

**‘RESILIENCE AND THE VILLAGE FOREST COMMONS IN THE
CONTEXT OF ECONOMIC AND URBAN GROWTH, MANALI, H.P.,
INDIA’**

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ABSTRACT

The village forest commons in the Kullu District of the Western Himalaya forms an integral part of the local system of land use and land management. Recent development and expansion of the tourism industry and commercial horticulture has resulted in increased pressure on the forests in the area and therefore also on the larger social-ecological system. This analysis focuses on the institutions in the area that contribute to the management of the forest and specifically on the institutional responses to changes to the forest resulting from recent pressures. The state Forest Department, the *mahila mandal* (village women's organization), Joint Forest Management committees and village level rules-in-use are institutions considered that operate at various levels and contribute to the management of the forests in the Kullu District. Institutional responses such as the establishment of fuelwood depots and forest watches are assessed as to whether their actions promoting the resilience of the social-ecological system. This paper is a collaborative effort, primarily based on field research carried out in the area surrounding the town of Manali in Himachal Pradesh, India in the summer and fall of 1999. Three villages in the area were selected as case studies and the paper draws on the comments of local people recorded during semi-structured interviews.

INTRODUCTION: FORESTS, CHANGE AND RESILIENCE

The forests in the Kullu District of the western Himalaya form an integral part of the local village-centric system of landuse and land management (Duffield et al. 1998, Berkes et al. 1998, Berkes and Gardner (eds.) 1997, Duffield 1997, Ham 1995). Though the past two centuries have seen several external factors imposed upon this system, this discussion will relate to the latest and least organized of these forces, namely rampant growth of commercial activities in horticulture and tourism and the related urban services and functions. This recent growth has resulted in pressure on the forests in the area and therefore also on the complex social-ecological system in place which governs the management of the forests. In this respect, institutions, which can be thought of as one aspect of this social-ecological system, acquire a significant role. In the Kullu District, and in particular the area surrounding the town of Manali, village-based and state institutions interact to contribute to the management of village-use areas of the forest.

The idea of resilience and the inextricability of social and ecological systems has only recently begun to be explored within the literature (Folke and Berkes 1999, Holling and Sanderson 1996, Holling 1995), though the concept of resilience itself is not particularly recent. Institutions are one aspect of this social-ecological system where there exists the potential to respond to forces of change in ways that may either confer resilience or weaken the system.

Institutions, whether in reference to an organization, or in the sense of rules-in-use, are described by North's (1994) definition as "humanly devised constraints that structure human interaction. They are made up of formal constraints (rules, laws, constitutions), informal constraints (norms of behavior, conventions and self-imposed codes of conduct), and their enforcement characteristics". It is important to note that institutions are fluid over time; they are not static and therefore any description of an institution represents merely a snapshot in time. Resilience, in an ecological sense, is the ability of a system to absorb a perturbation and maintain its ecological processes. More generally, resilience is "the capacity of a system to buffer and survive disturbance" (Folke and Berkes 1998:3). The difficulty is that resilience is a relative concept; and there are no clear operational procedures to assess resilience.

According to Folke and Berkes (1998:4) the social-ecological system is an open system, and is therefore subject to influences such as "population growth, technology, effects of capital markets and trade. Political change occurring outside the study area and the ubiquitous pressures of globalization may also have major influences on the system". They propose that the functioning of institutions can buffer the social-ecological system against various pressures and driving forces. Hanna et al. (1996) present the complimentary idea that institutions must recognize, interpret, relate, and we would add respond, to ecosystem dynamics in a fashion that secures the flow of resources and ecosystem services. Using these two ideas as a basis, institutional responses to development pressures can be assessed as to whether they are increasing the buffering capacity of the forest system, as a linked social-ecological system, and therefore promoting resilience.

STUDY AREA

The paper and the analysis within is based on research conducted in the summer and fall of 1999 in the Manali area of the Kullu District of Himachal Pradesh, India in the western Himalaya (see Figure 1). Over a three-month period, time was spent in the town of Manali and also in three villages in the surrounding area: Prini, Solang, and Old Manali.

The Kullu Valley enjoys a temperate monsoonal climate, marked by cool snowy winters and relatively warm wet, monsoonal summers. The valley lies within the Pir Panjal Range of the Western Himalayas. The northern part of the Kullu Valley is close to the headwaters of the Beas River and in this area the town of Manali is the commercial focus, situated close to the river at an elevation of 2050m. Numerous small villages dot the slopes of the valley, and are usually located on spurs formed by the streams (*nallahs*) that run into the Beas River (Berkes et al. 1997). The immediate valley-side slopes rise an additional 2500m to approximately 4500m and set back from these slopes are major summits in the region which rise to 6500m (Berkes et al. 1997). Deodar forests, dominated by indigenous cedars and firs, are one of the most visually noticeable features of the area, but the mountain slopes also support broad-leaved forests, meadows, pasturelands and terraces.

The people and the culture of the valley are identified by the term *pahari* (translated as “of the hills”) (Berreman 1970 as quoted in Berkes et al. 1997). Though Hindu, the culture is distinct from the North Indian Plains culture and tribal Hindu culture. Social structure in the area is based on the caste system; there are social divisions between the numerically dominant Rajput caste and the scheduled caste (or ‘untouchables’)¹, though these are more pronounced in the villages than in the town of Manali. Those belonging to the Rajput caste were historically, and are still, the primary landowners in the valley, though it is now uncommon that a household does not hold any land. Over the last 50 years, previously landless people have been allocated *natour* lands by the government through a series of land reforms which appropriated marginal common land for distribution, though the practice was discontinued in 1990 (ODA 1994).

FIELD RESEARCH METHODS

Field research was grounded in PRA philosophies and techniques (Chambers 1997), and specifically in the idea that research is a creative process, where the expertise is embedded in local people (Archibald and Crnkovich 1995). Thus, the perspectives of local people were and are central to the research. Semi-structured interviews proved to be the most utilized research technique, however other techniques from the PRA toolbox were also used. Transect walks were employed to provide orientation to the area, participant observation occurred throughout the research process, some direct participation in village activities took place, and stories often became a part of the semi-structured interviews. Local secondary resources were accessed and interviews were conducted with Forest Department officials, business and hotel owners and residents in Manali, and people in several villages. Varying both the methods and the people who

¹ Aside from the Rajput Caste and Scheduled Caste, there are Scheduled Tribes (Gaddi and Gujjar) peoples in the Kullu District (ODA 1994), as well as Tibetan refugees and Nepalese and Kashmiri migrants.

were the source of insight in the research process (Mitlin and Thompson 1995) served not only to help in the complicated and often frustrating process of gaining an understanding of complex local circumstances, but also to help ensure the validity of information through triangulation.

