Chapter 2
Land Policy and Uses

In India, national-level policies have been developed for land use. These policies cover mountain areas broadly. Naturally, in regional terms, they lack specificity and sharp focus. It is at the state level that policy applications undergo adaptations in details that keep in mind the national framework on one hand and the local situation on the other.

National Land-use Policy

In 1974, the national government asked the states to establish land-use boards. The Central Land-Use Board was set up in 1983. The National Land-Use Policy was released in 1998. Its objectives include allocating land for various purposes based upon capability criteria, increasing productivity, preventing land deterioration, enlisting community participation in land management, providing technological and extension support for optimal, integrated land use, encouraging mixed farming systems, carrying out land and soil surveys with a view to developing reliable data, adjusting livestock production to sustainable feed and fodder resources, and coordinating water and forest policies and urban planning with overall land use. To achieve the goals of the policy, some of the initiatives recommended were

- development of a reliable land database,
- a national awareness campaign for integrated, sustainable land use,
- establishment of legal and administrative structures,
- protection of community rights and encouragement of community participation,
- development and adoption of appropriate cropping patterns,
- adoption of stall-feeding and improvement of grazing land in a fodder development programme,
- increasing the coverage of land under fuel and fodder tree species,
- protection of catchments and efficient use of water through a review of irrigation management,
- establishment of environmental protection laws and their strict enforcement,
- harnessing of technology for better land management through adopting the

concept of total treatment of watersheds,
- treatment of wasteland problems on an emergency basis, and
- decentralization of land-use planning to state, district, and block levels.

The policy document suggested a programme for providing vegetative cover to 40 million ha of degraded forest land and 94 million ha of degraded land outside the forest area.

This policy statement is comprehensive but little action has resulted. Targets for restoration of degraded lands and afforestation have not been achieved. The Central Board meets infrequently, and the situation is the same at state level. This is particularly true of the NWHRI. In Jammu and Kashmir, the abnormal situation has made the board practically moribund. In Himachal Pradesh, management issues remain unresolved. In Uttar Pradesh, the State Land-Use Board has organized some important interactions concerning land use in the hills but the conclusions and recommendations have not been reflected in the state's policy or actions.

National Policy on Wastelands

A draft policy paper on common-property land resources was brought out by the National Wasteland Development Board in the early 1990s. According to it, common lands in the form of grazing grounds, village woodlands, catchment areas, and other village wastelands provide income and employment to rural communities, especially the poor. These are community, forest, or government lands. About one-tenth of the country's land area falls into this category. Productivity of these lands is declining. There is a need to manage such lands using a watershed approach. Policy intentions are gradually being realised in the NWHRI. Many social forestry, watershed management, and joint forest management programmes have been launched in the last decade with the help of the central government and external agencies (e.g., World Bank, European Union, etc). However, institutional mechanisms to enlist adequate community support and involvement at the field level are yet to gather the strength and credibility required to enable them to take up these responsibilities effectively. Studies have shown that, even where greening of the commons has taken place, once a project is withdrawn, maintenance poses problems. In seven villages of the Uttar Pradesh hills, tree plantations undertaken on wastelands were successful in four villages while only partly so in the remaining three (SHERPA Survey, 1993).

Land-use Trends in the NWHRI

Table 2 gives details of land-use trends of the three subregions of the NWHRI from 1975-76 to 1990-91. A brief analysis of the table reveals the following.

- Recorded forest areas are different from actual forest cover as observed by satellite imagery.
- Area under non-agricultural uses has declined in Jammu and Kashmir and increased in the Uttar Pradesh hills.
- Barren and uncultivable land has increased substantially in all three subregions, while cultivable waste has gone up in Himachal Pradesh and the Uttar Pradesh hills. Area under pastures has remained almost static with only a small increase in the Uttar Pradesh hills.
- Current fallows have decreased in all subregions, while 'other fallow' has sharply increased in the Uttar Pradesh hills.
- Net sown area has increased both in Jammu and Kashmir and Himachal Pradesh, while it has decreased in the Uttar Pradesh hills.
- Cropping intensities have gone up across the board in the NWHRI.

