwood and fodder trees, and small timber. This would be best done by strengthening local management of commons, through forest councils. Fortunately, in the Kumaon hills and British Garhwal a tradition of Van Panchayats already exists. They control about 7% of the total forest area, this could be increased to about 20% in phases in the next ten years. Beyond this, the Panchayats may lose the advantages that they possess today.

Van Panchayats

The Panchayat Forest Rules, 1976 have been formed under section 28 (2) of the Indian Forest Act. The state objective is to protect and develop the forests and to distribute its produce among the right holders in an equitable manner. However, the rules, while making the Panchayats responsible for proper management of the forests, deny to it necessary authority which seems to be vested with the revenue and forest officials. Thus, section 17 requires that previous approval of the Deputy Commissioner (DC) is necessary before a watchman or any other paid staff is kept by the Panchayat. In actual practice, the Deputy Commissioner's approval is taken whenever salary is paid to the watchman. An offence involving a sum of more than fifty rupees can be compounded only with the previous approval of the Deputy Commissioner. Similar permission is required if the seized property (stolen timber etc) is proposed to be sold. The Panchayat, on its own, cannot make local sale of surplus forest produce from the area to the right holders for their bona fide domestic use without obtaining prior

approval of the Divisional Forest Officer (DFO). If there are trees for commercial sale in the area, the permission of both DC and DFO is required. Thereupon action to mark and sell the trees shall be taken by the DFO. The Panchayat can only sell fallen fuel and grass for the bona fide domestic use of the villagers, provided such a sale does not violate provisions of the Working Plan of the Panchayat, which is to be prepared by the forest department. This would also require framing of bye-laws which have to be approved by the Commissioner.

The forest department deducts, from the sale proceeds of resin and other forest produce, its actual cost of extraction of resin plus overheads. From what remains twenty percent would go to the Zila Parishad (district council), forty percent to the forest department for development and maintenance of Panchayati Forests, (in actual practice this is never done, as the forest department does not have the responsibility for upkeep of Panchayat Forests) and the remaining forty percent is available to the Panchayat for carrying out projects of local public utility, if such projects are approved by the Block Development Council (Kshetra Samiti) and the Deputy Commissioner. The entire proceeds are deposited in a separate account in the Post Office, so that the local administration can fulfil its target for mobilising savings, and is not easily available to the Panchayats. In fact, they do not even know how much money has been credited in favour of their Panchayat. In Almora district alone the total capital account of the Panchayats is Rs.1.2 crores, their contribution was Rs.6.3 lakhs in 1986-87, but they were permitted a withdrawal of Rs2.4 lakhs in the same year. The individual contribution of each Panchayat to the fund is a closely guarded secret so that the Panchayat does not start clamouring for its expenditure within the village.

Thus the administrative control over the Panchayats is with the Deputy Commissioner, whereas the technical control has been given to the forest department. Despite such centralisation there is hardly any staff available within the revenue or forest department to dispose of requests from the Panchayats. The administrative support is very poor, which inhibits the enthusiasm of the Panchayats in delivering

results. The Rules and lack of infrastructure seems to inhibit rather than encourage democratic functioning of the Panchayats.

It should be pointed out here that the Government of UP had appointed a Committee of non-officials and officials in 1981 to suggest changes in the present Rules. The Committee submitted its recommendations in September 1983 suggesting, inter alia, a separate Forest organisation under the Collectors to deal with the Panchayats. It, however, retained most of the earlier provisions concerning powers and control of the District magistrates. Almost four years have lapsed but the new Rules are yet to be put into effect.

The Evaluation unit of the State Planning department studied 11 panchayats in which the total forest area was 1,090.50 hectares, established between 1932 and 1964. In one panchayat, the Sarpanch belonged to the Scheduled castes, in the rest they were Brahmins or Rajputs. 8 out of 11 panchayats had controlled encroachments, protected existing forests and had utilised forest produce scientifically. In one Panchayat of Pithoragarh 7 locals had encroached upon 4 hectares of common land. The case is subjudice. 10 out of 11 panchayats have appointed a watchman but as the area is quite big, the watchman has been able to protect only the easily accessible areas. Only 2 out of 11 panchayats totally closed a certain percentage (16% and 38%) of the area against grazing. The remainder closed the forests only during the rainy season, but allowed unrestricted grazing in the entire area during the rest of the year. The income from cutting of grass is generally not formally credited to the account of the Panchayat, as it is used to pay the watchman. 5 out of 11 panchayats earned 50-400 rupees annually by selling firewood to the right holders. Two panchayats earned royalty from resin tappings. 8 panchayats planted 160 hectares but only 27% of the seedlings survived. In addition the forest department planted 64 hectares out of which only 23% survived. On the whole, since the formation of the panchayats, forest wealth has increased by 40 to 50% in the area. Out of 94 right holder families, 170 of the poorest families complained that the Sarpanch were biased against them. But 12 admitted that they had illegally satisfied their demand. The Sarpanch explained that

