Survival Strategies and the Environment: The Siwalik Forest Commons, 19th and 20th Centuries

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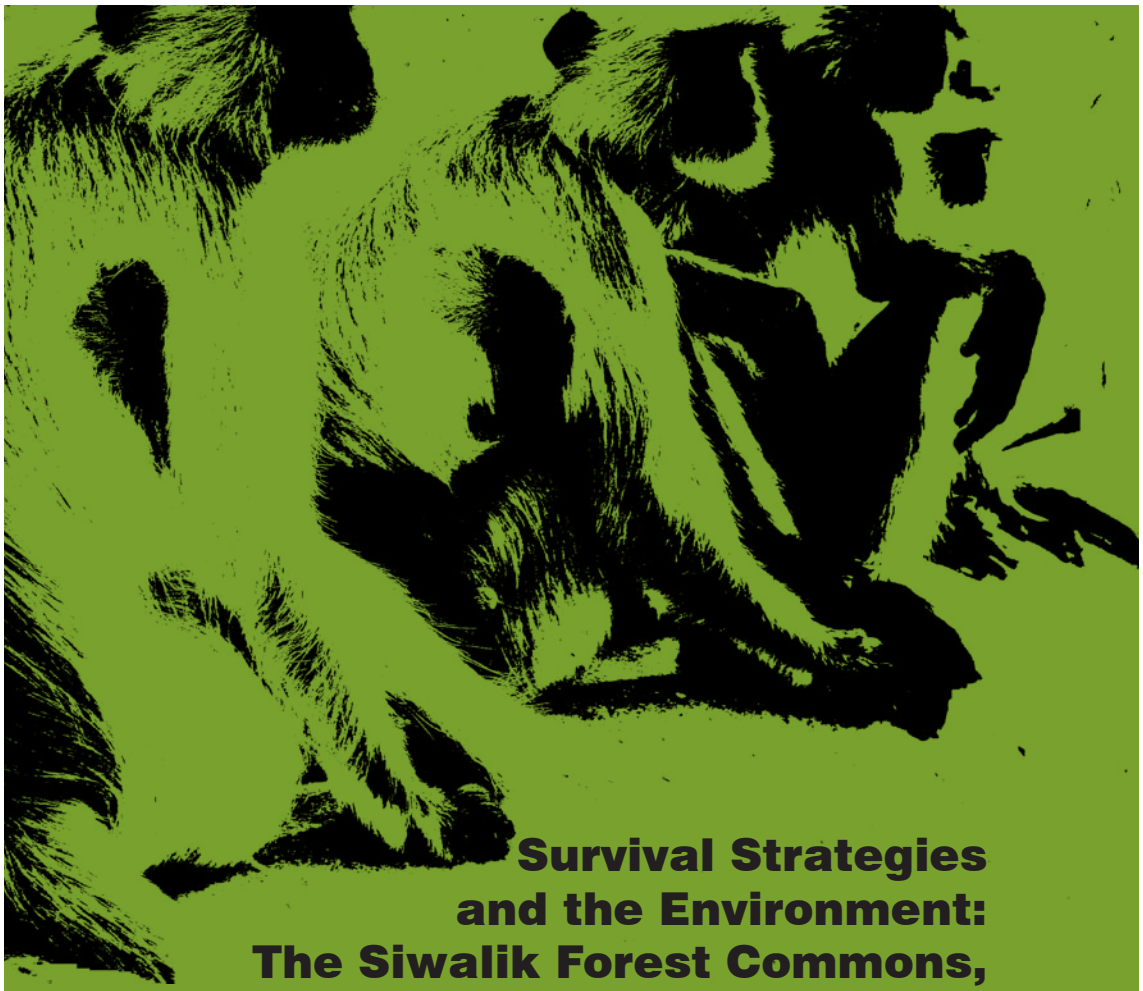
The history of the Siwalik forest commons counters the notion of a 'tragedy of the commons' as is commonly understood. It also corroborates their support as buffers and safety niches for pastoral peoples from uncertain political and harsh landscape of seven rivers and mountain chains of the Hindu Kush - Himalayas. Here we document those features of such traditional systems of shamilat van or forest commons in the Siwalik forests of the Punjab and analyse their contribution to the agro-ecosystems of both local agriculturalists and pastoralists to the north and south and the reciprocal system of rights, rules, and responsibilities devised by the users to ensure the survival of the forests. These resource-use systems also enabled communities to bear uncertainty and share risks. Indigenous management systems assumed a diversity of forms, reflecting the flexibility required to adapt to the dynamic environments in which these communities lived. It appears that this institutional flexibility allowed local management systems to endure through political upheavals and natural disasters. Thus it is that the collaborative management of the Siwalik forests successfully supported fragile ecosystems of the Upper Himalayas and relieved resource pressures on the plains below in the doabs or land lying between the rivers of Punjab.



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Ever since 1968, when Garrett Hardin, writing in the journal *Science*, made his most persuasive argument that population growth, especially in less developed societies, is responsible for overuse of the natural resources of the world – what he called the "tragedy of the commons" – it has become customary for scientists and environmentalists to correlate demographic factors with natural disasters.[1]

Subsequent research and Hardin himself have established that most resource users do not act individually, but within communal customary systems, and that these systems do have in-built rules to prevent misuse. This perception, however, is not universally shared. Conservationists and forest departments regularly recommend keeping human beings out of nature reserves to protect forests and fauna. Often enough, nature reserves are established on the common resources of communities. Two such instances are the national parks created in the Hindu Kush and the Northwest Himalayas to preserve the Marco Polo sheep and the Bharal sheep.

