ICIMOD

MOUNTAIN ENVIRONMENTAL MANAGEMENT

Discussion Paper Series

THE ROLE OF LAW IN MOUNTAIN ENVIRONMENTAL MANAGEMENT

Chhatrapati Singh

MEM Series No. 7

1991

International Centre for Integrated Mountain Development

THE ROLE OF LAW IN MOUNTAIN ENVIRONMENTAL MANAGEMENT

MEM Series No. 7

Chhatrapati Singh is affiliated with The Indian Law Institute, Bhagwandas Road, New Delhi

December, 1991

International Centre for Integrated Mountain Development (ICIMOD)

Kathmandu, Nepal

Preface

The transformation of the mountain society of the Hindu Kush-Himalayas from the traditional, isolated and self-contained subsistence economic communities of the past to those widely interacting with the modern contemporary world has been sudden and rapid. If such transformations initiated by increased physical accessibility and socioeconomic changes have improved the quality of life to some extent, then they have also been the causes of negative ecological impacts in these mountains.

The mountain environment is therefore passing through intense and dynamic changes and a proper understanding of these changes, though complex, is vital for the environmentally sound management of these diverse and fragile ecosystems to ensure rapid economic development in the mountains. The Mountain Environmental Management Programme of ICIMOD is primarily concerned with better understanding of the complex dynamics of changes in the mountain environment with particular reference to the management of natural resources in order to contribute to the overall objective of ICIMOD to promote sustainable development of the mountains and the people therein, with primary focus on the Hindu Kush-Himalayas.

Major aspects of the complex dynamics of management in the mountain environment in the context of sustainable development were examined and discussed during the "International Symposium on Mountain Environmental Management" held at Kathmandu from 11 to 14 April, 1989. The Symposium was organised jointly by Unesco, under its programme on Man and the Biosphere, and ICIMOD, under its programme on Mountain Environmental Management.

This paper was one of the theme papers commissioned for presentation at the Symposium, and it deals with an extremely important and complex issue, viz., the Role of Law in Natural Resource Management, particularly, in the management of forests with reference to Himachal Pradesh, India. This paper highlights the legal complexity in dealing with environmental problems in a large federal State like India, especially since environmental laws have developed here through government acts and also through the decisions of the courts. It also recommends several agenda for future research on the role of law for environmentally sound development in India in general and in Himachal Pradesh in particular.

ACKNOWLEDGMENTS

The author was assisted by Mr. P. K. Chaudhry, of the Indian Law Institute, New Delhi, in the data collection for this work. His assistance has been invaluable.

The cooperation of various government departments and officials in Himachal Pradesh and in New Delhi facilitated this work. The author is particularly indebted to the officials of the following agencies:

Directorate of Land Records, H.P.

Department of Industries (Geological Wing), H.P

H.P. State Electricity Board

Public Works' Department, H.P.

Forest Department, H.P.

H.P. Tourism Development Corporation

Central Water Commission

Indian Bureau of Mines

CONTENTS

List of Tables

ABBREVIATIONS

A.I.R.	.....	All India Reporter
C.W.C.	.....	Central Water Commission
F.D.	.....	Forest Department
GOI	.....	Government of India
GOHP	.....	Government of Himachal Pradesh
H.P.	.....	Himachal Pradesh
H.P.T.D.C.	.....	Himachal Pradesh Tourism Development Corporation
I.L.I.	.....	Indian Law Institute
PWD	.....	Public Works' Department
RvD	.....	Revenue Department
RD	.....	Rural Development Department
VDC	.....	Village Development Committee

Introduction

The primary aim of this work is to first systematically analyse the role that law plays in the management of ecology, especially in the mountain regions; document the main customary and administrative processes that law promotes or inhibits in relation to State formation and environmental management; identify the major problems; and then mainly to suggest what type of work programmes or research needs should be carried out if we are to come up with alternative legal frameworks for equitable and sustained ecological development.

To introduce the overall theme of this paper, it will be useful to begin with some observations about the role of law in management and planning in general.