they were not the original inhabitants of the village and hence, according to rules, were not entitled to the benefits. 88 out of 94 families sent their cattle for grazing. 3 complained that the Sarpanch did not permit their cattle grazing because of prejudice. 3 found the area too remote from the village.

Factors which help satisfactory functioning of the Panchayat can be summarised as follows:-

1. Leadership quality of the Sarpanch. Time given by him for supervision. His ability to evolve consensus within the village. His equation with bureaucracy.
2. Funds earned out of the resin tapping. Such panchayats which have a good bank balance find it easier to employ a watchman for protection.
3. Proximity of the village to reserved forests, which satisfy a substantial part of the village needs. Distance from road so that the produce cannot be marketed.
4. Total area and quality of land of the panchayat forests.
5. Single village panchayats do much better than multi-village Panchayats. In the latter, smaller hamlets often feel discriminated and therefore do not cooperate. Similarly, monocaste villages do better. The Panchayats in the UP hills have generally done better than the Panchayats in the plains because the size of the user group in the hills is generally fifty to hundred families only.
6. Chances of pilferage by the neighbouring villages are reduced if they too have access to a well-stocked forest.

The area under Panchayat forests at present is 2,448 sq kms. It is estimated that up to 1980, 600 sq km of civil/soyam forests has been afforested by the forest department which is now to be transferred to the Panchayats. Thereafter each year 250 to 400 sq km of afforested civil/soyam area is likely to be transferred to the Panchayats from the control of the Forest department. The Panchayats in the present set up are suited for conservation and distribution of existing stock, but not for development of new forests. If Panchayats are given adequate financial and administrative support, as is suggested in this paper, they could independently take the responsibility of regenerating depleted civil and soyam lands and thus the total area under their control would further increase. One could therefore expect that by the turn of the century the area under the control of the Panchayats would become 6,000 sq kms, that is half of the present 7,090 sq km of civil/soyam lands would come under their control. As the total exploitable area under reserve forests in the hills (minus area under permanent snow, alpine pastures etc) is about 1,800 sq kms, the financial support for upkeep, maintenance and development of Panchayati forests should be about one-third of what is sanctioned for the reserved areas. It may be again stressed here that bureaucratic control over panchayats is not being suggested. On the contrary, the Panchayats are to function as semi-autonomous units with sufficient authority vested in them which would enable them to protect forests, distribute produce, take action against offenders, generate income and utilise funds for further enrichment of the area under their control. This would require:-

- a) Significant changes in the proposed Forest Panchayat Rules, 1983 with effective delegation to the Panchayats, as suggested in Table 3.
- b) Creation of an organisation under the Hill Development department or the Chief Conservator of Forest (Hills), UP with responsibilities of extension, dissemination of technical knowledge, training and other development (as opposed to regulatory) functions to help and guide the

Panchayats. The organisation would be locally under the administrative control of the District Magistrates through the Block Development Officers.

- c) Adequate funds for the enrichment of the existing stock, especially through broad leaf species which require greater investment in protection and care.
- d) Gradual transfer of civil/soyam lands to the Panchayats both for maintenance and afforestation.
- e) The present system of managing through an elected committee of five to nine members should be abolished. All important decisions concerning village forests should be taken in an open house meeting of the village. This will increase participation and reduce scope for bungling.