Preliminary interviews with the president (*pradhan*) of the women's organizations (*mahila mandal*) in 29 villages and in the town of Manali were undertaken to gain an overall understanding village perceptions of how the forest was being managed and the extent of village level involvement in forest management. The *mahila mandal pradhans* were chosen as a source of information about the forest and management practices because forest products are an integral part of the daily activities of women and the forest has been a major focus for some of the initiatives of local *mahila mandals* (Ham 1995, Davidson-Hunt 1995a). Based on these initial interviews, three villages: Prini, Solang and Old Manali (Figure 1) were selected as case studies.

Relative geography, access and village dynamics in relation to the forest were key considerations in the selection of case study locations. Prini is located several kilometers south of Manali on the opposite bank of the Beas River, but there is 'road' access to the village. There are also several large hotel developments close to the village. The village is the site of a Joint Forest Management (JFM) project initiated by the Forest Department and an initial visit to the village happened to coincide with a JFM meeting. The *mahila mandal* in Prini, though active in protecting the forest previously, has become fragmented due to political differences, making their participation in JFM as a group problematic. These circumstances suggested that Prini would be an interesting case study and also perhaps allow comparisons with Solang village where another JFM project was underway.

The JFM project in Solang that had received such praise from the Range Forest Officer in Manali suggested that Solang might be a potential case study. In addition, Solang village is a considerable distance by road from Manali and access to the village is by footbridge and path only. Although it is far removed from the urban infrastructure of Manali, across from the village is a winter ski hill, which is also used for picnicking and paragliding in the summer months, and in this sense urban growth has impacted this area. Old Manali (or Manaligarh) was chosen as a case study because although it was initially spatially distinct from Manali, the growth of the town in recent years has spilled into the village. The road in Manali continues up into Old Manali and has begun to transform the parts of the village that are close to the road. The ideas of the *mahila mandal pradhan* in Old Manali regarding the improvement of the forest also played a role in selecting the village as a case study.

A total of 137 interviews were carried out in the three villages. The interviews in Prini, represent approximately 80% of households. In Solang, the interviews represent approximately 70% of households and in Old Manali, the interviews represent approximately 25% of households. Table 1 shows the breakdown of interviews and households in each village. Interviews were done on an opportunistic basis at variable timings throughout the day and an attempt was made to not only speak to roughly an equal number of men and women (Table 1), but also to speak to people of a range of ages and therefore with differing historical perspectives. Local people were asked about their use of forest products, and their perspectives on the health of the forest in the past and in present day. People were asked to offer their opinions as to how the health of the forest had changed, what kinds of activities or actions were responsible for

those changes, and what could be done to address any negative changes. Villagers were questioned as to their awareness, participation and perceptions of JFM to date. Questions were also asked regarding income from other than agriculture and horticulture, how and whether tourism had altered lifestyles, and whether changes had occurred in the village as a result of tourism.

PERSPECTIVE

In discussing the role of institutions in the management of the forests and how they have responded to various perturbations, as much as possible the perspectives of local people themselves are used. Nevertheless, it must be made explicit that interviews relied exclusively on the abilities of a capable and reliable local translator who had participated in previous research in the area. Interviews and excerpts from the interviews used throughout this paper are therefore not literal quotations from villagers. They have been subject to interpretation by a translator and by the interviewer while being recorded in the field, but they do reflect the sentiments of the people interviewed as accurately as possible. In some instances comments from villagers directly addressed the role of institutions, and in other cases researcher observations and interpretations were used to clarify issues. Every attempt was made to distinguish the instances where the analysis draws upon researcher impressions and experiences and interpretations of people's comments. In these instances, we accept full responsibility for interpretation of observations and information.

Diversity and complexity are present at all levels in the Manali area and at the institutional level, the local context varies even between villages in close proximation. So, although comments are made regarding institutions that may be present in areas throughout the state of Himachal Pradesh, and in some cases throughout India, local context precludes sweeping generalizations and confines the geographical area of the discussion to a few villages surrounding the town of Manali. The institutional responses that form the basis for discussion are selective examples and are not intended to reflect the full complexity of institutional structure and function, and as mentioned previously, institutions are dynamic, so this is a discussion of institutional responses at a particular point in time.

BACKGROUND

THE EVOLUTION OF FOREST MANAGEMENT IN THE KULLU VALLEY

The formalization of forest management practices (i.e. forests brought under state ownership and control) took place in India in the form of the Government Forest Act 1865, which was quickly replaced by the Indian Forest Act 1878. The nationalization of India's forests was couched in concerns regarding the supply of timber for development in India and in particular, for the expansion of the Indian Railway (Gadgil and Guha 1993). Up until recent times, the primary focus of forest management has been on sustained timber yields and conservation has been a secondary concern (ODA 1994). Prior to the colonial era, local rights to forests have not been clearly documented (Guha 1989, Davidson-Hunt 1995b), but it does seem clear that the forests were never open-access; rights were distributed among lineages within

groups. Thus, current forest management by the Forest Department was instated over an existing system of forest management by local villages (Davidson Hunt 1995b).

The structure of forest management under the 1878 Indian Forest Act was based on the creation of classes of forests, based on their timber utility. Forest settlements carried out in the late 1880's under the purview of local Forest Department Officials.

“Reserved forests were created in areas remote from habitation where there were limited or no rights, or in areas close to the villages where there was sufficient other forest land available for use by local people. Demarcated protects forests (DPF) were generally those remote from habitation often containing valuable timber species such as deodar (Cedrus deodara); rights were clearly defined in these forests. More rights were permitted in the less commercially valuable portions of these forests. DFP differed from undemarcated protected forests (UPF) in that grazing rights were clearly defined and the land could not be alienated for cultivation. UPF's close to habitation were considered to be a resource available for cultivation and a supply of grazing and tree products.”

(ODA 1994:6)

In contrast to other areas of India, the forest settlement process in the Kullu District did not result in the termination of rights to the forest, but rather their acceptance and formalization (ODA 1994). Under the Anderson settlement report of 1886, only limited areas of forest were placed in the category of Reserved forest; the greatest proportion was defined as protected, primarily in recognition of the importance of the needs of local people (ODA 1994). Though Anderson was obligated to operate under the framework of the Act, the compromise was that DPF were divided into first and second class protected forests. First class forests tended to be nearer to the villages and/or contained more valuable timber and had more restricted rights. Anderson also used the Revenue Settlement and the rights recorded therein as justification for upholding local rights to the forest (Davidson-Hunt 1995b). However, forest rights were vested in the individual, not the village, making it difficult for village to regulate the activities of its members and forest rights also became tied to land ownership, so that anyone who did not own land was not guaranteed forest rights (ODA 1994). Although the result was a diminished reserved forest in the Kullu district and a larger forest area with recorded village rights (in comparison with other parts of India), responsibilities for management, regulation and enforcement were nevertheless appropriated by the state under the Indian Forest Act of 1878. This is the *de jure* situation in the present day.