It is but natural to perceive recent disasters, such as the Indus floods in 2010 and the Sindh floods in 2011, and erosion in the Siwaliks over several decades, as directly related to communities' loss of their village common lands and forests. Human and animal lives have been lost because villages and nomadic people can no longer provide refuge to the victims of natural disasters.

My hypothesis is, in the first place, that the history of the Siwalik forest commons counters the notion of "tragedy of the commons", as the local people's land-use pattern is governed by rules of access and use, and sanction of misuse. Secondly, that these forests, collectively maintained by communities in the Siwalik foothills of the Himalayas, function as buffers and safety niches for pastoral people who migrate through them from the fluvial plains during the summer heat and water shortage to seek refuge in the mountain ranges of the Himalayas. Thirdly, that this collective networking takes place outside of the market exchange system and functions on the basis of reciprocity.

Lacunae in the history of village forests and local communities

My above hypothesis is based on primary sources, including both information gathered at the villages themselves and pre-1947 Government department proceedings. My extensive field work in the Siwaliks

[1] G. Hardin, "Tragedy of the Commons", in *Science*, 162, 1968, pp. 1243-8.

was made possible by a Ciriacy Wantrup fellowship awarded to me by the Environment Department of the University of Berkeley, California.

Forest history has paid scarce attention to the use of forests by sedentary communities or nomadic herders. Much of the literature on the forest history of India has focused on the exploitation of valuable trees from Indian forests in pre-colonial times, especially by European maritime countries for shipbuilding, or the use of forests by Indian rulers for pleasure hunting and displays of power. This kind of use is also documented in historical atlases, such as that of Mughal India by Irfan Habib (1982).[2] Colonial ethnographers like Verrier Elwin and later scholars have studied forest dwellers and described slash and burn practices, and some descriptions of sacred groves also do exist. Not as much attention has been devoted, however, to the use of the natural resources of forests by ordinary folk, such as farmers or livestock herders, whether for their everyday needs or for survival in extreme situations such as famine, floods and pestilence. We thus know very little about historical patterns of land use and natural resource use, and even less about the practices adopted to ensure survival during harsh times. The issue has also been overlooked by the nationalist movement for independence. Nationalist leaders have never acknowledged the value of common lands and forests as resources for the poor.

In most Asiatic countries, "village forests" were included within the territory of agrarian settlements or hamlets. Sometimes they were a part of a larger forest, as was often the case when the hamlets lay in forested tracts in mountainous regions of Asia. Such woods sometimes have histories reaching far back in local cultural traditions, as in the case of sacred groves in China, Japan and India. In early nineteenth-century Japan, communal forests were estimated at over 4 million acres (7.5%), privately owned forests at 28 million (26%).[3]

The first Inspector General of Indian forests, Dietrich Brandis, had a broad vision of Indian forestry as a network of state reserves

[2] I. Habib, *An Atlas of Mughal Empire: Political and Economic Maps with Detailed Notes, Bibliography and Notes*, Oxford University Press, New Delhi 1982.

[3] B.E. Fernow, *A Brief History of Forestry. In Europe, The United States and Other Countries*, University of Toronto Press, Toronto 1907, p. 380.

paralleled by a network of village forests.[4] Village forests in South and Southeast Asia were formally taken over by civil and forest administrations wherever companies like the EIC and VOC took centralized control of them.

Some examples are illuminating. In the nineteenth century, the civil administration of the settlement of Greater Punjab (present day Pakistan and northern India) recognized woodlands in Hazara in the west and at the base of the Siwaliks as common property. Forests like the Shahpur Kandi forest on the bank of the river Ravi, the Panjawar forest in Una, and the bamboo forests in Karanpur and Brindaban in Hoshiarpur were jointly owned by clusters of villages. These village wood lots were also recognized as *shamilat-vans* in the plains at the time of settlement.[5] *Van panchayats* were set up in the Kumaon and Garhwal regions of the Indian Himalayas in 1930. By 1960 there were 4000 of them distributed over half a million hectares.[6] Today, this is the only legally mandated network of village forests in India. Their bureaucratic control by both the civil and the forestry departments continues in both regions.

Here I document the features of such traditional *shamilat van* (forest commons) systems in the Siwalik forests of the Punjab, analyse their contribution to the agro-ecosystems of both local agriculturalists and pastoralists residing to the north and south of the area, and examine the reciprocal system of rights, rules and responsibilities set up by the users to ensure the survival of the forests. These resource-use systems enabled communities to minimise uncertainty and share risk. Indigenous management systems assumed a diversity of forms, showing the necessary flexibility to adapt to the dynamic environments these communities lived in. Apparently, this institutional flexibility allowed local management systems to endure through political upheavals and natural disasters. Thus it is

[4] R. Guha, "The Prehistory of Community Forestry in India", in *Environmental History, Special Issue: Forest History in Asia*, 6, 2, 2001, pp. 213-238, here p. 223.