Table No.3

Changes in Forest Panchayat Rules of 1931, 1976 and 1983

Item	1931	1976	1983	Suggested
1. Punitive Action	Panchayat had powers to fine up to Rs.5.	Panchayat cannot impose fine. It can compound an offence up to Rs.50 with the agreement of the offender.	Same as in 1986. Except the compounding fee has been increased to Rs.100.	The Panchayat should have power to impose fines up to Rs.100 which, if not paid by the offender, should be recovered as arrears of land revenue.
2. Management of Panchayat funds	The entire income of the Panchayat was at its disposal.	Only 40% of the resin income is theoretically available to the Panchayat. Of the rest, 20% is to go to the Zila Parishads and 40% is to be spent by Forest Department for maintenance and development of Panchayati forests. In practice, even the 40% part is not readily given to the Panchayat - it has been deposited in long term accounts.	Out of the total income, only up to Rs.600 per annum is available to the Panchayat, at least 5% of this is to be spent on development of forests in the area.	The Rules should lay down general principles for expenditure on approved items. The District Magistrates should be authorised to decide the financial names. Subject to these, the Panchayats should be free to spend up to 50% of their annual income without obtaining sanction from above. They should send quarterly expenditure details which should be monitored at the Block Development Office.
3. Distribution among right holders.	The Panchayat was free to make its own rules to ensure equitable distribution.	The Panchayat can sell fallen fuel and grass to the right holders. If it wishes to sell more than one standing tree for the bona fide domestic use of right holders permission of the DFD is required.	Fallen fuel and grass can be given to the right holders. The Panchayat can allot one tree to a family for domestic use keeping in view the overall position. If the right holder's house is damaged, he can be given two additional trees free of cost.	The Panchayat should have full powers to distribute and sell fallen fuel and grass to the right holders. As regards sale of standing trees to the right holders the number of such surplus annual forest produce should be determined once in three years by the Panchayati Forest Development Officer, but the actual disposal should be done by the Panchayat.

4. Commercial sale	No restriction	In actual practice all commercial sale is done by the Forest Corporation after a written reference from the DM and the DFO. It often results in deterioration of timber.	It would require the approval of Divisional Commissioner after the recommendation of the Forest Panchayat Development Officer.	The Panchayat should be free to conduct auction of fallen trees in the presence of the entire village up to a value of Rs.5,000 in a year. However, commercial sale to outside parties should generally be discouraged.
5. Tapping of resin	The forest department tapped resin for the Panchayat.	Although Rules permit tapping of Resin by the Panchayat in accordance with the rules of the Forest department, in actual practice this work is done by the contractors appointed by the Forest department. The Panchayat is not consulted, nor is it aware of the amount of royalty deposited by the contractor.	The Panchayat is empowered to tap and sell resin under the supervision of Panchayat Forest Development Officer, provided actual tapping is done by trained staff.	Same as in 1983, with the proviso that outside contractors should be banned from tapping resin. Either it is to be done by Panchayat or a local villager or by the department. Short training courses can be organised to equip the local panchayat with the necessary techniques. Marking of trees should be done with the full knowledge of the Panchayat. Conditions should be created which enable the Panchayat to increase its income and satisfy the right holders.
6. Right to slates stones.	No restriction	The Panchayat can make local sale of slates and stones for the bona fide domestic use of the villagers.	No specific rights are with the Panchayat, although restrictions exist in some districts.	Same as in 1976.
7. Organisational structure	Same as in 1976	The Sub-Divisional Magistrates have been given the powers of Panchayat Forest Officers within their jurisdiction. They exercise administrative control over the Panchayats. Their inspection notes read more like auditor's report, and lack developmental perspective.	Role of the SDMs has been restricted to the initial constitution of the Panchayat. Rest of the powers have been given to a District Forest Panchayat Officer who would be a Forester.	Same as in 1983, but the Forest Panchayat Inspectors or the ADO (Forests) should be posted at each block and they should render assistance in extension and technical knowledge to the Panchayats. The role of the government should be developmental rather than regulatory. The Blocks, which control NREP and RLEGF funds, should have greater say in developing and maintaining Forest Panchayats. The powers to suspend Panchayats and take punitive action against the Sarpanch etc should be with the SDMs.

Afforestation on Private Lands

It is a well-established fact that of the various legal and institutional models of forestry in India farm forestry on private lands has shown the best results. This is true of UP as a whole, although so far it is largely confined to relatively big land owners in agriculturally prosperous areas. (Gupta, 1986). Their orientation toward cash income is higher, their capacity to respond to new enterprises is better, and tree crops offer the advantages of ease in labour management to them. Of the total number of seedlings produced in the state roughly 60 to 70 percent are being lifted by farmers and private planters, and the rest are used in government plantations on degraded forest lands, roadsides etc.