Presently, in addition to the formal legal management context, there are less formalized, yet critical principles guiding Forest Department operations. The National Forest Policy (NFP) of 1988 shifted priorities toward environmental conservation and protection, meeting fuelwood, fodder, minor forest products and small timber needs of rural and tribal populations and was a departure from prior forest policies that focused on meeting industrial and commercial forest product needs and maximizing revenue (Sarin 1995). The Joint Forest Management (JFM) circular issued in 1990 by the Government of India was a policy instruction that defined an operational and institutional framework for the 1988 National Forest Policy. Neither the policy

nor the circular goes as far as to delegate any management or regulatory responsibility to local people, but they are an important shift in attitude and approach to the management of the forests.

At the local level, the Joint Forest Management Committees that are being formed as a result of the policy instruction, the *mahila mandals* (village women's organizations), and village rules-in-use are examples of more informal institutions important in the *de facto* (actual, as opposed to what is written in law) management of the forest. These institutions will be detailed as the discussion progresses.

FORCES OF CHANGE IN THE PAST THREE DECADES

Commercial horticulture and tourism are not a new phenomenon to the Kullu District of Himachal Pradesh, or to the town of Manali. Orchardry has played a small role in the economy since the arrival of the British in the 1870's (Gardner 1995), and the Western Himalayas have long been a destination for a number of tourists and pilgrims (Sarin and Singh 1995). However, in the past three decades, several factors have combined to intensify the importance and influence of these commercial activities.

Improvements in communication and in transport, including paved (to some extent) and relatively reliable motorable roads, have improved the accessibility of the area to distant markets and also made the area more accessible to the general population. Electrification, improved telephone systems, television (and satellite capability) and the Internet have been instrumental in opening the area to global influences and have been key factors in subjecting the area to outside forces of change, and as such have intensified the importance of commercialization. The road through Manali has become a major national road link (National Highway N-21) and crosses Rhotang Pass *en route* to the Districts of Lahaul and Spiti and further to Ladakh and Kashmir. This accessibility has made commercial provision and the supply of goods and services more economically viable both for commercial agricultural and horticultural products and also for products related to the tourism industry (Sandhu 1996). As one villager in Solang remarked,

In the past, if salt were needed, people would have to walk all the way to Mandi. Now people can go anywhere and even fly to Bombay in one day.

The road has also directly facilitated a greater number of visitors to the area. Conflicts in Kashmir have caused the road to also become strategically important as a main transport route for troops and supplies to the front; during the summer and fall of 1999, convoys carrying troops and supplies were a daily source of traffic delays.

Aside from conferring strategic importance to the National Highway, the conflicts in the popular tourist destination of Kashmir beginning in 1989 had implications for the tourism industry. Escalations in the early 1990's resulted in the area becoming essentially closed to tourists, consequently directing a flow of tourists to the Kullu area (Sandhu 1996). Economic prosperity and the growth of the middle class of the Indian population have also brought the costs of a Kullu vacation within the reach of an increasing number of Indians (Sandhu 1996).

Clever marketing and subsidies have supported both tourism and the commercial agricultural and horticultural industries. The Himachal Pradesh Tourism Development

Corporation acted as a pioneer in the development of hotels, “luxury” buses and restaurants and the Himachal Pradesh Finance Corporation and the Department of Tourism have in the past offered direct economic incentives for hotel and restaurant building (Singh 1989). The apple products of Himachal Pradesh are marketed throughout India and are perhaps the most visible horticultural products, however, markets have also been created for the Kullu Valley’s off-season vegetables and the area is a staging point for the distribution of potatoes to other states. Local people associate the vegetable markets with tourism and recognize the trade-offs of expanded markets,

Farmers are getting good prices for their fruits and vegetables because of tourism, but they also must pay higher prices themselves.

Population growth in general has occurred throughout the area, in addition to the population growth in Manali attributable to in-migration. This has both heightened the importance of tourism and commercial activities as well as directly put pressure on the forests. Much of the visible manifestations of the recent boom in tourism and commercial horticulture are evident in Manali. The number of guesthouses and hotels has increased dramatically in the past two decades in the rush to provide accommodation for the seasonal visitors and the number of shops to supply both souvenirs and handicrafts and other provisions has similarly expanded (Cole 1999). Manali has seen a concurrent increase in services such as medical facilities, restaurants, and taxis and in urban functions such as pressures from solid wastes and sewage.

CONSEQUENCES FOR THE FORESTS AND FOREST PRODUCTS

The consequences of the expansion of the tourism and commercial horticultural industries are not restricted to the urban area of Manali; they are also felt in various ways in the surrounding areas. Though it is not the intent to diminish other consequences, this discussion relates to the forest resource and is therefore concerned with some of the consequences for the forest. The most important way that tourism and commercial horticulture have impacted the forest resource, according to villagers in Prini and Old Manali relates to the illegal felling of trees. Over the past two decades, trees have been felled to supply different needs, according to local people. When asked about how village forest use areas had changes over the past three decades (or as far as they could remember) and what the reasons were for those changes, local people usually listed several factors which they considered as important to changes to the forest. The responses depicted in Table 2 are some of the most common spontaneous reasons given. Many mentioned illegal felling as a general problem, but this is a general comment and encompasses the specific reasons for which the trees were felled. Those villagers who elaborated on the subject indicated that in earlier years, timber was in demand for boxes in which to transport apples. Multiple sawmills in villages where previously only one had existed or none at all became the norm and one sawmill owner indicated that before the use of local timber for apple boxes was banned in 1985 or 1986 the sawmills were running 24 hours/day. In recent years, villagers indicated that trees have been felled to supply the construction boom in the Manali area to build guesthouses and hotels;

Manali town is built from the forest of Old Manali.

As the hotels have increased, the forest has decreased.

Local people also indicate that an increase in the number of houses and structures being built, which villagers attribute to population increases, has significantly affected their village forest use areas (Table 2).