Although planners have not been taking law as an important variable for consideration in their programmes, policies, or projects, it is important to realise that no scheme can be successful unless from the very beginning - at the designing stage - it takes the existing legal parameters into account. The operative laws partly define the framework of possible actions and actors in terms of organisation, management, beneficiaries, administration, transactions, and types of contract. If a plan or project is made without recourse to this framework, sooner or later it is bound to run into various problems, whether the plan or project be one of afforestation, irrigation, housing, electrification, or services. We have seen in India how various land reform programmes have failed because of the fact that they did not take the tenancy laws into consideration at the beginning and, similarly, how social forestry programmes have been turned into commercial forestry because of the fact that the plans did not at the beginning take account of the legal rights of the intended beneficiaries and the manner in which such rights could be realised. That legal framework is extremely important for any type of planning becomes evident if we keep another factor in mind - the fact that the actual policy at work at the administrative level is the one that is embodied in the operative laws, no matter what any other policy statement may say. India's forest policy is the one expressed in the Indian Forest Act, 1927 - one of total exploitation of the forests, and not the National Forest Policy which the Government has been propagating since 1950 onwards. Similarly, the water policy is the one expressed in the water laws, and not that of the National Water Policy of 1987. Planners often fail to understand the difference between the actual policies and the officially propagated policies. The involvement of law professionals in the planning and amendment of planning or project designing will perhaps take a long time to come; it involves a major transformation in the nature of social science, management research, and pedagogy. In the meantime, it needs to be noted that if genuine eco-development plans or projects are to be designed for integrated development of the mountains, it cannot be done without taking into account the legal framework at the project design stage. Similarly, a study that has not taken note of the legally legitimised arena of actions, actors, organisations and administration, will be grossly inadequate for any practical purpose.

Although environmental law issues have a common basis -- acquisition and exploitation of common property resources through law, usurpation of local rights, hegemony over community resource management systems -- there are some issues that are peculiar to mountain regions such as specific land use patterns, sparse population distribution, dependency of the plains on the mountains for water resources, and special flora and fauna and scenic beauty which attract tourists[1]. These issues make it necessary to study the application of environmental legislation as a special and different case for the mountain regions. The study presented herein is relevant for the mountain ecology in general, but, for the sake of empirical and analytical convenience, the database is limited to the State of Himachal Pradesh in India. There are important reasons for selecting Himachal Pradesh for empirical study. The State is illustrative of the problem faced in mountain ecology in some very significant

---

[1] For a detailed analysis of the dependency of the ecology of the plains on that of the mountains, especially with reference to the river systems, see: *Report of the Irrigation Commission*, Ministry of Irrigation and Power, Government of India, 1972. Vol. 1.

ways, including the legal problems. First, from the point of view of flora, fauna, and natural resources, it is comparatively more richly endowed than many other regions of the Himalayas. An appropriate legal management of the ecology of this State will have significant lessons for all other regions. Second, from the point of view of management, the State is politically and legally nascent and the fluidity of structures offers scope for experimentation and alteration, including in terms of people's habits, beliefs, and State formation. There exists, thus, a more realistic opportunity for social engineering through law in Himachal Pradesh than in many other States in India. Evidently, these possibilities for legal engineering have an important bearing on any search for legal alternatives for development in other regions of the Himalayas.

Analytically, environmental law concerns can be broken down into specific natural resource concerns. Amongst the most significant natural resources are the land, forest, and water resources. The study here is confined to the legal regime concerning the acquisition, utilisation, and distribution of these three resources, with specific reference to Himachal Pradesh. In the context of this State, however, there is another aspect that demands our special attention -- that of tourism -- since it has a bearing on ecology. The scenic beauty of the State has necessitated not only the promulgation of special laws to reserve forests, parks, and sanctuaries but also the construction of lengthy road tracts to tender interior accessible to the public and hence also to ecological disaster. But, before we begin, it will be necessary to explain the plan of exposition in this paper.

Presentation, Research Logistics, and Methodology

To understand the problems related to environmental law in the mountains, it is necessary to have a general comprehension of the environmental legislation in India, -- the resource exploitation. The work, therefore, begins with basic observations about environmental legislation in India, its role in resource use and State formation, its interface with administration and management, and how all this affects the mountain ecology. This is followed by a general overview of the environmental legislation in the mountains, with specific reference to Himachal Pradesh.

The Himachal Case Study is analysed next, with regard to the legal regime pertaining to land, forest, water, and tourism respectively. This is based on the secondary data obtained from the State Government. The analysis in each case is done from the perspective of the following:

i) the Centre - State relation;
ii) power, accountability and coordination of the State agencies involved in the management of resources;
iii) resource utilisation and management under statutory and customary legal provisions; and
iv) consequences of the enforcement of these provisions.