Per capita availability of land in the UP hills is comparable with that of states like Kerala and West Bengal, which too have a substantial farm forestry component. Net sown area per person in the UP hills in 76-77 was 0.18 hectares which is only marginally lower than the UP average of 0.20 hectares. Intensity of cropping being higher in the hills, per capita gross cropped area is higher in the hills than the state average. Yet, little effort seems to have been made to promote forestry on private lands. To some extent, the lack of effort exhibits pro-large farmer bias, because there are very few big farmers in the hills. It is somehow assumed that marginal farmers will not spare land for tree cultivation, and that people regard wood as an abundant free material to be collected at will from the forests, an attitude which makes them indifferent to growing trees on their own land. It is also assumed that every inch of privately owned land is under cultivation, and the pressure to produce more grain forces the hill farmers to encroach upon Government lands as well.

Facts are otherwise. The total private land in Almora is 2,720 sq kms, out of which only 1,430 sq kms is under cultivation. (Data obtained from collectorate Almora). Thus roughly 40% of private land is not under plough. It would be safe to assume that at least half of it is fit for fodder, grasses and trees. A survey done in Almora showed that roughly 32,000 hectares (320 sq kms) of land, which was

under agriculture stands abandoned now because of loss of fertility, poor terracing or migration (personal communication from District Development Officer). Although data from other districts is not readily available, it is common knowledge that a sizeable part of land described as unculturable, culturable waste etc is private land.

A survey done in Almora district revealed that on an average each family owned sixteen trees (Personal communication from Fodder Extension Officer Almora). There are similar examples from other land scarce countries too. In Bangladesh it was found in 1983 that on an average each household had planted or naturally regenerated 68 trees (Byron 1985). In Panama, fruit trees are planted on almost every small farm. A survey in the hill area of Nepal showed that on an average each household owned 28 trees (Campbell and Bhattarai 1983). Thus, farm forestry could become a very viable programme despite small holdings.

In a study of Dwarahat Block of Almora district (Jackson, 1981 p.37) it was noted that cultivated land amounted to 15% of the total land on the block. Other private, but ungrazed land amounts to another 5%. The area of private but grazed land was not given. As is well known, part of uncultivated private land is used for growing grasses. Thus the uncultivated private land would be more than 25% of the total private land. With better technology and extension the production of green forage can be increased. During my field trips I noticed a great deal of interest on the part of farmers in utilising their fallow lands for trees provided they could be assured of reasonable harvesting rights. There is an impression in the hills, as also in the plain districts, that there is a complete ban on cutting of trees from private lands, even if it is for bona fide domestic use, and not for sale. The District Officers in the hills were under an erroneous impression that the ban has been imposed by the Government of India through the Forest Conservation Act.

The Act however applies only to government forest lands and it restricts the powers of the state governments in making an order which would dereserve forest areas or permit utilisation of forest area for a

purpose other than afforestation. The governments could do so only with the Centre's concurrence. Thus the Act has nothing to do with private lands or to the rights of private individuals. Their rights are constrained by an Act of the State Government, called "The Uttar Pradesh Protection of Trees in Rural and Hill Areas Act, 1976". This Act too does not impose a blanket ban on the felling of trees on private lands. First, it does not apply to trees situated in urban areas (sec.2 (c)). Second, no permission is required for the felling of any tree with a view to appropriating the wood or leaves for bona fide use for purposes of fuel, fodder, agricultural implements or other domestic use (sec.5). Third, 27 species have been exempted from the purview of this Act by various notifications issued under sec.21 of the Act. These include popular species like Eucalyptus prosopis as also hill trees like Sesbania, Bakain, Robinia, Bhimal and Willow. However, sec.23 of the Act imposes a complete ban till 1991 on the felling of specified trees which includes Akhrot, Chamkharik, Oak, Sal, Pipal and Bargad.

During my field visits I was dismayed to discover complete lack of knowledge of these exemptions and clauses. Permission was being sought and given for use of private trees for domestic purposes. For instance, a retired major of the Army in village Khairda, Almora wanted to use 4 Tun trees standing on his private land for use in construction of his house. His application passed through several revenue and forest officials located in far away places and ultimately he got permission for only 2. As already stated, no permission was required for using Tun trees for domestic purpose. Many people prefer to bribe the patwari and not apply for any permission in order to avoid harassment.