The changes to the forest as a result of these activities do not appear to be significant in terms of area under forest cover. Photographic documentation shows that the area under tree cover has not receded to any significant extent in the past decades (Duffield et al. 1998). In some areas, the boundary of the forest has in fact expanded (Gardner et al. 1997). Changes have taken place, however, in terms of the density of the forest areas, species compositions, age class structures, and the accessibility of useful species to any one community (Duffield et al. 1998, Duffield 1997). Illegal felling has been concentrated in village forest use areas that are used extensively by villagers. It is the changes to these areas and the associated changes to the availability of the forest products that are collected and harvested from the village forest areas that are a source of local concern and which have prompted institutional responses. To paraphrase the sentiments of one woman from Old Manali,

There used to be so much broken and dead wood in the forest. Now, from a distance, the forest is still there but when you go, there is nothing, no broken branches. The needles from the trees used to be two feet deep on the forest floor and now you end up bringing mud as well as needles.

To understand why such changes would evoke institutional responses, it is helpful to have an idea of the role of forest products in the livelihoods of villagers (Ham 1995 provides comprehensive discussion). At the level of basic needs, survival in winter requires heat. Though kerosene and gas are also widely used for cooking, in the winter, village homes are heated exclusively by fuelwood collected from the forest. Timber provides furniture and house building and renovation materials. The fallen needles from coniferous trees are collected as bedding for cattle, which is subsequently mixed with manure to provide fertilizer for agricultural crops and orchards. Non-timber forest products also play a significant role in the agrarian livelihood. Grass, collected from forests and from fields is fodder for the cows that produce the manure for the fields. Medicinal plants, herbs, and wild vegetables are used in the household and sometimes can be a source of cash income.

ANALYSIS OF INSTITUTIONAL RESPONSES

Both village-level and state institutions contribute to the management of village use areas of the forests in the Manali area. As explained previously, the purpose of this discussion and analysis is to examine whether institutional responses are in fact helping to buffer the forest system from development pressures, thereby promoting the resilience of the forest system. The state Forest Department is discussed as an institution in the sense of a formal organization. The village *mahila mandal* will be explored as an institution in the sense of an organization, but as one that is decidedly less formal and operating at a different level than the Forest Department. Joint Forest Management will be discussed not only as a policy response on the part of the Forest Department, but also as a newly established village institution in the organizational sense, with

formal recognition. Comments will also be made regarding some of the informal village rules-in-use. A focus on these particular institutions reflects the reality of the involvement of both government and non-government institutions in the management of the forests.

THE FOREST DEPARTMENT OF HIMACHAL PRADESH

Nature of the institution

The Forest Department is a government institution with a hierarchical organizational structure (Figure 2). As mentioned previously, the Forest Department has *de jure* rights to the ownership and management of the forests and operates within the legal framework set out by the current piece of legislation, the Indian Forest Act 1927 with the associated Forest Conservation Act 1980 and the Forest Conservation Rules 1981. In addition, the National Forest Policy of 1988 and the Government of India circular of 1990 regarding Joint Forest Management guide the activities of the Forest Department. The state Forest Department in Himachal Pradesh created its own JFM policy in 1993, which outlines the structure of JFM committees at the village level.

Institutional Responses

The Forest Department in Himachal Pradesh does not permit the felling of trees without permission. Even villagers who are rightholders (who have a right to timber for the purpose of house building or repair, known as a Timber Distribution or TD right) must make an application to the Forest Department and prove need in order to have a tree allocated to them. The growing demand for fuelwood in the urban area of Manali and surrounding villages as a result of a growing influx of both permanent and seasonal residents and the illegal felling of trees to supply the construction boom in Manali has elicited several responses from the Forest Department.

The Forest Department Depot

A depot to provide fuelwood (and timber) was established by the Forest Department in Manali approximately 10 years ago. The depot was a response to increasing demands for fuelwood and timber by a growing urban population (partially due to the banning of local timber for producing apple crates²), and a growing cash economy that made purchasing fuelwood feasible for a growing number of people. The depot was important primarily because it provided an alternative source of fuelwood. There were several implications of this alternative source of fuelwood. Availability of fuelwood from the depot contributed to the decrease in demand for fuelwood brought into Manali for sale by villagers and was also an economic disincentive to villagers who were involved in this practice. It was suggested that the depot prices were better,

Villagers were just bringing small bundles for Rs. 80 and the depot was cheaper.

One woman who admitted that she used to sell fuelwood in Manali supported this idea. She indicated that she stopped doing so because it made better economic sense to pursue other income-generating activities. Indirectly, the existence of the depot also helped to support the efforts of the *mahila mandals* of the area who had banned the sale of fuelwood by villagers in Manali. So, essentially the establishment of the depot was an act that helped to buffer the forest

² Several people interviewed said that they used to use the wastewood from sawmills for fuelwood prior to the ban on local timber for apple crates.

system from pressure by contributing to the protection of the forest resource. In terms of meeting some of the demand for timber, however, the depot was ineffective because timber prices at the depot were exorbitant in comparison with black market prices.

'Strengthening' the Timber Distribution System

On the surface, 'strengthening' the TD system under which timber is allocated to village rightholders for construction or repair of houses could be interpreted as a measure that would contribute to the buffering capacity of the forest system. The Forest Department has imposed further limitations on the amount of timber that a villager is entitled to over the past decades and the requirements to demonstrate need have become more stringent. Villagers in Prini and Old Manali indicate that they are no longer allowed to claim a broken or fallen tree in the forest; instead, all timber must be allocated through the TD system,

Twenty years ago if a tree was broken or fallen, no permission was required to take it; it used to be that making a mark on the tree indicated that it had been claimed. Now the Forest Department takes that tree and gives it to someone else as TD timber. This creates problems.

The difficulties with this response are twofold. First, strengthening the TD system reinforces responsibility for management as the domain of the Forest Department, further alienating responsibility for management or monitoring from local villagers. Secondly, strengthening the TD system places further emphasis on formal aspects of the process such as filing forms and pleading cases to Forest Department officials. This makes the application process more accessible to certain villagers and makes it vulnerable to corruption,

TD rights are being misused. If someone is uneducated, another can apply for TD entitlements in his name.

The Forest Department gives some people trees and yet others are not even allowed the dry and broken ones. They take money from the rich and allocate trees but poor people's requests are always scrutinized closely.

In these respects, strengthening the TD system has not contributed to the capacity to buffer the forest system.

Corruption?