In each case, the problems, the work, and the research agenda for seeking alternative legal models, as well as the further empirical research required to do this, are outlined.

In the concluding part, the results of the Himachal case study are extrapolated for environmental legislation problems relating to the mountain ecology in general.

The secondary data sources, on which the analyses are based, are given in the footnotes. The availability of these sources from various government departments in Shimla and New Delhi and other agencies is as indicated in the acknowledgements.

For the primary data survey, personal visits were made by road to various villages to observe the actual progression of social forestry projects, use of common lands, arrangements in the *Rakhas*, people's perceptions of the ongoing programmes, laws and rules, and the problems faced by local level organisations such as the *Panchayats*, Village Development Committees (VDCs), and *Mahila*

Mandals. The villages in the following districts of Himachal were visited: Shimla, Bilaspur, Chamba, Hamirpur, Kangra, Kinnaur, Mandi, and Solan.

The Framework of Environmental Laws in India

Environmental laws are an instrument for the control or regulation of the acquisition, use, and distribution of the natural resources of a country. In an economy of abundance -- where there are vast amounts of resources but little use for them -- socially legitimised means or legal control are not necessary, but as the resources become scarce, the law can become a potent instrument in the hands of the State to regulate the use of resources. Economic abundance of resources usually permits common access usually in a non-cash economy; this is often governed by customary rules which facilitate not only a sustained-yield use of resources but also equitable need-based distribution and management by the people. State intervention in these customary rules through laws are, hence, invariably attempts to alter the following:

- o access to the resources, by either privatising common property or deprivatising group property,
- o yield of resources by production based-exploitation and not a generation-based use, and
- o by redefining the 'need' criterion for use of resources, 'need' begins to be legally defined not in terms of what the local community needs but in terms of 'public purpose' or 'national needs'[2].

Environment-related legislations in India clearly reveal these facts of State interventions. Precolonial intervention limited itself to proclaiming the power of eminent domain over the region and to special hunting rights for the kings in the forests. It respected the traditional customary rights of the local people. The post-colonial regime, which overlaps with the Industrial Revolution, brought about a totally new phase in environmental legislation. The period from 1867 to 1927 marks a major phase in the colonial struggle for legal control over resources. The abolition of the traditional rights and customary rules governing forests began in the very first draft of the Forest Act of 1865, it culminated with the total control of the State over the forest resources as outlined in the Indian Forest Act, 1927, despite numerous local protests and counter struggles. These protests brought compromises at the State level, but basically there is a uniformity in the application of the forest laws in India[3]. Together with the forest laws came the Indian Land Acquisition Act, 1894, and other laws concerning mines, ores, and water resources. The change in political governance at the time of Independence, and the new Indian Constitution, did not bring about any radical changes in these natural resources' laws. India has continued with these colonial legislations. The laws that served the purposes of the colonial government have continued to serve the same or similar purposes for the independent government. The main features of these laws are the proclamation of the power of eminent domain of the State over the resources, privatisation as State monopoly, and evaluation or implementation in terms of revenue generation. The application of these principles through the laws is uniform for the plains as well as for the mountains, especially where central acts which apply to the whole of India, such as the Land Acquisition Act, 1894,[4] are concerned.

Classical or neo-classical economists may argue that privatisation of common resources is an inevitable consequence of the industrial development process. Such economic theorists usually

---

2 For a more detailed statement of the legal crisis in relation to environmental issues see, Chhatrapati Singh, "Environment and the Law" (Monograph). Indira Gandhi Centre for Human Ecology, University of Rajasthan, Jaipur, Feb. 1988.

3 A general historical account and the struggles in the Kumaon areas are documented in Ramchandra Guha's: "Forestry in Pre-British India", *Economic and Political Weekly* Vol. XVIII, No. 44, 45 and 46 (1983).