It therefore follows that, to begin with, immediate action needs to be taken to make copies of this Act available to each revenue and forest official, to each Gram Sabha and Panchayat and publicise its provisions and exemptions through meetings, pamphlets etc. Whether any Act is necessary and whether it serves a positive purpose will be discussed now.

There are in general two types of restrictions imposed on private tree holders. First, under the Indian Forest Act, Transit Rules have been framed which prohibit an individual from transporting timber without valid permit from the forest authorities. Second, there are restrictions on harvesting of trees which have been imposed generally by enacting a separate law. Such a law was first introduced in UP in 1949 when there were reports that large scale felling of trees from private land had taken place because of escalation of demand during the second world war period, and also because the zamindars anticipated the abolition of zamindari uncultivated lands which were to be taken away from them and vested with the government/community. The Private Forest Act, however, banned felling of trees only from the lands entered in the revenue records as grove lands. It did not affect trees on other categories of land. Therefore even after the passing of this Act large scale felling of trees continued for several years from zamindari and talukdari areas.

The UP Tree Protection Act 1976 is wider in its scope. It covers all categories of private lands and subject to exemptions discussed above covers all categories of farmers too.

Establishing plantations has been traditionally a departmental activity till a decade back few trees were being planted by the people, except fruit trees. The restrictions imposed on harvesting of private trees and transportation of timber therefore helped the government in controlling illegal felling of trees from forest areas. In addition, the tradition of planting trees only on government lands led to a belief that people's interest in trees is only in felling trees for consumption and sale, and therefore they need to be restrained from doing so.

Similar provisions exist in many states of India. For instance, in Himachal Pradesh there are Forest Produce Transit Rules framed under the Indian Forest Act which makes it mandatory for every private individual wanting to sell his trees to get them affixed by the forests department. He also requires a transit pass without which railway authorities would not accept his produce. In addition, there

is the Land Prohibition Act according to which if the owner of trees wishes to harvest them, he should first get permission from revenue authorities, then get his trees marked by the forest officer and then obtain a transit permit from the Divisional Forest Officer. In between his application would be obviously routed through several subordinate officials. If the timber is covered under the Timber Trade Monopoly Act then the owner has to sell his timber to the forest department only.

In Madhya Pradesh, the villages which are situated in the vicinity of government forest boundaries are notified u/s 241 of the Land Revenue code. No land holder can fell trees from such an area without obtaining prior permission from the district collector. This requires prior inspection by a Forest Officer. The main purpose of the provision is to prevent illegal fellings in adjoining government forests under the garb of felling of trees from private land.

It may be mentioned here that a number of Committees, for instance the Khanna Committee in MP and the Ranjit Singh Committee which set up the NWDB, have recommended drastic liberalisation of such rules. The recommendations have, however, not been accepted by the State Governments because they fear initial large scale felling which is bound to be criticised in the assembly and in the press. Withdrawing restrictions would amount to admitting the fact that the Government was not able to implement its laws, and has legalised large scale deforestation.

How does one summarise arguments for and against the Tree Protection Act and other similar provisions of law? Two points need to be made. Firstly, such laws should not have been enacted at all and they have inhibited farmers from taking to tree farming. Secondly, wholesale revocation of such laws would certainly cause large scale deforestation in the initial stages. Government's credibility among the people being low, it would be difficult to convince them that restrictive laws would never be imposed again and therefore the contractors, middlemen and aware farmers would take advantage of the situation and make 'a fast buck'. This would be adversely commented

upon in the legislature and the press which may scare the Government into reimposing the ban. Therefore, practical wisdom demands that the switchover to total relaxation should be gradual. To begin with, more species could be added in the exempted categories of trees and Transit Rules may be relaxed in districts which have a low percentage of area under the management of the forest department. In the hills, inter and intra district movement of timber may be permitted but greater vigilance should be exercised in the Tarai to ensure that timber is not smuggled out of the hills. One step which could be taken immediately is to remove all restrictions in the border districts of Uttarkashi, Chamoli and Pithoragarh, as there is hardly any urban market in these districts. Such a strategy is not likely to invite the hostility from the critics and "environmentalists" who consider tree cutting to be sinful.

There is yet another problem in the hills which inhibits tree growing by farmers. Unlike the plains, consolidation of holdings has not been tried in the hills. The holdings of a farmer are situated in several places, sometimes even 10 to 15, which affects not only agricultural operations but also makes him dis-inclined to plant trees. If his parcels could be consolidated and given to him at one place he would be more favourably disposed to using a part of his land for tree plantation.