The instances of local people telling stories related to corruption within the Forest Department are simply too numerous to be discounted. If true, such corruption would indicate an institutional failure on the part of some members of the Forest Department. Forest officials themselves also acknowledge *past* corruption. Villagers have indicated that individuals in the Forest Department have received baksheesh (bribes) and in return have ignored individuals who sold the TD timber they were allocated, or felled more trees than were allocated, or who were simply cutting down trees with no pretense of applying for TD timber. The system became and may still be (though villagers disagree on this point) corrupt to the extent that those who could not afford to pay baksheesh to Forest Department officials were not having their applications for TD timber processed. This response on the part of the Forest Department definitely undermines

the buffering capacity of the forest system because it makes the Forest Department complicit in the illegal felling of trees. Perhaps more importantly, corruption damages the credibility of the Forest Department and reinforces any justifications on the part of local people who are felling trees. As one man from Old Manali explained,

How can the Forest Department tell people to stop cutting green trees and smuggling when they are involved in the business? It is laughable when they try to tell people not to harm the forest.

Joint Forest Management as a Forest Department Policy

Essentially, adopting JFM as a policy and initiating JFM projects is an institutional response to the illegal felling of trees, to an inability on the part of the Forest Department to control the illegal activities, and to growing population pressures which have heightened pressures on forest areas. The principles of JFM represent a fundamental shift for the Forest Department towards a more participatory approach to the management of the forest.

On paper, this is a progressive institutional response and it has the potential to move in the direction of reestablishing some responsibility for the care, protection and management of village-use areas, though the Forest Department must still operate within the legal framework that formally invests them with these responsibilities. In terms of internalizing and functioning in ways that reflect the philosophies of JFM, Forest Department officials are enthusiastic about the policy and they are realistic regarding the difficulties that are involved in operationalizing the policy. The Range Forest Officer in Manali, for instance, would like to have a team of male and female Forest Guards³ who would facilitate JFM projects in various communities.

Despite these progressive attitudes, paternalistic attitudes still persist and while they do, they will continue to hinder the effective implementation of a participatory policy such as JFM. Forest Department officials still speak in terms of ‘sensitizing’ villagers and providing them with ‘education’ with respect to the value and importance of their forests. This attitude flies in the face of previous research (Duffield et al. 1998) experiences where local people consistently demonstrated their knowledge in regards to the importance of the forest. Duffield et al. (1998) demonstrated that local people were very much aware of their environment and provided a variety of sustainability indicators, many of which were linked to the forest. Throughout the interview process in 1999, many suggestions were offered by local people regarding strategies to protect and enhance the health of the forest. Continuing to insist that villagers require ‘education’ suggests that perhaps the Forest Department is not truly listening to the views and opinions of local people regarding their forests. Thus, adopting JFM is a positive institutional response, but JFM is a new policy to the Manali area and it remains to be seen as to whether the philosophy and fundamentally participatory approach will truly become a part of the workings of the Forest Department.

³ Currently, there are no female Forest Guards in Manali Range.

THE MAHILA MANDALS

Nature of the Institution

The *mahila mandal* or village women's group has its origins in the 1952 Community Development Programme, but was strengthened by the vision of Indira Gandhi to empower women in village India and facilitate women's involvement, structurally and economically in rural life (Davidson-Hunt 1995a). Thus, it is an institution that has been imposed on communities in the sense that the *mahila mandal* was developed at the level of the central government and is administered as a government program (Ham 1995, Davidson-Hunt 1995a), but the flexibility in terms of the purpose and objectives of *mahila mandals* has meant that in some cases the organization has been adapted to the local needs of the village. Women's role as primary collectors of forest products and their consequent concern for the health of village forests resulted in the *mahila mandals* in many villages taking a proactive role in the protection of these areas (Ham 1995, Davidson-Hunt 1995a). In the Kullu District in particular, the *mahila mandals* are active in many aspects of village workings. Preliminary research by Ham (1995) and Davidson-Hunt (1995a) suggested that in perhaps 15-20 villages in the area, the *mahila mandal* was active in the protection of the forest. However, almost all *mahila mandals* in the 29 villages surveyed in the summer of 1999 indicated that they were active to some degree in the protection of the forests. The *mahila mandals* have the official support of the Forest Department for their activities related to protecting the forest.

Institutional Responses

The responses of the *mahila mandals* to illegal tree felling and decreasing availability of fuelwood as a result of the expansion of commercial horticulture and tourism have generally contributed to the buffering capacity of the forest system by promoting the protection of their forest areas. Women began to experience difficulties in procuring fuelwood and trees began to disappear from their village use areas. Previous research by Ham (1995) and Davidson-Hunt (1995a) had established that the *mahila mandals* in the Manali area reacted by monitoring the extraction of timber from the forest areas through patrols and confiscation of illegal timber, by instituting and attempting to enforce a ban on the sale of fuelwood outside the village, and by discouraging the practice of lopping branches. In addition, *mahila mandals* also began to exclude women from collecting fuelwood in their forests unless they had rights to do so, which had the biggest implications for women from Manali town who did not have rights to collect fuelwood in any forest,

People from the bazaar used to come here to collect fuelwood, it was allowed. When the mahila mandal became established, we stopped them from coming because there was less and less fuelwood available.

Effectiveness of the Responses

The effectiveness of each of the institutional responses of the *mahila mandal* is arguable, given that membership and support from other villagers varies from village to village and also that in all cases (with the exception of the practice of excluding women from other villages), the *mahila mandal* has been acting in concert with other institutions such as the Forest Department. In addition, other factors have fed back into the system to reduce pressure on the village forest areas over time: the construction boom has slowed down resulting in reduced demand for timber,

the Forest Department has started to enforce some of its rules in a more even-handed manner, and recent court cases against persons caught illegally felling timber have acted as a deterrent,

Last year the Forest Department took someone to court for illegal felling and this court case has made an impression. People think that it has made a difference and is deterring smugglers. People are scared to smuggle now.

The point is that it is difficult to attribute the fact that the sale of fuelwood in Manali has effectively been halted and the decline in the past 1-2 years in the illegal felling of timber to the efforts of the *mahila mandals* alone,

The sale of fuelwood doesn't happen anymore because of the efforts of the Forest Guard (who is strict), the mahila mandal and the panchayat.

The mahila mandal is trying to protect the forest and people are afraid of them, but they are not that strict. People are more afraid of the Forest Department.

Nevertheless, many local people and Forest Department officials acknowledge the positive influence and dedication of some of the *mahila mandals* in the area.

Adapting Responses to Local Circumstances

Aside from the issue of effectiveness, the responses of the *mahila mandal* have not only contributed buffering capacity of the forest system, but these responses are also adapted to the particular situation in each village. For instance, in the village of Solang, because of its relative isolation and lack of road access and associated difficulties with transporting timber, illegal felling by villagers to supply the construction industry was not a concern. The *mahila mandal* was concerned only with policing outsiders; villagers were not subject to rules that prohibited the felling of trees. Illegal felling by the villagers themselves was socially sanctioned within the village, regardless of Forest Department regulations,

People cut trees for their own needs; illegal felling is not an issue.