[5] M. Chakravarty-Kaul, *Common Lands and Customary Law. Institutional Change in the Past Two Centuries*, Oxford University Press, New Delhi 1996.

[6] Guha, *The Prehistory of Community Forestry in India* cit., p. 229.

that the collaborative management of the Siwalik forests successfully supported fragile ecosystems of the Upper Himalayas and relieved pressure on resources in the plains below, the *doabs*, the land lying between the rivers of Punjab.

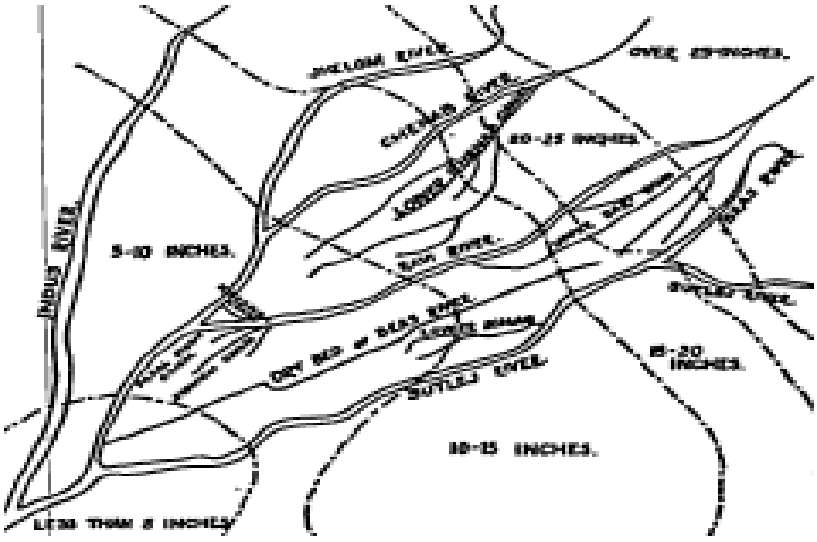
The *shamilat van* or forest commons of the Punjab Siwaliks have continued to function down to this day, despite interference of the state forest department and of commercial interests over the past century. Complex, time-tested agreements between agriculturalists and pastoralists are still operative in many areas, especially where uncertainties have been enhanced by increasing pressures of physical, social, and economic nature. Then there is the recent effort of the government to encourage joint forest management through a policy resolution, which is informed by a bureaucratic tendency to impose a uniform structure. This essay warns of the dangers of uniformity and rigidity, given that it is diversity in resource-use that has allowed traditional societies to cope with a highly dynamic and variable social and physical environment.

In the next sections, I demonstrate how communal resource-management institutions emerged in history as a means for communities to survive in the face of both natural and political uncertainties. These institutions had to do with both land-use pattern and customary rules of access. Survival required complementarity over time, space and scale between two systems of production: food crops and pasture. In the end, however, State intervention interfered severely with these ecologically sustainable patterns of land use. The State – as we shall see in the last section – imposed uniformity on the diverse institutional arrangements of self-governing collectivities. It is this interference – which over time eroded the collectivities' capacity to co-manage, encouraging lawlessness and fostering overexploitation – that led to resource erosion and environmental deterioration.

Land-Use and Forests Fallows: Rules for Sustainable Ecology in Northwest India

Historical documents show how human populations in North India adopted a number of land-use strategies to counter the risks

Map 1. Rainfall grids and regional complementarity in the Punjab



posed by regional variations in rainfall, temperature, and vegetation. A similar strategy was studied in Africa by Ester Boserup.[7] It involved treating forests as long fallows and thus rotating fallows to sustain diversity in village woods and forests. This kind of strategic behaviour is easily explained if we look at a rainfall map of the Punjab, which approximately follows the altitudinal contour lines of the region. Rainfall varies from 5 to 10 inches a year in the Great Indian desert (the Thar) in the south-west to over 30 inches as one moves north-eastward toward the higher elevations of the Siwalik hills and the Greater Himalaya (see Map 1). In the plains and in the lower Siwalik hills, low and erratic rainfall averaging 20-25 inches, combined with the heat of tropical latitudes, gives rise to a forest composed of thorny shrubs and *Acacia* species such as *khair* and *babul*. The vegetation changes to deciduous and temperate types as we move into the rainier country and higher altitudes of the Siwaliks and Himalayas. This

[7] E. Boserup, *The Conditions of Agricultural Growth. The Economics of Agrarian Change under Population Pressure,* Allen & Unwin Ltd., London 1965.

vertical and horizontal variety in the forest ranges stretching from the Hindu Kush mountains in the northwest to the Dhars of Kangra is further nuanced by the presence of several major rivers, each forming its own distinct ecosystem. Each *doab*, or land between two rivers, was known by its own distinct name (see Map 2). In each of these inter-riverine systems, the mountain forests experience higher rainfall during the monsoons, colder and more severe winters, and more pleasant summers than the forests of the lower hills, valleys and tropical plains. These sharp but simultaneous differences in temperature and moisture at varying altitudes create conditions of resource complementarity between each level of the ecosystem over time and space. These complementary niches have been effectively utilised for both cultivation and pasture over time through the application of diversity-preserving rules, as we shall see below.