The opinion as regards desirability of consolidation in the hills is divided. Many villagers living at high altitudes where potatoes are a cash crop were opposed to consolidation as they fear losing such parcels where potatoes could be grown. In the lower hills and in the Tarai people were in general enthusiastic about consolidation. In village Bhatta, close to Mussoorie in Dehradun district, it was noticed that people had informally exchanged plots with one another so as to make their holdings more compact. They had subsequently applied to the revenue authorities for regularisation which is awaited.

Hills in All-India Perspective

The social forestry projects in India are now more than a decade old. It is now increasingly being realised that some objectives of the projects are in contradiction with each other, or are not realisable. For instance, private forestry was pushed so as to solve the fuelwood and fodder problem, but why should a farmer having irrigated holdings be concerned with the fuelwood requirements of the poor? What is wrong if his objective is income generation? Community forestry programmes were designed to build the capacity of the local bodies to undertake plantations. In actual practice, these have meant departmental afforestation on small isolated patches, which neither fulfill the consumption needs of the villagers, nor can be adequately protected. The department as well as the local body seems unwilling to take the responsibility of the protection. Total tree wealth in India has certainly increased, but have the trees been planted where they are needed ecologically, in the hills, eroded terrains and in tribal belts? As in the case of the green revolution, well-off farmers and regions have benefitted, rather than poor people and degraded soils.

The confusion about the objectives of the plantation and possible strategies to achieve these still continues. However, three different strands of thought can be discerned. First, there are many who would like to bring forestry as close to agriculture as possible. Just as farmers grow crops partly for consumption and partly for sale they would like forestry too to be domesticated and become a family occupation. Tree planting should be seen as an economic activity, rather than an ideological activity to be undertaken in a collectivised and altruistic spirit. The role of the government would be confined to research, extension, providing inputs and marketing. Those who advocate large scale leasing of forest and revenue lands to industry, people and cooperatives belong to this school of thought.

Several administrators and foresters are opposed to this. They point out that of the three important functions of forests - protective, welfare needs of the poor and production of timber - the first two

will be totally ignored by the industry and farmers, whereas the third one would be only partially met through quick growing exotics like eucalyptus to the neglect of long gestation species like teak, sal etc. India's wastelands whether with the forest or revenue department, are not always fit for commercial exploitation for timber, they should be utilised for thin vegetative cover with moisture retention and soil conservation as the primary aim. Secondly, meeting fuelwood and fodder needs of the tribals and the poor, is not an economic activity which can be undertaken with private or bank funds. These basic needs require government support just as construction of schools and hospitals does. Therefore both from the ecological and welfare point of view government forestry must continue as the dominant form of all afforestation programmes.

Then there are the academicians, environmentalists and activists who are opposed to both private and government forestry. According to them, privatisation is inequitous, and state ownership and development of wastelands is ineffective or industry oriented. (Shah, and Ballabh, 1987. Notwithstanding legal labels of ownership, India's wastelands including private uncultivated lands, have always been treated by the community as common lands (even private cultivated lands are used for common grazing once the crop is harvested). The challenge is therefore to evolve a suitable institutional framework which will increase rural communities stake in restoring the productivity of common lands, including forest lands, most of which in the hills and tribal areas is in the nature of a community resource. Community involvement has several advantages. First, governments have limited reach in the rural areas. Second, governments lack capacity for sustained local action over the long term. Third, centrally designed programmes are not suited to all types of local conditions and have little flexibility. Fourth, these create dependence on local bureaucracies for saplings, funds and timber, rather than building the confidence and capacity of local institutions. (Gibbs and Romm, Institutional Aspects of Forestry Development in Asia, 1982). We have already discussed elsewhere the problems in assigning individual property rights, either on land or trees, on common lands. There is therefore no escape from building up the capacities of Panchayats,

cooperatives and other small organisations of users for regeneration of India's so called 'wastelands' which are in reality common lands. Community involvement is not just an ideological rhetoric, it is a practical necessity if rural needs are to be met.