There are no problems with people from the village cutting trees and selling sleepers [timber], they are just bringing what they need for themselves.

In contrast, Prini and Old Manali are both accessible by road and villagers are subject to incentives created by the black market for timber. In both these villages, villagers and outsiders are subject to *mahila mandal* rules prohibiting felling of trees. Old Manali is also adjacent to Manali town and development is now spilling over into the village. In Old Manali, the problems associated with illegal felling have become such a concern that the *mahila mandal pradhan* (president) aspires to expand the membership of the *mahila mandal* so that it may become effective in protecting the forest and working towards a healthier forest. The *mahila mandal pradhan* has specific ideas about how the restructuring could take place, with the goal in mind that one woman from each household in the village would become a member of the *mahila mandal*.

JOINT FOREST MANAGEMENT COMMITTEES

Nature of the Institution

Joint Forest Management (JFM) initiatives have their origins in experimental arrangements that were undertaken by some innovative Forest Department Officials in West Bengal (see Poffenberger and McGean 1996 for a discussion of the roots of JFM). These experiments evolved into a national policy directive and almost all states in India have followed the lead of the national policy and adopted resolutions of their own. The intent of the policy is to promote participatory forest management involving local people. The involvement of women is a specific priority in the policy, and the provisions for women's participation have come under great scrutiny in the literature (Agarwal 1997, Chatterjee 1995, Sarin 1995). Manifestations of JFM at the village level take the form of JFM committees. The structure of these committees is prescribed by the state policy resolution, so the JFM committee structure established by the state JFM policy is in this sense an imposed institution. Joint Forest Management Committees are a new institutional phenomenon in the Kullu District and even more so in the Manali area (interview with the Range Forest Officer, Manali). In Prini and Solang, two of the villages that were the focus for field studies, JFM initiatives are underway.

JFM Committees as "Works in Progress"

As mentioned previously, the adoption of JFM is not only an institutional response on the part of the Forest Department, but the way in which the policy is being implemented and the extent to which JFM, as an imposed institution, is adopted by people within the village may or may increase the capacity of the forest system to buffer against pressures from commercial horticulture and tourism. Two considerations emphasized by Lele (1998) in his analysis of JFM are relevant in this context. They relate to two underlying empirical assumptions of JFM: that the pre-JFM property rights regime is either one of full state control or open access, so that there is a "blank slate" on which the new regime may be written; that the "community" exists as a cohesive body. Neither of these assumptions holds true in the villages in the Manali area (see Berkes and Gardner, (eds.) 1997) and this is why the implementation of JFM by Forest Department, which in turn influences the extent to which villagers adopt JFM committees, is important. Sensitivity to local context and adaptation of JFM as required *could* result in village level institutions that are able to respond positively to externally imposed pressures.

JFM initiatives are still in the very early stages in the Manali area, so it is difficult to assess with any confidence how well the Forest Department is working with the village to craft JFM committees that are able to function effectively in the overall interest of the local people. Nevertheless, it is still possible to make some comments of a preliminary nature.

Joint Forest Management in the Village of Prini

In the village of Prini, the Forest Department has encountered difficulties in overcoming divisions within the community. The divisions relate to issues of equity amongst villagers and also to divisions of a political nature. Previous research has also demonstrated that villages are by no means homogeneous (Berkes et al. 1998, Davidson-Hunt 1995a), but in relation to Joint Forest Management in Prini, the comment was made:

Rich people go to the [JFM] meetings; we are poor.

The *mahila mandal* in Prini fragmented over political differences and no longer appeared to be active. The *mahila mandal pradhan* had not been calling the members to go to the JFM meetings,

We were invited to the meeting but because only one Forest Guard came, we did not go to the meeting. We will go when the whole Forest Department comes.

In addition, although it is a requirement of the state JFM policy, no women or representatives from economically disadvantaged households were members of the JFM executive committee in Prini. The Deputy Range Forest Officer asserted that this was to be addressed in the near future and the executive committee would be expanded to meet the requirements of the policy. In the short time spent observing the JFM process, two meetings were postponed and the meeting that did take place was attended by 11 men and chaired by the Deputy Range Officer. The meeting was supposed to be for the executive body, however when very few of the executive committee members attended, the meeting was opened to any wishing to attend. Participation in general has been problematic: although 46% of people interviewed indicated that they themselves or someone from their household had attended at least one JFM meeting, 29% of people interviewed were unaware of the Joint Forest Management project in the village.

Joint Forest Management in the Village of Solang

In Solang, despite praise from the Manali Range Forest Officer, on closer inspection there were also difficulties with women's participation. Although three women are recorded as being members of the JFM executive committee, only one woman (the *mahila mandal pradhan*) was actually aware that she was on the executive. Women and men attribute the unwillingness on the part of women to participate in JFM meetings to a variety of factors,

If asked, no I wouldn't want to be on the executive committee. I don't know much; I am not educated, and not intelligent enough. I have time, but others can sit on the committee.

Mostly the gents are participating. I think it is because of our culture. Women think that men are more intelligent and when women speak, no one listens. They are also not as interested.

*Women are "participating" but they are not talking a lot. They just sit and listen. Sometimes they are asked for their opinions. Some are not educated and they feel nervous. They are nervous of their Hindi isn't precise. In discussions with the Forest Guard, a mix of Hindi and English is sometimes used. In Indian villages, women are involved with the forest and we **need** their opinions . . .*

General participation in JFM meetings was similar to Prini, but awareness of JFM, appeared to be much higher in Solang. Fifty % of the people interviewed indicated that they themselves or someone from their household had attended a JFM meeting, and only 4% of those interviewed were unaware of the JFM project in the village. During an interview with the JFM *pradhan* in Solang it was suggested that the level of participation could be attributed to the

format of the JFM meetings. According to the *pradhan*, all JFM meetings in Solang were open to the whole village; the JFM executive committee did not meet separately. During the field season, the JFM meeting that was scheduled to take place in Solang was cancelled.