Table 2: Land-use Trends in the NWHRI ('00 ha)

Category of land use	Jammu and Kashmir			Himachal Pradesh			Uttar Pradesh hills		
	1975-76*	1980-81	1990-91	1975-76	1980-81	1990-91	1975-76	1980-81	1990-91
Area under forest	6490	29187	27470	6375	8068	10389	34330	34434	34249
Area under non-agricultural uses	3514	3334	3030	1922	1618	1932	1051	1181	1365
Barren and uncultivable land	2274	2308	2950	1245	1413	1838	2310	2896	2955
Area under pastures	1265	1244	1270	11522	9858	11354	1980	2172	2274
Land under miscellaneous trees, etc.	1059	1028	730	429	395	482	1959	1856	2166
Cultivable waste	1512	1469	1380	799	2237	1251	2919	3159	3170
Current fallow	1052	942	970	546	414	447	264	206	82
Other fallow	93	80	60	33	126	154	288	320	634
Net area sown	6940	7163	7310	5578	5721	5828	6709	7042	6691
Total cropped area	9228	9739	10660	9236	9464	9836	10859	11477	10993
Cropping intensity	133	136	146	157	166	169	161	163	164
Net irrigated area	3018	3035	2980	901	918	995	1537	2016	2336

Note: * The figures for 1975-76 are based on village records of the Revenue Department, and do not cover all the reporting area.
Sources: LBS National Academy of Administration, 1998; Ministry of Agriculture, n.d; SHERPA Survey, 1993

- Net irrigated area has declined marginally in Jammu and Kashmir, risen in Himachal Pradesh, and sharply increased in the Uttar Pradesh hills.
- There has been considerable diversion of land to horticulture and non-agricultural uses.

Actual forest cover in the NWHRI is only 16.7 per cent while the National Forest Policy lays down a norm of two-thirds for hill regions. Productivity of forests is around 0.7 m^3/ha against a world average of 2 m^3/ha.

Land Holding Patterns

Tables 3, 4, and 5 indicate the number and area of operational land holdings by size and class. The average holding sizes are small (1.2 ha in Himachal Pradesh, 0.94 ha in the Uttar Pradesh hills, and 0.83 ha in Jammu and Kashmir). In 1990-91, the percentage of marginal holdings (below 1 ha) was 74 per cent in Jammu and Kashmir, 71 per cent in the Uttar Pradesh hills, and 64 per cent in Himachal Pradesh. Land fragmentation continues and this has been steadily increasing the numbers and per-

Table 3: Number and Area of Operational Holdings by Size and Class (Jammu and Kashmir)

Size	Number of holdings ('000)		Holding percentage (%)		Area ('000 ha)		Percentage of area (%)	
	1980-81	1990-91	1980-81	1990-91	1980-81	1990-91	1980-81	1990-91
Less than 1ha (marginal)	7.27	9.01	70.2	74.0	3.05	3.47	29.6	34.2
1–2ha (small)	1.76	1.97	17.0	16.2	2.47	2.72	24.0	26.8
2–4ha (semi-medium)	1.04	98	10.1	8.1	2.83	2.64	27.5	26.0
4–10ha (medium)	27	20	2.6	1.6	1.51	1.08	14.6	10.7
10ha and above (large)	1	1	0.1	0.1	44	23	4.3	2.3
Total	10.35	12.17	100.0	100.0	10.30	10.14	100.0	100.0

Source: Ministry of Agriculture, n.d.

Table 4: Number and Area of Operational Holdings by Size and Class (Himachal Pradesh)

Size	Number of holdings		Holding percentage (%)		Area (ha)		Area percentage (%)		Average holding size (ha)	
	85-86	90-91	85-86	90-91	85-86	90-91	85-86	90-91	85-86	90-91
Less than 1ha (marginal)	463,403	538,000	61.55	63.8	200,584	218,000	20.46	21.5	0.43	0.4
1-2ha (small)	155,311	16,800	20.63	19.9	222,589	228,500	22.71	22.5	1.43	1.4
2 to 4ha (semi-medium)	92,173	96,100	12.24	11.4	264,562	261,100	25.97	25.7	2.87	2.7
4 to 10ha (medium)	36,353	36,600	4.83	4.3	207,648	206,900	21.19	20.4	5.72	5.7
10ha and above (large)	5743	5500	0.75	0.6	94,850	100,100	9.67	9.99	16.5	18.1
Total*	752,888	844,200	100	100	980,240	1,014,600	100	100	1.30	1.20