Rules to sustain regional land-use complementarity

In the nineteenth century, the regional complementarity of the different rainfall zones in each inter-riverine area (*doab*) of the Punjab region fostered both the specialization of different areas and the need for resources from other regions from one season to the next. Thus, the plains, valleys and lower hills were primarily used as arable crop land. Residents of the upper hills and mountains, instead, depended primarily on pastoral resources. But neither region could be completely divorced from, or survive independently of, the other. While the plains faced long droughts with highly unpredictable rains, flash floods, and volatile river action during the monsoons, the upper hills confronted heavy rain throughout the monsoon period, as well as harsh winters.

The submontane zone between these two levels – the Siwaliks – was in an intermediate situation. It provided pasturage, forest vegetation and land for cultivation, acting as a common pool resources and a buffer (see Map 2). Therefore the two main user groups – the sedentary cultivators and the transhumant pastoralists – were in a symbiotic relationship. This relationship could be sustained as long

as one group complemented the other in terms of resource-use patterns and common rights. The Siwalik forests, as we shall see below, played an important role in this complementarity.

Rules to sustain diversity. The Siwalik forests serve as commons

The grazing rights applying in the open steppes of the drier, pastoral lands to the south, as well as in the mountains to the north, are a case of this complementarity between regions. Cultivators entrusted their livestock to herdsmen who moved them in large herds (*gols*) across arid tracts, through riverine and fallow forests, and up into the hills.[8] Each zone offered pasturage (see Map 2 arrows indicating winter and summer movements) because these seasonal pastoralist movements were planned to make the most of land-use patterns in each area of the *doabs*. The final destination of the herds was the long fallow pastures of the submontane tract, which had the status of *shamilat van* or forest commons.

And thus it was that the grazing grounds of the Siwalik forests – straddled as they were across the rivers Ravi, Beas and the Sutlej – served as seasonal commons, supplementing seasonal fodder shortages in both north and south. In summer they were often needed by the sedentary cultivators of the plains, who depended on fallow land rotation for grazing, when the village commons (*shamilat-deh*) were insufficient. In winter, the cattle and sheep of the terrace cultivators and Gaddi shepherds could not survive in the upper hills, so they were brought down into the foothills. Thus, the Siwalik forests provided long fallow pastures throughout the year for both nomadic livestock from the mountains and plains, and local farming communities settled within the forests. They thus served as a regional commons, access to which was well regulated by customary norms followed by the communities who held them, as we shall see. This allowed sustainable cycles of grazing and forest recovery.

[8] *Land Revenue & Agriculture (Famine) Proceedings 3-4 A*, September 1885, p. 324.

Rules to support conservation through reciprocity and risk-sharing

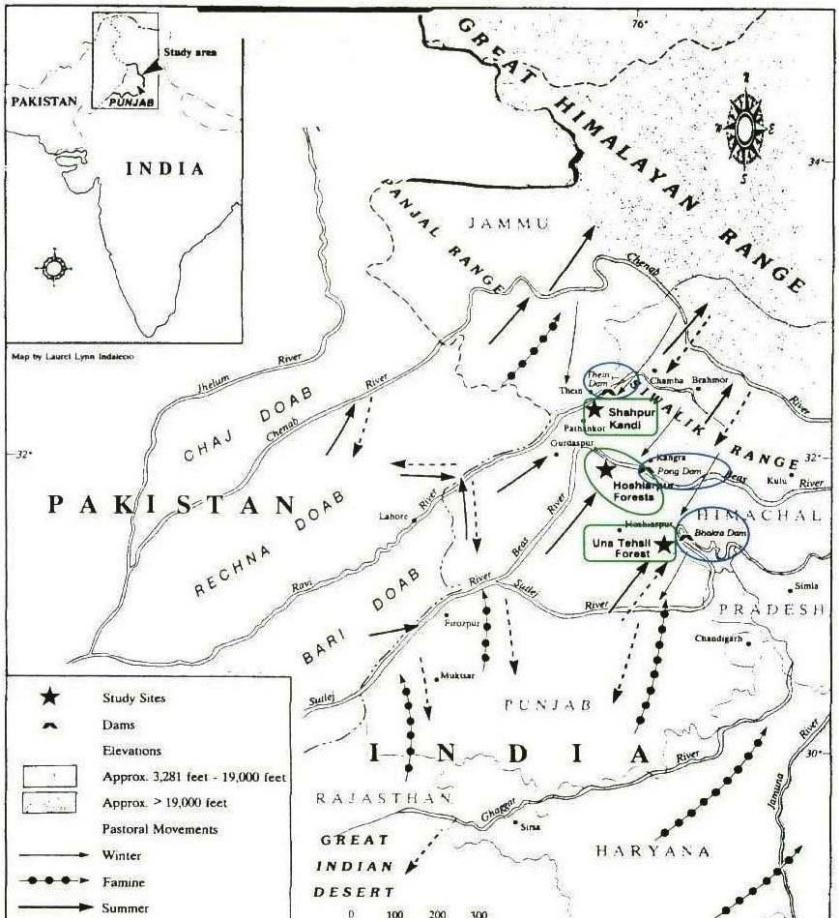
Reciprocity was founded on complementary needs and synergistic linkages between users, enabling them to optimally share risk by tapping into the inherent characteristics of different ecological niches. For example, when J.B. Lyall visited the Kangra area in the 1870's, he noted that the limited carrying capacity of the upper Himalayan pasturages forced the Lahuli pastoral nomads to use their summer grazing lands for very short periods, and only for a limited number of sheep. To make up for this, the Lahulis hired professional herders from outside to graze their additional animals in the lower elevation commons.[9] Such co-management arrangements allowed the Lahulis more time to trade and supplement their earnings, while also providing them with capital to negotiate and further reinvest in mutual resource-use agreements. Without such agreements, the fragile alpine pastures would have been rapidly degraded through overexploitation.