The prevailing confusion over policy would have been easier to sort out if the three positions mentioned above were clearly articulated and debated. It will perhaps take a few more years before the policy-makers and others interested in social forestry realise the implication of what exactly they are recommending. Till then, it is not uncommon to hear people advocating privatisation in the name of fuelwood and fodder shortages, which amounts to saying that as the government has failed to eradicate poverty, the task should be given to organised industry and multinationals! Equating wasteland development with tree farming on irrigated lands exhibits similar ambiguity in thinking.

An easy escape from the impasse and perhaps a 'middle-of-the-road' position will be not to see the three policy options as 'either-or' solutions. Why not have a combination of the three - private, government and community forestry? Is this not happening already?

Herein lies the rub. Government forestry is being tried not on forest lands, but on common lands. Artificial distinctions exist between social forestry and production forestry as if the latter need not be social. Private forestry is being pursued as a model for forest and revenue wastelands by advocating tree patta schemes and leasing for industries. Community ownership is being demanded on forest lands, because the colonial government illegally usurped these lands from the village communities in the 19th century. In other words, tenure and landownership is sought to be changed, without first fully establishing the superiority of one form of tenure to the exclusion of the other through empirical research. It is tempting to look for one single "ideal" solution, which may be non-existent today.

It is better sometimes to realise ones limitations. Very little authentic knowledge exists today about how and why the programme of social forestry affects rural people. Key factors which determine the

outcome of such programmes are yet to be identified, predicted and manipulated. Till then policy decisions are likely to be taken on the basis of hunches and untested assumptions. However, the scale and importance of social forestry would demand scientific knowledge beyond personal impressions. Till such knowledge is generated forestry should be pursued without attempting a radical change in tenure. That is, the policy should be to promote farm forestry on private lands, government forestry on forest lands and community forestry (through community efforts and management, but with government funds) on common lands. Tenures are creation of historical forces they reflect existing social and political realities and therefore it may be counterproductive to change them through administrative mechanisms.

Nowhere else is the policy of working within the framework of existing tenures as vital as it is in the hills of UP. As we have already noted, the four types of land - private, civil/soyam, panchayat and forest - are owned by four different groups, individuals, revenue department, Van Panchayats and the forest department. Although rights and obligations of the groups extend far beyond the legal boundaries as explained in Table No.1 - these are creations of custom and also of public policy - yet better results would be forthcoming if the panchayats, forest department and farmers are given the required support to afforest such lands where their authority and interest is the strongest, that is on Panchayat (including civil/soyam), reserve forests and private lands respectively. This will demand a substantial shift in the present funding pattern as also in the organisation structure.

1. The total non-private wastelands which needs to be put under green cover is 14,225 sq kms. Of this, 8,896, 4,671 and 658 sq kms is under the control of forest department, revenue department, and Panchayats respectively. If 300 sq km is taken as the total annual afforestation effort in the hills, it is at present distributed in the ratio of 25%, 70% and 5% over forest, revenue and Panchayat lands. Thus it may be seen that though

the bulk of the wasteland is with the forest (8,896 against total of 14,225), only 25% of the current programme is on such lands. It is recommended that it may be increased to 40% in a period of 5 years, including enrichment plantations.

2. The afforestation of revenue lands by the forest department is beset with problems, which have been discussed in this paper. Therefore this should reduce to 25% from the present level of 70%. The Blocks could share the forest departments work load on revenue lands.
3. Van Panchayats capability may be enhanced through legislation and administrative measures, so that they not only develop their lands, but also the revenue wastelands close to their boundaries. Gradually these lands can be merged with the Panchayat lands so that in about 15 years time the total area held by the Panchayats increases from 2,500 to 7,500 sq kms. Despite the three fold increase their share would still be only 15% of the total land mass.
4. Roughly 4,000 sq kms would be the area of private wastelands. These have remained totally neglected. High priority needs to be given to bring them under vegetative cover. This would require removing the legal restrictions regarding ownership and harvesting of trees, and providing positive initiatives by way of subsidies, extension and training so that family effort in regenerating wastelands of the hills is fully tapped.
5. Privatisation of revenue lands through the Tree Patta Scheme should be tried on a pilot scale,

in Jaunsar Bawar Chakra and Jaunpur blocks, where the people seem to be receptive to the idea. Its applicability as a major policy initiative in the hills could wait till most of the private wasteland already available has been afforested.

To sum up, there is ample scope for trying all three models forestry - government, community and private - in the hills, but the three agencies should work on their own respective lands, rather than attempt a radical change in land ownership or management, as is being tried or advocated today.

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