Note: *During the period of five years preceding 1985-86, the total number of holdings had already increased by 114,801.
Source: Government of Himachal Pradesh n.d.; SHERPA 1992

Table 5: Number and Area of Operational Holdings by Size and Class (Uttar Pradesh Hills)

Size	Number of holdings		Holding percentage		Area (ha)		Area percentage		Average holding size (ha)	
	80-81	90-91	80-81	90-91	80-81	90-91	85-86	90-91	85-86	90-91
Less than 1ha (marginal)	515,319	537,121	69.85	71.19	175,264	199,564	24.1	28.07	.34	.37
1-2ha (small)	126,264	127,022	17.12	16.84	174,181	177,478	23.8	24.96	1.38	1.40
2 to 4ha (semi-medium)	68,910	68,064	9.34	9.02	187,915	184,428	25.7	25.94	2.73	2.71
4 to 10ha (medium)	24,683	20,520	3.34	2.72	138,352	113,933	18.9	16.03	5.61	5.55
10 to above (large)	2605	1771	0.35	0.23	54,676	35,569	7.5	5.00	20.99	20.08
Total	737,781	754,498	100.00	100.00	730,388	710,972	100.00	100.00	0.99	0.94

centages of marginal holdings. Of more concern is that, on average, each holding is comprised of many parcels of land that may be scattered. In some areas of the Uttar Pradesh hills, the number of such parcels varies between six and ten.

Main Crops

The main crops are rice, wheat, maize, barley, ragi (finger millet), oilseeds, and pulses. In addition, potato is an important crop. Area under horticulture has been steadily increasing. In the early 1950s, less than 20,000 ha were under horticulture; now there are 500,000 ha. Substantial productivity gains have been made in food crops. Wheat productivity has nearly doubled in Himachal Pradesh and Jammu and Kashmir. Rice productivity has increased by 25–35 per cent. However, all three subregions remain food deficient and are covered by extensive public distribution systems. For example, in Jammu and Kashmir, food-grain imports (rice and wheat) rose from 39,000 tonnes in 1960-61 to 375,000 in 1991-92 (Jammu and Kashmir State Land-Use Board, 1995). Jammu and Kashmir per capita annual food-grain production was only 182 kg in 1991-92. Per capita net sown area is only about

0.09 ha in Jammu and Kashmir. Net irrigated area as a percentage of net sown area is about 40 per cent in Jammu and Kashmir, 17 per cent in Himachal Pradesh, and 34.9 per cent in the Uttar Pradesh hills.

Land Quality

The terrain is steep and mountainous, and availability of fertile, arable land is limited. Net sown area covers 19,829 sq.km., about 15 per cent of the reporting area. Actual forest cover (including dense and open forests) is 55,620 sq.km. (17 per cent of the geographical area). Large areas are rocky and glaciated or constitute treelands, grasslands, pastures, and barren lands (excluding urbanised areas). The following figures indicate the amount of degraded lands in Jammu and Kashmir (Jammu and Kashmir State Land-Use Board 1995): degraded agricultural lands 331,000 ha; degraded forest lands 790,000 ha; cultivated wastelands 151,000 ha; and non-cultivated wastelands (including snow-covered and glaciated areas) 134,000 ha. In Himachal Pradesh, against a geographical area of 55,670 sq.km., the area surveyed cadastrally was only 33,675 sq.km. in 1992-93. The remaining area was unsurveyed and, hence, does not appear in the revenue records. Forest Department statistics report an area of 37,591 sq.km. under forests. This figure is obviously related only to the legal definition. Actual forest cover as assessed by satellite imagery is only 12,520 sq.km. (FSI 1997). Problems of land degradation are severe and 73 per cent of the watersheds are affected (National Land-Use Board 1995). In the Uttar Pradesh hills, the entire geographical area is the reporting area. While the recorded forest area is 34,249 sq.km., the actual cover is only 22,660 sq.km. In 1991, an area of 6,125 sq.km. was categorised as barren, uncultivable, and wasteland. If the difference between the recorded and actual forest cover is added to barren/uncultivable/wasteland, nearly one-third of the Uttar Pradesh hills is either rocky/snow-covered/glaciated or, otherwise, unproductive, degraded land. In addition, there are other degraded forest and agricultural lands.