Similarly, the Siwalik forests would also have been exposed to overgrazing if access and use had not been monitored. The cost of policing could only be borne by sharing it – that is, through reciprocity. In normal times, in the spring, after the *rabi* or winter crop had been harvested, the livestock of both forest villagers and Gaddi shepherds were penned in the fields or terraces to graze on the post-harvest *rabi* stubble and grass on the village common fallow lands. Manuring with sheep droppings was a recognised custom, and one which shepherds were sometimes paid for. In return for this privilege, the Gaddis obliged the cultivators by herding their sheep together with their own as they moved with their flocks up into the hills, the mountain valleys (*duns*) and the alpine pastures above the tree-line in search for grazing grounds.[10]

As the Gaddis moved out of the forests, the Gujars' livestock would move into the submontane zone to graze on medicinal shrubs.

[9] *Kangra Settlement Report, 1865-72.*
[10] Ibid.

Map 2. Transhumance patterns in the region



When the monsoons broke, the herders would drive the cattle down from the hill forests to the drier ridges of the *doabs* and then further down to the lower Siwalik forests.[11] Thanks to this transhumance, the Siwalik hills, *doabs* and submontane *shamilat van* provided win-

[11] Ibid. Also *Kangra Settlement Report, 1865-72* cit., p. 40.

Figure 1. Erosion in the Shahpur area, Gurdaspur District

Erosion in the Shahpur Kandi area, Gurdaspur district.
PHOTO BY V. W. SMITH, INDIAN POLICE

ter grazing for cattle in all three agricultural zones – the mountains, the hills, and the plains.[12]

During unseasonal weather cycles and droughts, reciprocal arrangements between cultivators and pastoralists frequently increased.[13] A shortage of rain or excessive summer temperatures would drive the cattle from water holes in the arid southern plains in the districts of Sirsa and Hissar to the riverine grasslands, or up to the Siwaliks and the lower Himalayan forests.[14] The lower temperatures and greater rainfall of the hills made them a natural refuge from scarcity or famine in the plains, and a logical destination for

[12] J.M. Douie, D.C. Karnal to Commissioner and Superintendent, Delhi Division, 8/8/1884, para 7, in *Land Revenue and Agriculture (Famine) Proceedings 3-4 A* cit.

[13] Ibid.

[14] *Revenue and Agriculture (Famine) Proceedings 3-4 A* cit.

graziers from the south. Thus, the submontane forest fallows, along with the *chhambs* or wetlands and riverine grasslands, were the most exploited areas, as they complemented the grazing resources of both the montane areas and the plains of the region, and in the process minimised risk in uncertain times.

Supplementing conservation-oriented rules of forest-use and rules for the minimising of individual risk were rules concerning "insecure" areas that formed along the rivers as floods eroded and built up land along banks both in the hills and in the plains. Thanks to customary rules of management of both diluvion (erosion) and alluvion (accretion), villagers and transhumant herders typically shared these areas without dispute. Whenever land accrued to the village on the banks of the Sutlej or the Beas in Hoshiarpur district, a special collective tenure known as *halsari* [15] or plough shares was instituted. When land was eroded by floods, the loss to individual cultivators and herders was made up for by allocations for crop and pasture from the village common lands.

Survival Strategy and the Environmental Challenge

Erosion was observed in the Siwaliks hills (Figure 1) as early as the nineteenth century, and yet it is here in these ranges that three *shamilat van*, Shahpur Kandi in Gurdaspur, the Brindaban and Karanpur forests, and Panjaur Una Tehsil in the Hoshiarpur districts of the Punjab, have managed to survive into the twenty-first century. In 1961, it was estimated that over 1500 square miles of *shamilat van* still extended over the lower Siwaliks, accounting for much of the Punjab's remaining forest resources.[16]

The survival of these forest commons is all the more remarkable considering the economic and environmental situation at the time when these districts were settled by the British. The districts were

[15] *Punjab District Gazetteers: Hoshiarpur District*: statistical tables 1904, Vol. 13 B, Lahore 1904, p. 172.

[16] *Punjab Forest Administration Report*, *1960-61*, p. 1.

experiencing endemic agrarian debt,[17] rampant land alienation, and a high frequency of land disputes.[18] Communal resource management systems did not escape unscarred. The pressure on the forests increased as the village *shamilat-deh* or village commons in the plains were partitioned out and greatly reduced. Village commons shrank not just in Hoshiarpur, but throughout the Punjab.[19] Furthermore, in the early 20th century the degradation and clearing of the reserve forests in the upper catchments of the Siwalik hills reportedly exacerbated flash flooding, which washed away 30,000 acres of revenue-paying cultivated land. Concerned over this loss of revenue, the Punjab Government passed legislation to strengthen access controls. [20] [21] Even though the new government regulations did little to slow down deforestation or solve issues of erosion and degradation, remarkably enough there were noticeable signs of survival. Grazing pressure on both village common pastures and remaining forest tracts kept increasing. While traditional agreements still effectively controlled the use of some *shamilat van*, intensive cultivation was taking its toll on riparian resources and shortening cycles on much of the fallow. How then did these forest commons manage to survive?