4 For a more detailed discussion see: Chhatrapati Singh: Emerging Principles of Environmental Laws for Development", in J. Bandyopadhyay, N.D. Jayal, U. Schoettli, and Chhatrapati Singh (Eds). *India's Environment: Crises and Response*. Natraj Publications, Dehradun. 1985.

measure development in terms of production and consumption. They leave out completely the issue of benefit sharing in privatisation, as well as who, from the point of view of equity, ought to be benefitting from the exploitation of the resources. Moreover, such economic theories fail to truly represent reality because they do not grasp the relation between equity and production - how inequities, for example, can lead to the retardation of management systems, the implementation of unintended policies, and, consequently, the retardation of economic growth. Whereas more than 80 per cent of resources were common at the beginning of this century, barely 20 per cent remain so now because of laws passed as a consequence of the application of such economic policies. Some estimates would put this down to even 10 per cent. Even this greatly reduced amount of common property is not as freely available now as it used to be. There are numerous administrative rules and ordinances regulating their use. The benefits from common natural resources, whether in the hills or plains, have been almost wholly usurped by industrial, mercantile, and urban-rich base. The resources, as natural wealth, assets, or capital, which were until a century ago more widely distributed and freely available to people for their basic needs, such as housing, fuel, fodder, and food, have become monetised by a cash economy, and the gains from this cash economy go mostly to the property-owning class. The non-property owning class in India, it must be remembered, includes not only the vast majority of landless agricultural labourers, nomads, and artisans, but also tribals who constitute about 7 per cent of India's population (about 40 million); more than the total population of many countries. As a result of the environmental legislations in this century and the last, this vast section of the Indian population has been deprived of the resources that nature freely and bountifully provided for them. It is the same people whose labour is now being further exploited in the official environmental regeneration programmes such as the social forestry scheme.[5]

The first major consequence of environmental legislation, therefore, is that the source of livelihood upon of the non-property owning class, or of those having access to it marginally, is totally cut off. The second major consequence is that these classes are then forced to migrate and depend for their livelihood upon, those who have usurped the common resources. They migrate to the industrial, urban, or richer agricultural centres to sustain themselves in the cash economy. This is true for both the plains and the mountain regions.

It will be important to briefly review the significance of some environment-related legislations and the development of laws concerning the environment through the courts in independent India, besides those carried over from the colonial period. Environmental protection, in so far as land, trees, and water are concerned, is a more recent legislative concern; barely a decade old. The Forest Conservation Act, which applies to the whole of India, and which now restricts the use of any forest land for non-forestry purposes, was passed in 1980. The central protection of wildlife, through the Wildlife (Protection) Act, 1972, however, pre-dates the protection of forests. All other central environmental legislations, such as the Water (Prevention and Control of Pollution) Act, 1974, and the Environment Protection Act, 1986, concern control of water and air pollution. These protection laws, it must be noted, do not concern the former acquisition and utilisation laws such as the Indian Forest Act, 1927, and the Land Acquisition Act, 1894, which are still operative. Other Central and State legislations which are pertinent in the context of environment, especially land and water laws, did not arise from a sense of ecological concern. They arose in a totally different historical and ideological context -- the context of socialism and nationalism -- for purposes such as the redistribution of land, especially to the landless and marginal farmers, abolition of *zamindari*, consolidation of fragmented landholdings, and reclaimation of wastelands or uncultivated agricultural land for public use. To achieve these ends, numerous urban and rural land ceiling, land development, land reforms, and *zamindari* abolition laws were enacted throughout the 1950s and the 1960s. Since these laws do not have environmental concerns built into them, their provisions are now in conflict with the objectives of environmental regeneration or protection schemes.

---

[5] For a detailed critique see, Chhatrapati Singh: *Common Property and Common Poverty*. Delhi: Oxford University Press, 1986.

Along with these resources' protection, acquisition, and utilisation laws, there are also laws pertaining to the agencies or organisations that protect, acquire, or utilise these resources. Such laws too are of immediate environmental interest, since the management of the resources cannot occur without the agencies. Among such laws are the *Panchayat* Acts of all States and the Municipal Acts of the urban areas.