Comments from a few villagers in Solang suggest that the shepherding families in the village are unhappy with the closure of many areas to grazing and they feel they were not asked their opinion on the matter. However, there are conflicting reports as to whether the issue was in fact addressed at meetings or whether this segment of the village was left out of the JFM process. There have also been positive comments with respect to the efforts of the Forest Department to facilitate JFM in Solang. The *mahila mandal pradhan* spoke optimistically about JFM, and indicated that the Forest Department has been making an effort to involve women through special meetings for *mahila mandals* in the area regarding the forests. One member of the JFM executive committee also commented,

The relationship between the village and the Forest Department is better now and there is more cooperation. Before, the Forest Department was giving orders and now they are asking questions.

In the two communities discussed above, JFM is being met with different responses, according to local circumstances. Though there are obvious difficulties, as indicated in the both the villages, the Forest Department is putting forth some effort to understand the individual villages and their needs and to ‘ask questions’ instead of ‘giving orders’. The fact that these initiatives are so recent makes it difficult to comment on whether these institutions will prove to respond in ways that buffer the forest system from pressures such as growth in tourism and commercial horticulture.

VILLAGE RULES-IN-USE

Nature of the Institution

Village level rules-in-use are the institutions that govern the daily decisions of individual villagers. Such rules are highly sensitive to local context. It is at this level that social sanctions operate and for these reasons, it is not surprising that at the level of rules-in-use, institutional responses to pressures on village-areas of the forest vary widely. Davidson-Hunt (1995b) established that rules-in-use do exist at the village level and that these rules do not necessarily reflect the *de jure* legal framework, especially with regards to cutting trees for fuelwood needs. In this discussion, responses related to increases in commercial horticulture and to pressures on the forest indirectly related to illegal felling as a result of tourism and directly stemming from growth in tourism are examined.

Institutional Responses

The only institutional response at the level of rules-in-use that clearly functions to buffer the forest system is the practice of using pruned branches from apple trees for fuelwood. Villagers in Prini and Old Manali indicated that this is a conscious effort to decrease demand for fuelwood, however, no one indicated that they were able to meet all their household needs from pruned branches from apple trees.

Another fairly universal rule relates indirectly to pressures from illegal felling of trees and is a response to Forest Department measures to further regulate the use of timber. According to most villagers, even in the case of extenuating circumstances such as a death, villagers are required to have permission before taking a tree for the cremation or funeral feast. Interviews from both Prini and Old Manali revealed that it was in fact socially acceptable to ignore this Forest Department regulation and take what is needed.

For a funeral, no one makes things difficult if you cut a tree, but for other occasions you must ask the Forest Department.

If someone dies you do not need permission for the wood for the funeral. You can cut a tree if necessary, a poplar or a whole tree.

Thus, in this case social needs override ecological considerations and legal imperatives. Though the practice itself may appear to disregard values which dictate that one should protect the forest, in effect it also indicates a capacity for the rules-in-use to be sensitive enough to distinguish between practices that are purely destructive to the forest and practices which are based on a social need.

In contrast, village rules-in-use responded to the creation of a black market for timber, which was fueled by the construction boom in Manali, in a way that was perhaps predictable. Illegal felling by villagers in Old Manali and Prini was accomplished either by simply flaunting the regulations prohibiting felling of trees or through circumvention of the TD system,

As the number of hotels has increased, the forests have decreased. The people who are building hotels have used smuggled timber. They have not purchased the timber at market rates, but from local smugglers.

When someone is granted one tree for TD entitlement, they cut four or five trees in order to sell them illegally. The smugglers pay money and the Forest Department allows this to happen. The Forest Department is the problem.

As Hanna (1998:201) explains, “[t]he development of markets for any natural resource introduces strong pressures on resource appropriators to maximize short-run gains at the expense of long-run sustainability.” This incentive to take advantage of opportunities created by markets is a temptation that has been documented time and time again (Ciriacy-Wantrup and Bishop 1975, Hanna 1998). In this case, market incentives were not only enhanced by the alienation of responsibility for management from the user, but they were also reinforced by the apparent corruption within the Forest Department that helped to facilitate illegal felling of trees. Numerous villagers in Old Manali echoed sentiments that expressed the idea that the Forest Department had the responsibility to ‘do something’ about the state of the forest and that forest management was beyond the control of villagers. However, this idea is changing,

People are realizing how far they must go for fuelwood. People used to think that the forests are government property, but now they know that they must take responsibility for caring for the forest.

Notwithstanding the circumstances and the additional reinforcements involved in the decision to illegally cut a tree, this institutional response is decidedly detrimental to the forest and does not increase the buffering capacity of the forest system.

CONCLUSIONS

This paper began with the idea that institutional responses could be assessed as to whether they were promoting the resilience of the linked forest system. This assertion was based on the idea that resilient systems are those systems that are able to maintain integrity in the face of external influences (Berkes and Folke 1998) and on the idea that institutions must recognize, interpret, relate and respond, to ecosystem dynamics in a fashion that secures the flow of resources and ecosystem services (Hanna et al. 1996). For each of institutions explored in this discussion, institutional responses both contributed and weakened the capacity to buffer the forest system from pressure. In some instances the institutional response was ambiguous.

The following responses appeared to strengthen the resilience of the forest system:

- ◆ the establishment by the Forest Department of the depot to supply fuelwood in Manali
- ◆ monitoring of the illegal extraction of timber by *mahila mandals*
- ◆ the ban on the sale of fuelwood instituted by *mahila mandals*
- ◆ discouraging the practice of lopping of branches for fuelwood by *mahila mandals*
- ◆ the exclusion by *mahila mandals* of those without rights from village forest use areas
- ◆ villagers' practice of using pruned apple branches to supplement fuelwood needs
- ◆ villagers' social needs overriding legal imperatives when appropriate

However, the following responses appeared to weaken the resilience of the forest system:

- ◆ formalization and tightening of rules in the Timber Distribution system by the Forest Department
- ◆ apparent corruption on the part of some members of the Forest Department
- ◆ illegal felling and smuggling of timber by villagers to supply the black market demand for construction material in the urban area

Institutional responses related to the recent adoption of Joint Forest Management as a policy by the Forest Department and the establishment of JFM committees in villages were difficult to assess. JFM, both as a policy and as a village institution, is in the very early stages in the area. Despite the ambiguities related to Forest Department attitudes and the implementation of the policy, it is significant that the 'players' in the Forest Department and in the villages are reasonably well defined. However, the process is not without difficulties and it remains to be seen as to whether social and institutional learning on the part of the Forest Department and the

village JFM committees will begin to drive the process and structure the institution according to village needs.