Diversity and survival of forest commons: three examples

One major contribution to the durability of the forest commons was of course their natural diversity, preserved by customary rules of use adjusted to complement the needs of communities from other regions and ensure reciprocation of services. I will provide here some examples drawn from the history of three s*hamilat van* in the Siwaliks.

[17] M. Darling, *The Punjab Peasant in Prosperity and Debt*, Cosmo Publications, New Delhi 1925, p. 25.

[18] *Report of the Administration of Civil Justice*, 1892.

[19] *Settlement Report of the Hoshiarpur District*, 1879-84, p. 57.

[20] R. Temple, Secretary Chief Commissioner Punjab to D.F. McLeod Financial Commissioner for Punjab, *Hoshiarpur Settelement Report*, 1856, p. 77.

[21] *Hoshiarpur Settlement Report*, 1885, p. 18. *Census of India,* 1901, Vol. XVII, Part I, p. 62.

Some aspects of the survival of the *shamilat van* have to do with the diversity of the colonial allocation of rights and the system of recording institutional arrangements of forests held in common. Between 1848 and 1872, the government surveyed large forest areas, which it declared Reserved Forest in 1879, under the Indian Forest Act of 1878.[22] In situations where newly imposed state management regulations clashed with community use practices, the forests suffered the worst degradation. Where use agreements between the state and the local user communities were more compatible, the forests were better managed. Intensity of use conflict was inversely correlated to sustainable management.

Our first survival case is that of the Panjaur common forest (see Map 2 for its location), which received much attention from the Government due to its connection with the successful organisation of the first Co-operative Credit Society in the Punjab in 1896. This society drew its capital from the income from forest commons (*shamilat van*). With the passing of the Co-operative Credit Societies Act in 1904, the society was officially recognised and became a benchmark for the co-operative credit society movement started by the Punjab Government.

Our second case is that of the bamboo forests of Brindaban and Karanpur, which provide valuable resources for paper mills. The third is that of the Shahpur Kandi forest, which has continued to provide grazing resources down to this day, despite its inundation by a hydro-electric project. Certain communities have displayed remarkable tenacity, such as that of the Bachhoi village, which has maintained sizeable tracts of *shamilat van* forests down to this day. In this case, the Chief Court of Punjab enabled the community to fend off misuse.

The Shahpur Kandi tract lies in the Gurdaspur district (see Map 2 for location). It extends over 26,800 hectares of low hills along the banks of the Ravi. This area includes the like-named mixed-species forest, which covers an area slightly exceeding 11,000 hectares. The British Government reserved rights over *pinus longi folia* or 'royal' *chil* tree. To begin with, ownership of the forest land and commons was vested in co-proprietary bodies of 17 *mauzas* or revenue estates, ac-

[22] *Punjab District Gazetteers: Hoshiarpur District* cit., p. 129.

knowledging the rights of Gaddi shepherds and Gujar herdsmen.[23] It was difficult to demarcate the village forests, as they there interspersed with patches of swidden and other forms of cultivation accounting for over 40% of their surface. In 1904, the forests were finally demarcated and their status as *shamilat van* acknowledged. 9,487 acres of demarcated common forest were given to the twenty-one villages existing at the time, which extended over an overall area of 34,577 acres.

Unlike Hoshiarpur's Reserved Forests, where villages subsist on "old" concession rights, in Shahpur Kandi these rights were granted by the Forest Department.[24]

Although the Punjab Government was unable to reserve any compact block of forests, it did not "intend to alienate the forest", and stated instead its intention "to secure its proper management".[25] Dr. Schlich, the Conservator of Forests, urged the Lt. Governor to collaboratively manage the "owned forest waste land in which the village communities of the Shahpur Kandi tract had joint interest", under Section 79 Chapter II of the Act of 1878. This legal manoeuvre provided the state with a lever to impose its authority on the forest rights of the local communities.

The next example regards a different kind of forest commons. The forest extending along the banks of the Beas river had been used by Sikhs as hunting grounds. It comprised two segments, the Karanpur (7,535 acres) and Brindaban (4,310 acres) forests (see Map 2), both generously endowed with commercially valuable species of "gregarious" bamboo (*Dendrocalamus strictus*) and trees such as *khair*

[23] Letter of Alex Anderson, Settlement Officer, attached to letter dated Lahore, 6/1/1904, by the Offg. Revenue and Financial Secretary to Government, Punjab and its Dependencies to the Secretary to the Government of India, Revenue and Agriculture Department.

[24] The forest rights of 32 villages were recorded in the *wajib-ul-arz* of the *jamabandi basta* of the *bundobast* of the *mauzas* of Ban Brindaban, Bir Nandpir and Karanpur in 1883-84.