For a comprehensive account of environmental legislation, especially with reference to the laws generated by the courts, one must also take into account the relevant provisions of the Indian Penal Code and the Criminal Procedure Code, especially those concerning nuisance and negligence. Most of the pre-independence environmental cases came under these provisions of the codes. These provisions are still applicable all over India. In the post-independence era, they have seldom been used, either by the courts or by the people. What has been used, in the courts, instead, is the constitutional law. Herein lies a very important aspect of understanding both environmental legislation and State- formation in India. During the last decade, the courts, particularly the Supreme Court, have engineered a dramatically different type of environmental law in India; one that is different both in principle and in application from the government-made environmental laws. The statutes appeal to principles of criminal liability and administrative enforcement of standards whereas the courts, by interpretation of the Constitution, especially Article 21 -- the right to life, have created people's rights against the State and have developed principles of tortuous liability instead of criminal liability.[6] They have have not made use of any of the protective environmental legislations enacted by the State. It is important to note that many of the environmentally significant social actions in the mountains, such as stopping ecologically destructive mining or the construction of dams, have found their expression in litigations at the Supreme Court; stopping production by 50 odd mines in the Mussoorie and Dehradun hills in U.P., through Supreme Court orders, and checking the construction of the Tehri Dam on the Bhagirathi River are cases in point. The public interest litigations sustained by the courts throughout the last decade have opened up a new modality for people's action, often against the State, but sometimes to make new demands on the State's resources. The *Umed Ram* case from Himachal[7], in which the people demanded the construction of roads to their village and the Supreme Court granted it against the H.P. Government's will, is a case that illustrates the point. Whether this is ecologically the best alternative is a matter for analysis; the important point to note here is that, with the evolution of a different kind of environmental jurisprudence by the courts, the likelihood of court-aided environmental protection is as significant in India now as the statutory efforts by the Government. The possibility of court action has serious implications for social action; and this includes in the mountain regions. Already, many non-government organisations and voluntary agencies have either filed petitions in the courts or are in the process of doing so. These include efforts to stop mining, reclaim resources for the local people, protect natural forests, and demand alternative technologies, especially in hydroelectricity and irrigation projects[8].

The development of two different types of enviromental laws in India, one by the Government and the other by the courts, raises serious questions for the understanding of the nature of the Indian State and the ecological crisis. For the purposes of this paper, it is sufficient to take into account the basic motivational factors which have brought about this difference. For the Government, the ecological issue is one of conflicting industrial and land use policy and for the courts it is essentially one of benefit-sharing and the protection of people's rights. Through environmental legislations, the

---

6 Some important aspects of this type of litigation are documented in S.K. Agarwala. *Public Interest Litigation, A Critique*. New Delhi: Indian Law Institute Publication, 1985.

7 *State of Himachal Pradesh*. v. *Umed Ram Sharma*. (1986 [1] Scale 182).

8 The *Rural Entitlement Litigation Kendra*. v. *State of U.P.*, Case (A.I.R. 1985. S.C. 652.), at the Supreme Court succeeded in stopping 50 odd mines in the Doon Valley; the case against the Tehri Dam in already pending in the same court; the petition against the Narmada dam has been filed in the Gujarat High Court. There are numerous other such cases pending. For a detailed study of the legal issues of dam construction see: Chhatrapati Singh and P.K. Chaudhary: *Dams and the Law*. New Delhi: Indian Law Institute Publication. 1988.

Government has opted for the status quo of the development process and protection of its industrial policies, whereas the courts have opted for equity, without giving much thought to alternative development processes or needs.

Let us turn now to see what bearing this larger context of environmental law has for the mountain regions and what specific issues require more serious attention in different ecological and political situations.

Environmental Laws and the Mountain Regions

The Constitutional arrangement for control of resources prescribes a federal economy in which the States have power over land and water resources. Forests, which were orginally enrolled in the State List are now at the disposal of both the States and the Central Governments. The change was brought about by a constitutional amendment to the Concurrent List. The distribution of power in the Indian Constitution is described in three Schedules: The Union List, the Concurrent List, and the State List. In terms of territory and ownership rights, the land, water and forest resources belong to the States but in actual operational terms, however, the use of the mandate is a far more complex matter than mere ownership rights may suggest. This is because the States are dependant upon Central decisions, in some major ways, for financial resources and allocations in accordance with the Centre-State revenue arrangements in the Constitution. This federal arrangement necessitates separate land, water, and forest laws in each State. With respect to forests, however, the Indian Forest Act 1927, with minor amendments, has served as a model which most States have adopted for their individual purposes. So far the power available in the Concurrent List has been used by the Centre only to enact the Forest Conservation Act, 1980, which limits the State's power to use forest land for non-forestry purposes without the Centre's permission. Since 1980, the Act has been used stringently by the Centre to stop the conversion of forest land into agricultural, industrial, or homestead lands in the States. This policy, however, is in conflict with some of the objectives of social forestry, especially where lands have to be alloted to forest cooperatives, non-government organisations, landless farmers, or tribals.