Land Property: Tenure and Titling

Hill societies in the NWHRI are largely agrarian. About four-fifths of the people depend on land resources directly or indirectly. Various forms of land-use titling are utilised for privately operated land holdings as well as for common property resources. Governments have realised that land-use rights and land-tenure titling in an equitable manner (or granting of usufruct rights) are essential measures for appropriate, optimal, and sustainable management of land resources. It is recognised that exclusivity and security of tenure increase the holder's stake in the land and provide a strong incentive for maintaining and improving it.

Jammu and Kashmir

During the nineteenth century, land tenure was insecure and exploitative while taxation was heavy. In 1889, settlement work began. There was some reform but, in overall terms, the system was loaded against long-term land improvement. Productivity levels remained extemely low. After Independence came laws that made sweeping land reforms. In 1950, the Big Landed Estates' Abolition Act was adopted through which the right of ownership of land beyond 22.75 acres (9.2 ha) was expropriated and it stood transferred to the tillers of such land to the extent of their actual possession. If no tiller was in possession of the large landholder's land it was vested in the state without encumberance and was to be transferred to tillers. Another important piece of legislation was the Jammu and Kashmir Agrarian Reform Act of 1976. The new law stipulated that all 'rights, title and interest in land of any person not cultivating it per

sonally in 1971 would be deemed to have extinguished with effect from 1 May 1973'. This act also imposed a land ceiling of 12.5 acres (5 ha) for a family. The land thus declared surplus was to be allotted to tillers having less than 2.5 acres (1 ha), refugees, and landless agricultural labourers. Through the implementation of these reforms, absentee landlordism was abolished, and cultivators were allowed to acquire proprietorship of land they tilled.

For land replenishment, the Jammu and Kashmir Land Improvement Scheme Act was adopted in 1972 'to provide for the making and execution of land improvement schemes for soil conservation, improvement of soil resources, prevention or mitigation of soil erosion, protection of land against damage by floods, farm drainage or other works incidental to, or connected with, such purposes'. Provision was made for the setting up of district land improvement committees that could direct the preparation of a scheme. The owner of land who benefitted from the scheme was required to pay for it.

A comprehensive land revenue law was passed in Jammu and Kashmir in 1939. It repealed earlier land regulations and replaced these, making provisions for the maintenance of proper record of rights, for updating these records, for surveys and demarcation of boundaries, and for assessment and recovery of land revenue. The Land Grant Act 1960 provides for the grant of land by the government for building purposes on payment of premium and ground rent. The leased land cannot be sold without government permission.

Himachal Pradesh

Before Independence, agrarian relations in the area that now constitutes Himachal Pradesh were based on exploitative, feudal practices that were characterised by tenancy and sharecropping arrangements. Typically, there were no village common lands excepting village sites and grazing grounds. All uncultivated land was the property of the ruler and, wasteland, where broken, was put to use by the person who broke it. Land revenue was collected in cash and kind.

The Himachal Pradesh Abolition of Big Landed Estates' Land Reforms' Act was promulgated in 1953. This was followed by the Tenancy and Land Reforms' Law 1972, the Land Ceilings' Act 1972 and the Common Lands' Vesting and Utilisation Act 1974. The land ceiling was set at two hectares for irrigated land, three hectares for unirrigated land, and six hectares for orchards. Land nationalised was redistributed to the landless or smallholders. Village common lands were vested in the state. A system of allowing landless farmers to cultivate government land was established and such allocation had the possibility of being converted into a secure tenure. This system has been suspended and new policy, in this regard, is yet to emerge. Under the provision of the Village Common Land Vesting and Utilisation Act 1974, common lands were vested in the state with a few exceptions. However, government wastelands, grazing lands and unprotected and class III forests are widely treated as open-access resources (Gulati 1998). Over time, more areas have been brought into the category of Demarcated Protected Forest and placed under cultivation. The result is reduction in land available for grazing. Fuel problems have also become acute.