[25] Letter N. 489 from W.M. Young, Secretary to Government of Punjab, Secretary to Financial Commissioner, Punjab: "Proposed Demarcation of the Shahpur Kandi Forests", *Revenue Agriculture and Commerce (Forests), Proceedings 3 A*, December 1880.

(*Acacia catechu*) and teak (*Tectona grandis*).[26] The Forest Department had different interests in different portions of these *shamilat* bamboo forests. In one portion in the Bir Nandpir, the government simply leased out 1,803 acres to an individual at an annual rate of Rs 10. The settlement officer allowed cultivation by local villages for a user fee, eventually allotting nearly 300 acres. In addition, all of the thirty-two villages in the area were given grazing rights for ten months, and the right to freely harvest bamboo for their subsistence needs.

Thus, while the Forest Department wielded the de-jure power to dictate access and use rules, it rarely was sufficiently present on the ground for effective implementation. This left the local communities as the de-facto managers of the resource. The Forest Department could do little to stop them. This tension between the government's legal rights and the community's customary rights on *shamilat* called for delicate negotiation and compromise, opportunities for which were frequently stymied.

Significantly, all three systems have continued to function and arbitrate access, although their longer-term effectiveness is vulnerable to governmental policy change and other political influences. Additionally, all three forests are on the banks of rivers which have been dammed at the foothills. The reservoirs have swallowed up the pastures provided just outside of the forests, and in the case of Shahpur Kandi have inundated even the grazing land within the forest itself. Despite continuing pressure from the State Forest Department and the passing of national environmental legislation undercutting communal authority, the *shamilat van*, this communal system of managing forests, has persisted. This, as we shall see below, is largely due to local communities' need for effective access regulation and preventive strategies to cope with natural threats.

[26] From C.A. Roe, Settlement Officer, Hoshiarpur, to the Commissioner and Superintendent, Jalandhar Division, N. 217, 13/11/1872, *Revenue and Agriculture (Forests), Proceedings 3-5 B* , October 1887.

Diversity in communal institutions and forest-managing ethics

Operationally, *shamilat* institutions have provided an effective structure of disincentives to counter cheating, shirking and free-riding, and, more generally, to dissuade users from overexploiting forests. Access regulations have been designed to minimize supply and demand gaps caused by seasonal variations in product availability, as well as to minimise uncertainty over time and space among a large number of users depending on different forest products. There were rules for grazing in the crop stubble in the patches of cultivation in the three *shamilat van* of Brindaban and Karanpur, Shaphpur Kandi and Panjaur. Prior to 1961, 11 villages in the Hoshiarpur area shared their *shamilat van* with Gaddi groups.[27] In the nearby Lohara forests, the scattered communities had specific winter-use agreements for their *shamilat van* pasturages with migrant cattle herders from as far off as Chamba, Lahul and the Dhaula Dhar ranges further up north.[28]

This "forest ethic" or strategy assumes that survival depends on minimizing risk rather than optimizing returns by forest extraction.[29] It emphasizes stability of product flows and sustainability of forest use, as opposed to striving for maximization of short-term productivity. This perception has found little support from modern state, market and technological institutions, as we shall see below.

Free-riding emerges in the forest glades: who is to blame?

The Imperial Revenue Settlement officials encountered great difficulties in dealing with the complex rights of both cultivators and pastoralists to forest lands. However, once these rights were finally

[27] Una, *Hoshiarpur Settlement Report*, 1876, para 103.

[28] Ibid., para 108.

[29] My expression "forest ethic" is patterned after Scott's "subsistence ethic". J.C. Scott, *The Moral Economy of the Peasant,* Yale University Press, New Haven 1976, 1978, p. 2.

recorded, the situation assumed legal implications. The addressing of forest-use related legal issues ultimately fell to the officials of the Forest Department, particularly after independence in 1947. These officials had trouble keeping up with the diverse and flexible institutional arrangements of communal agreements, whose complexities frustrated the Forest Department's attempts to establish a uniform set of rules and regulations. Given so many different user groups, the implementation of enforcement and policing activities was nearly impossible.

The conservation measures embedded in the nature of customary relationships between self-governing and transhumant pastoralists and sedentary agriculturalists sharing forest commons were overlooked by the standardized policy measures and procedures adopted by the Forest Department. Once these measures had been adopted, they clouded the officials of the Forest Department's ability to understand the traditional controlling systems used by agriculturalists and pastoralists to protect resources. For example, the Forest Department simply assumed that community user groups exerted no control whatsoever over grazing practices. A 1959 report by the Himachal Pradesh Forest Department reads:

> these graziers with their large flocks, which are ever on the increase, have always been conspicuous *enemies* of the forests, particularly in hill tracts. In a forest tract, in which their flocks graze in concentrated manner or through which they pass, undergrowth vanishes, regeneration is no more, seedlings are eaten away, shrubs and bushes are munched and even the saplings cannot escape uninjured. They have been a constant headache to the Forest Department and in spite of the best efforts, their number had been on the steady increase".[30]

In the minds of these foresters, conservation was synonymous with total closure, or at least strict grazing restrictions on forest use. Ever since the colonial period, Forest Departments have pursued a policy to halt grazing on forestlands, both by transhumant users and

[30] B.S. Parmar, *Report on the Grazing Problems and Policy of Himachal Pradesh*, Government of India Press, Shimla 1959, p. 14.

by those who have customary rights on them. Inconsistently, official policy did not concomitantly restrict commercial timber exploitation. The Forest Department's encouragement of commercial utilization, at the very time when it was curtailing traditional rights such as grazing, placed an increasing strain on communal systems. Complementary resource-user relationships were now forced to compete with growing state-supported, commercial extraction. Ultimately, the eroded authority of traditional controls undermined confidence in old agreements, stimulating distrust and spurring conflicts between co-managers.