The Himalayan Region is spread throughout twelve States, and covers a total land area of 61.5 million hectares. This total land mass is, hence, regulated by twelve different kinds of land, water, and forest laws, besides the Central Acts such as the Forest Conservation Act and the Land Acquisition Act which apply to all States. Since large parts of most States are in the plains, the laws do not make a distinction between the plains and the mountains and they are applied uniformally. The geographical and socioeconomic conditions of the mountains are, however, distinctly different from those of the plains. Of the 61.5 million hectares of mountain land, 17.8 million is covered by dense forest and another 1.7 million hectares by alpine pastures; over two-thirds of which are in the State of Himachal Pradesh alone. Not all grazing lands, however, are natural. Only those above 2,500 to 3,000 metres, where trees do not grow, qualify as alpine pastures, the rest, by and large, are the results of large-scale deforestation. The land and forest laws in the mountain regions do not, in general, make special provisions for grazing land. However, grazing in the Himalayas is intense. It is one of the major causes of denudation. The region supports 20 million cattle according to the statistics of the Ministry of Agriculture. Besides the cattle, there are 10 million buffalo, 3 million sheep, and 6 million goats. The Western Himalayas alone (consisting of Jammu and Kashmir, Himachal Pradesh, and eight hill districts of U.P.) possess about 50 per cent of the cattle, 40 per cent of the buffalo, 90 per cent of the sheep, and over 50 per cent of the goats. The treeless sub-alpine and alpine pastures are extensively grazed by these animals in the summer[9].

[9] A critical analysis of the grazing land situation is available in: *The State of India's Environment* (1984-85). Centre for Science and Environment. New Delhi. pp. 3-18.

Besides the lack of legal control over grazing there are various other legal issues of significance in the Himalayan context which relate to the management and use of resources. The first and foremost is the fact that, unlike in the plains, land settlement and legal classification of land have not been completed in large parts of the hills as yet. The land records, therefore, are grossly incomplete and inaccurate. In Himachal Pradesh, for example, the same area of land is classified as revenue land in the Revenue Department's records and as forest land in the Forest Department's records. This is because the appropriate transfer of land from the Revenue Department to the Forest Department has not taken place. The Forest Departments also have not completed settlement of rights in many areas, hence the classification of land as reserved forest or protected forest is incomplete. There are two main factors behind this, first, the remoteness and inaccessibility of the region as compared to the plains and, second, a comparatively greater availability of the forest resources in areas that do not invite the State's legal intervention. Because of the abundance of resources, people had free access to them. As noted earlier, legal intervention becomes necessary only when the resources begin to become scarce. The massive exploitation of resources in the hills, by legal and illegal means, has now generated the need to take the legal framework more seriously. In the meantime, the indefiniteness of land demarcation and the settlement of rights make any project planning and management extremely difficult, especially those in the context of afforestation and agriculture.

The next major aspect of environmental legislations in the mountains is the fact that the laws, by and large, have been enacted purely out of considerations of exploitation of the resources for the benefit of the people living in the plains. This becomes more evident if we look at the law pertaning to water resources. Most of them are aimed at the management of energy or irrigation potentials for the plains. Concerns about the availability of water in the rural or urban mountain areas find little or no consideration in these laws. As a consequence, most of the hill stations, from Shimla to Darjeeling, and even Ooty in the Nilgiris in the South, now face a major water crisis.

Laws concerning tourism and local level organisations, such as *panchayats* and municipalities, make evident the fact that no integrated view has been taken of the mountain ecology in enacting legislation. Laws concerning tourism have connected themselves mainly with the generation of revenue for the States, with little concern for saving the resources that attract the tourist. The *panchayat* and municipal laws are not related to ecological development. These organisations are financially impoverished, and because of this the mandate and obligations given to them for the protection or maintenance of the environment, under the *panchayat* and municipal laws, cannot be fulfilled. Instead of economically empowering these statutory bodies the Government, through the Ministry of Welfare, has set up *ad hoc* ground level agencies such as the Village Development Committees, *Mahila Samities*, *Yuvak Mandals*, etc. Besides having no legal power to bargain with the Government in terms of management, such agencies are often in conflict with statutory bodies[10]. In Uttar Pradesh, for example, the panchayats have filed numerous petitions in the local courts against the *Yuvak Mandals* for use of *panchayat* lands. Such conflicts are going to retard the environmental regeneration programmes. Careful consideration needs to be given to the ground level organisational set-up, if efficacious management of projects and programmes is to be planned. The organisational matters in the hills are a little more complex because the legal intervention there, through the forest and *panchayat* acts, has taken a different route and this is due mainly to the struggle put up by the local people against the exploitation of resources. The struggles in the Kumaon and Gharwal hills, for example, forced the British to compromise on the Forest Act and allow for Forest *Panchayats* which had a greater access to and power over the forest produce. These Forest *Panchayats* were given statutory recognition in 1950 through the U.P. Forest *Panchayat* Rules, 1950, which apply to the hill areas only. The demarcation of forests is also somewhat different in the U.P. hills than in the plains. The law there has a provision for 'civil forests' over which the local people have greater control and access. In Himachal, before the formation of the State, Forest Societies, which come under the