Land reforms in Himachal Pradesh have been implemented successfully. Most land holdings are wholly owned or self-operated. Landlessness is, comparatively, uncommon. Current problems are smallness of holdings and fragmentation. The average land holding size is only 1.2 ha and decreasing. Often, it is in several parcels. Another problem is the incompleteness of cadastral survey and demarcation.

Uttar Pradesh Hills

In the Uttar Pradesh hills, the land-tenancy system was inequitous and loaded against the poor. The sovereign could give away a piece of land as a grant to anyone for services rendered at the expense of an existing right. Although the British started land settlements in 1815, for a long time the Uttar Pradesh hills continued with the traditional village proprietary system based on custom and case law. Measured land was private property and did not present serious problems; unmeasured land did. After Independence, in response to incessant public pressure, the Nayabad Grant Act of Kumaon liberalised the access of people to unmeasured lands which made it possible for villagers to extend their agricultural holdings. The negative environmental consequences of this law were so severe that it had to, be repealed in 1973. The Kumaon and Uttarak hand *Zemindari* Abolition and Land Reforms Act was promulgated in 1960. It replaced the multiplicity of tenures to just three.

Policies, Rationale and Impacts

In Table 6, an attempt is made to list a few typical policy initiatives, their apparent rationale, and their impacts.

Case Study on Consolidation of Land Holdings in the Hills of Uttar Pradesh: Beef Village Experiment

Consolidation of Land Holdings' law was enacted in Uttar Pradesh in 1993. It was a village development measure that was meant to boost agriculture through the compaction of plots comprising of land holdings. The scheme was resisted in hill areas where agricultural plots are extremely small, and smallholdings can consist of multiple tiny parcels of land at different altitudes, the management of which is difficult, expensive, inefficient, and time-consuming. In Beef Village (Badkot *Tehsil*, Uttarkashi District) the initiative was taken by Rajendra Singh Rawat, the Block *Pramukh* (CDS 1996). The total area of the village is 167 ha of which only 50 ha could be consolidated legally under the Land Reforms' Act. The rest of the land was mostly barren, paths, drains, government land, etc. The village has 88 families. The total number of plots was 3,131 recorded in the names of 55 landholders. Under voluntary consolidation, only 40 landholders took part and their holdings were consolidated into 49 *chaks* (consolidated parcels of land). One-fourth of the total plots remained outside the consolidation process. The 49 formed *chaks* now have only 36 landholders. The advantages that accrued to landholders were

- parcels of land were drastically reduced making agricultural operations easier, less time-comsuming, less expensive, and more efficient;
- fencing, where required, became easier;
- women, who perform most of the agricultural operations, obtained relief in terms of time and physical effort; and
- in consolidated plots, agriculture, horticulture, and animal husbandry could be practised in an integrated manner.

Many difficulties a1so were experienced. Nearly one-fourth of landholders opted out. Holders of tiny parcels could not benefit. Physical possession of lands changed but the title problem remained. By and large, the experiment was deemed to be an indicator of future success. The desirability of encouraging such voluntary programmes has been emp hasised.

Case Study on Soil Erosion Incidence Following Change in Land Use: Pranmati Watershed

In Pranmati watershed (area 94 sq.km. encompassing nine villages), rainfed agriculture, pasture and forest were the three broad land uses in 1993 (18.5, 7.5, and