Where institutional responses were building the buffering capacity of the forest system, it was often because the response was in fact sensitive to local conditions. This common theme of the importance of local context reappeared throughout this discussion. The responses of the *mahila mandal* to the deterioration of village forest area differed between villages according to whether villagers were or were not involved in the illegal felling of timber. Forest Department regulations considered too broad to apply to all situations were and are still ignored by villagers when these regulations conflict with social imperatives. Where JFM efforts were being referred to positively by villagers, it was because the Forest Department was listening and making an effort to understand village realities. Perhaps then, the message that can be taken from this discussion is that the ability to adapt responses to change such that they are appropriate and sensitive to local context can also contribute to the resilience of the system.

The resilience of any social-ecological system is multi-faceted, and assessing resilience requires multiple perspectives. In the Manali area on the whole, massive deforestation attributable to the expansion of tourism and commercial horticulture has not occurred. The boundary of the forests in the area has not changed much over the decades (Gardner et al. 1997). However, localized depletion of trees from village forest use areas are a reality for villagers and are of paramount importance to them. Meeting local needs has become increasingly difficult. As a result, institutions in the area are responding to those challenges to the forest resource. Many of these responses promote resilience, but some of them do not. Resilience weakening responses, such as corruption and illegal felling, do so not by design – rather they may be seen as institutional failure. The provisions of the Joint Forest Management policy have not had a major impact towards solving current issues since the policy is only at an early stage of implementation.

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Table 1: Deconstruction of interviews conducted in Prini, Solang and Old Manali.

Village	Approximate number of households	Number of interviews conducted	Approximate percentage of total households	Number of women interviewed	Number of men interviewed	Number of joint interviews
Prini	40-50	35	80%	16 (46%)	19 (54%)	---
Solang	40	28	70%	12 (43%)	14 (50%)	2 (7%)
Old Manali	300	74	25%	35 (47%)	39 (53%)	---
<i>Total</i>	---	<i>137</i>	---	<i>63 (46%)</i>	<i>72 (53%)</i>	<i>2 (1%)</i>

Table 2: Spontaneous reasons given for changes to local forest resources by villagers.

Village	Attribute forest resource problems to illegal felling	Link forest resource problems to sawmill processing for apple boxes	Link forest resource problems specifically to tourism	Link forest resource problems to pressures from increased population	Attribute forest resource problems to Forest Corporation Contracts where more timber was felled than was contracted
Prini	10 (29%)	3 (9%)	---	9 (26%)	---
Solang	5 (18%)	---	---	9 (32%)	16 (57%)
Old Manali	39 (53%)	1 (1%)	19 (26%)	23 (31%)	---
Total	49 (45%)	4 (4%)	19 (17%)	32 (29%)	---

Figure 1: Location of the study site: the Manali area on the Beas River in the Kullu District, Himachal Pradesh, India.

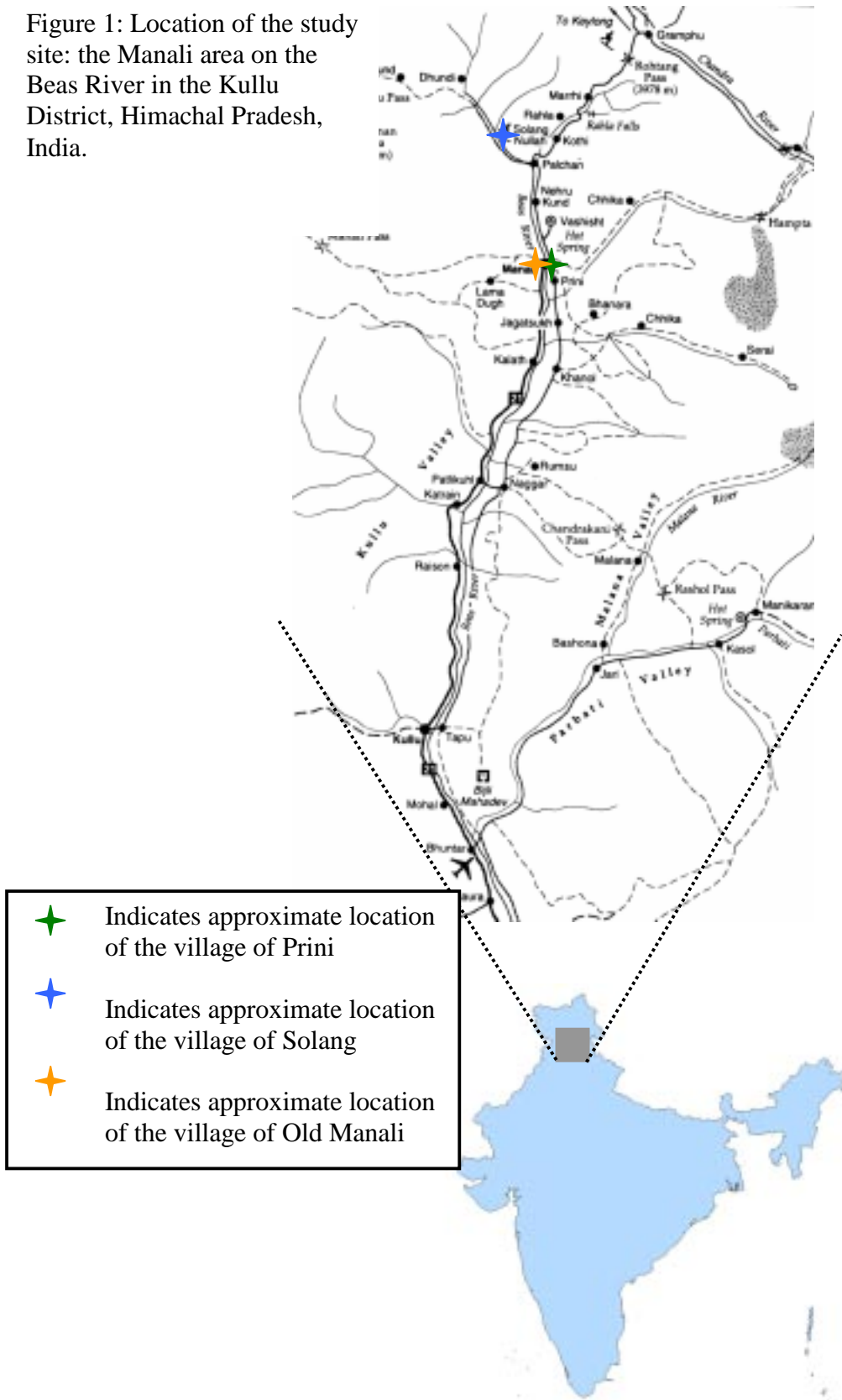


Figure 2: The organizational structure of the Forest Department in Himachal Pradesh. (As depicted by R. Sharma, Range Forest Officer, Manali.)