Since Independence, the gap between de-jure and de-facto rights has widened. In the *Shamilat van* of Hoshiarpur, the gulf between the State's legal control and the community's de-facto control has continued to negatively influence resource-use behaviour. Subsequent attempts by the Forest Department to enhance their authority and erode the rights of forest villages have further undermined the tenure security of community groups. This has led to free-riding. Meanwhile, the state's lack of confidence in its own control has resulted in corruption and unsustainable and inequitable use practices. Hence, free-riding has not primarily been an outcome of population pressure, but a natural consequence of the erosion of faith in the system of customary control measures, and the Forest Department's failure to make up for the decline in indigenous access controls.

This trend has been intensified by the gap between grazing needs and reduced pasture in forest lands. This gap arose when the above-described *shamilat van* pastures were inundated by the construction of dams in the Siwaliks (see Map 2), namely, the Bakhra on the Sutlej, the Pong Dam on the Beas, and the Thein on the Ravi. The dams have visibly eroded grazing lands and undermined diversity in forests in the most vulnerable tracts of the foothills. This kind of land-use displacement has contributed as much as growth in human and cattle numbers to the problems of overgrazing and "other biotic interference" frequently mentioned by the Forest Department.[31]

[31] *Working Plan of Karanpur and Brindaban Government Forests 1981-82*, p. 15.

The Forest Department takes the position that both grazing and agriculture are unsuitable resource-use systems for forest lands in the Punjab. While there is justification for the Department's position, exclusionary policies would create severe displacements and be extremely difficult to implement. Further, the Department has not sufficiently explored with user groups possible sustainable approaches to integrating livestock and agriculture within the larger forest management system. Nor has the Forest Department attempted to learn from the communal management practices developed over the past centuries. The exclusion of forest users will likely only transfer pressures on resources to other overtaxed areas, and will not necessarily improve access control or management in any forest lands. In fact, the cost of this move may generate more disruption to the larger ecosystem, outweighing the benefits it may bring in terms of reduced pressure on the local forest environment.

Meanwhile, to protect their future rights to winter pasturage, the Gaddi are buying more and more land in the forest *mauzas*. Their latest move has been to unionize; on August 15 1993, the Himachal Pradesh Gaddi Union was registered in Shimla. Eighty-year old Amin Chand, of Hoshiarpur, states, "We do not know when they open the forest plantations in Bir Nandpir and when they close them. We are not asking for favours, we ask for our rights, those which were laid down in the *Wajib-ul-arz*". He explains that his village has set up alternate grazing and bamboo areas because they are never sure about where closure rules apply in the Reserved Forests, or the period when they apply. Because the old village leader speaks out against injustices to right-holders, the FD staff see him as a Communist organizer.

Lobbying and the market surfaced as rule-making became increasingly centralised and the customary control of users declined. The erosion of local management systems occurred progressively. During the British period, disputes continued between the Revenue Department, which wished to generate funds through the leasing of pasturage, and the Forest Department, which preferred to increase closure to protect bamboo and timber stocks for future profit. In 1903, the Forest Department agreed to give up its authority to close

the forest to grazing in exchange for local communities' relinquishing of their rights to lop trees and cut bamboo. This strengthened the agency's ability to contract commercial bamboo extraction without consulting with local communities.[32] In 1956, long after the British had left, the Forest Department used this authority to the advantage of the industry when it signed a contract with the Gopal Paper Mill. The concessional terms involved an extension of the harvest period to six weeks and setting a highly subsidized rate of 6 paisa per bamboo in excess of the quota.

This preferential treatment toward the paper industry stood in marked contrast to the Forest Department's relationship with community right holders. The latter were accused of misuse and assessed heavy fines.[33] The Forest Department made periodic attempts to increase its policing staff and halt "illicit grazing". There was little recognition of the fact that the loose regulatory measures applied to commercial users were highly inconsistent with the heavy fines and penalties levied on local forest communities and pastoralists. Worse, these inequitable regulatory practices harmed the credibility of the Forest Department, raising serious questions regarding its sincere commitment to sustained forest protection and management.

In the last analysis, the failure of state policy, even if well-intentioned, to match up to reality in the field arises because the state refuses to recognise the importance of historical local management systems. The Punjab Government must acknowledge that over the centuries its forests have been managed collaboratively – and often successfully – by local agriculturalists in partnership with pastoral nomads. If nomadism is indeed responsible for the severe erosion problems of the Lower Siwaliks (where the vast majority of the Punjab's forests lie), the most promising solution would be to incorporate the nomads into new management agreements granting better control of their resource-use patterns. While it is important to

[32] Ibid., p. 35.
[33] Ibid., p. 21.

recognise problems of resource degradation and erosion caused by population growth and nomadic cattle, it is equally important to address the issues of common property rights and community land management traditions, minimising State control on them.