---

[10] For details see, Chhatrapati Singh's: 6 Volume Reports on *Forestry and the Law in India*, submitted to the Ministry of Environment and Forests, Government of India, in 1986, especially, Vol, IV: *Panchayats, Forestry and the Laws*, which is relevant to the discussion here.

Cooperative Act, were the main local level organisations involved in forestry apart from the Forest Department. These societies still exist legally but are now operationally defunct.[11]

In the mountain regions, it is also important to take note of the traditional community management systems with regard to the local level organisations. Such organisations are governed by customary laws which define not only the beneficiaries and the administration but also the criteria for accountability and responsibility. The *Rakhas* in Himachal Pradesh are one such traditional system for community management of village forests.

There are other special needs of the mountains which are not covered by the land laws. The most significant amongst them are issues concerning landslides and seismicity. Since the Himalayas are a comparatively young mountain range, change in landmass formation and contour are ubiquitous. Hundreds of lives and property worth crores of rupees are lost every year because of landslides. No special legal provisions for compensation or rehabilitation exist. The land laws do not even take into consideration these special problems in the mountains. Compensation and rehabilitation is an *ad hoc* arrangement left to the wishes of the Government. There are no zoning laws which can guide the administration to execute town or rural planning in a manner that will take the problems of landslides and seismicity into account.

Another major reason for landslides in the mountains is extensive mining. Most mines are in the forest areas. Hence, they attract the provisions of the Forest Act. This act, however, makes arrangements only for the delegation of power so far as mining is concerned; it does not provide for ecological considerations in mining operations. Road building activities also contribute in a major way to landslides. Once again the forest laws, in the event of roads passing through forest lands, limit themselves to matters of giving permission. Such legal provisions do not bind the Department of Public Works to ecological considerations.

The above account outlines some of the major legal concerns with respect to mountain regions. The account is comprehensive but not exhaustive. An exhaustive account must specify in details laws, rules, ordinances, court judgements, and customary laws relating to each of the problematic issues, namely, land settlement, land classification or demarcation, delegation of powers among departments, afforestation, landslides, grazing, livestock, water use, water rights, powers and duties of *panchayats* and municipalities, the legal status of the *ad hoc* local organisations, and community resource management systems. The detailed account must do so for each of the 12 Himalayan States. Having done so, it must go on to specify the work programme or research agenda necessary for dealing with each issue as well as the action programmes for the respective governments or local agencies for undertaking follow-up work. Such an attempt has been made here, in an illustrative way, for one State, namely Himachal Pradesh.

The Ecology of Himachal Pradesh and the Framework of Its Environmental Laws

Himachal Pradesh, which became a fully-fledged State in January 1971, with an area of 55,763 sq. km, consists of the erstwhile Princely State known as the Punjab Hill State, which were consolidated into a single unit in 1948, and hill areas of the erstwhile Punjab State which were integrated into Himachal following the reorganisation of the Punjab in November 1966. The composition of the laws in Himachal therefore, are of three types; those carried over from the Princely States, those from the Punjab, and those which the Himachal Government has independantly enacted or adopted after the formation of the State. In addition there are customary laws, some dealing with common property resources, but mostly concerning family matters such as marriage divorce, inheritance, and adoption.

[11] Ibid., Vol. V: Forest Cooperatives and the Laws.