Table 6: Typical Land-related Policies, Rationale and Impacts in the NWHRI		
Policies/Laws	Rationale	Impacts
Country-wide Land Survey (19th century)	Fix territorial identities Demarcate boundaries Improve revenues Plan road, rail and communication systems	Political and economic management improved Infrastructural development took place Boundary disputes reduced
Land laws and land settlements (19th an early 20th century)	Provide some kind of tenurial security to landholders Facilitate imposition and recovery of government taxation	Tenure systems continued to be hierarchical and multiple with actual tillers often becoming tenants at will; intermediaries continued to exploit the tillers
Forest Act 1878	Improve management of forests Delineate forest lands Conservation	Forest settlements initiated User claims accommodated to some extent Unmeasured lands remained unregulated and were often overdrawn to almost exhaustion
Policy enunciated in 1893 (in Uttar Pradesh hills) declaring unmeasured lands as 'district protected forests' and Forest Policy 1895	Prevent over-use of unmeasured land Regulate access	Resentment against authorities Efforts were made to increase the area of reserved forests Commercial use of forests became a policy priority affecting resource access of people People burned forests
Policy accepting recommendations of Kumaon Grievance Committee (1921) in the Uttar Pradesh hills	Contain disaffection and dissatisfaction Address needs of local communities for forest resources to which they had historically had access	Level of people's dissatisfaction came down but shift towards industrial and commercial afforestation and use of contractor system created problems Forest degradation continued
Land reform legislation enacted soon after Independence	Secure land tenures and eliminate intermediaries Empower tillers to have greater control over their lives and resources	Positively helped small landholders. Land productivity improved gradually for long-term investment now became possible Fragmentation of land continued and created problems of land management
Land ceiling legislation	Reduce social disparities Distribute surplus land amongst the landless or small landholders	Small landholders and many landless persons benefitted However, many people managed to retain large holdings under false names and groupings
National Forest Policies (1952 and 1988) and recommendations of National Agricultural Commission 1976	Emphasise increase in supply of fuelwood and grazing needs and mobilise people for tree growing (1952 policy) Shift emphasis to production forestry (NAC 1976) Stress protection and environmental functions of forest and designate community needs for fuel/fodder as first priority (1988 policy)	Changing policies created problems in management and quality of forests People did not identify with forests Community forests deteriorated Plantation programmes became industry-oriented rather than people-oriented or environment-friendly
Forest Conservation Act 1980	Prevent loss of forest land to non-forest uses	Diversion of forest lands to non-forest uses came down sharply Many development projects for which forest land was the only available land were delayed Obtaining clearances from central government took too long resulting in public protests; so much so, that, in 1988, a Fell-the-Trees movement was launched in the Uttar Pradesh hills
In 1981, orders issued banning green felling of trees above 1,000 m in the Uttar Pradesh hills	Response to the intensity of protests especially by the Chipko movement	Helped in improving the green cover at higher altitudes but scientific silviculture also stopped, which might affect long-term health of high hill forests

Joint Forest Management Policy 1990	Emphasise community participation in forest management Extend principle of participation to government forests with provision for benefit-sharing by communities	The joint forest management initiative has started giving results but institution-building remains a problem
Biodiversity, wildlife laws and policies (setting up of biospheres, parks and sanctuaries)	Provide a long-term scientific measures Provide aesthetic, environmental and economic benefits Maintain ecological balance	People's access drastically reduced For affected communities, it amounted to a challenge to their survival Friction between park/sanctuary/reserve managements and affected communities has developed

64.5% respectively) (Sen *et al.* 1997). The altitude range is 1,120–4,070 m. Farm holdings were small (average 1 ha) and fragmented (6–8 locations). About 25 per cent of cu1tivated land was highly s1oping terraces, 32 per cent medium-sloping terraces, and 43 per cent low-sloping terraces. All terraces were outward-sloping. Potato was the dominant crop (50%) followed by *Amaranthus* (23%). Soil loss increased with steepness of slope. This effect was most pronounced for potato for which soil loss from moderately and highly sloping terraces was 12.6 and 106 times higher, respectively, than in low-sloping terraces. Soil loss for potato was 7.65T/ha/yr on moderate slopes and 64.4T/ha/yr on high slopes. As much as 85.4 per cent of total soil loss was accounted for by potato cultivation. Potato fields received the highest amounts of manure (28.5T/ha). By-products of potato did not have any fodder value unlike traditional crops. Farmers' decisions on choice of crops are guided largely by market demand and profitability. Although traditional crops result in low levels of soil loss (0.3–13.4T/ha/yr), the area under potato cultivation was found to be rapidly increasing because of growing emp hasis on the monetary economy. The study concludes that soil erosion, resulting in unsustainability of upland agriculture, was increasing because of the shift in land use to potato cultivation.