The State can be divided into three physical zones: (i) The Outer Himalayas, below 3,048m in altitude and with a rainfall between 150 to 180cm (ii) The Inner Himalayas, above 3,048m and with a rainfall of 75 to 100 cm; and (iii) The Alpine Pastures, comprising of areas which are under snow for 6 months a year. The annual rainfall in the State ranges from 283cm, in Kangra District, to 45cm,in the Lahaul and Spiti Area. The forest vegetation in all the three physical zones is governed basically by the Indian Forest Act which the Himachal Government adopted, with amendments, in 1968. Besides this there are 12 other forest laws governing the sale, transit, and procurement of minor forest products.

The six districts of old Himachal, viz, Kinaur, Mahasu, Mandi, Chamba, Sirmur, and Bilaspur, consist of five soil zones. The low-hill types of soils are suitable for potatoes, wheat, maize, sugarcane, ginger, paddy, and citrus fruits. The middle-hill type of soils are growing suitable potatoes, for stone-fruits, wheat, and maize. The high-hill types of soils are good for seed potatoes and temperate fruits. Ninety-three per cent of the people cultivating these soils lives in villages and only 7 per cent of the Himachal population live in the urban areas. The relationships of these people to soil, to market, and to the government administration are regulated by 90 odd land laws. The basic land laws, such as those concerning acquisition and ceiling, are framed by the adoption of old laws, after amendments, as applicable in the Punjab and other States, and the H.P. Land Revenue Act, 1954, which was operative in Himachal before the 1954 Act. As noted earlier, one of the major causes of land erosion in Himachal Pradesh is grazing. The State has enacted 3 specific laws pertaining to livestock. The Cattle Trespass Act, 1973, for example, regulates grazing on government land. Grazing on forest land is regulated by forest laws.

Himachal is well endowed with water resources. The Yamuna, Sutlej, Beas, Ravi, and Chenab rivers pass through the hills of the State and provide substantial hydropower potential. The Sutlej meets the Beas at Harike above Ferozepur before joining the Chenab at Madwala in Pakistan. The Ravi River flows into Pakistan about 26km below Jammu and Kashmir. There are 14 different laws dealing with water resources in Himachal, if one takes into account canals, drainage, and lakes. These laws concern water use, water resources, and the agencies regulating the use of water. Two basic laws governing use of water are the Northern India Canal and Drainage Act, 1965, and the H.P. Water Supply Act, 1968. The Canal and Drainage Act is modelled on the Punjab Act of 1958.

As per the data furnished by the Department of Public Works, the total road length in Himachal has increased from about 300km in the 60s, to 4,684km in 1977, and to 18,735km in 1983. There are excellent facilities provided by the Himachal Pradesh Tourist Development Corporation for tourists, ranging from air-conditioned luxury video coaches to regular buses for travelling to various scenic spots. In the Sixth Year Plan, the outlay for Himachal Pradesh in transport and communication was Rs 11,865 lakhs, out of which the sum of Rs 10,000 lakhs was for roads and bridges and Rs 700 lakhs for tourism. There are 13 State laws which are directly related to tourism, besides the sales' duty, and excise tax laws which are related indirectly. These laws principally concern the protection of monuments, the regulation of traffic, and the charging of tolls or tax. They have almost nothing to do with ecological protection or conservation.

Let us turn to look at each of these environmental aspects in detail.

Forest Legislation in Himachal Pradesh and Its Impact

In the context of traditional forestry and the new social forestry, the following laws become relevant.

The Indian Forest (H.P. Amendment) Act, 1968.
The Forest Conservation Act, 1980 (Central Act).
The *Mandi* Minor Produce Exploitation and Export Act, 1897.
The *Mandi* State Anti-Erosion Act, 1904.
H.P. Private State Anti-Erosion Act, 1904.

H.P. Private Forest Act, 1954.
H.P. Forest (sale of timber) Act, 1968.
H.P. Fruit Nurseries Registration Act, 1973
H.P. Municipal (Prevention of Soil Erosion and Hill Side Safety Rules) Act, 1975.
H.P. Forest Produce (Regulation of Trade) Act, 1982.
H.P. Preservation of Forests and Maintenance of Supplies of Forest-based Essential Commodities' Act, 1984.
H.P. Land Preservation Act, 1978.
H.P. Resin and Resin Product (Regulation of Trade) Act, 1981.
H.P. Village Common Lands Vesting and Utilisation Act, 1974.
H.P. *Panchayat* Act, 1968.
H.P. Ceiling of Landholding Act, 1972.

Unlike in other parts of India, the demarcation of land as 'reserved' or 'protected' forests began in H.P. only in 1986. Before that, (since 1952), only a few specific areas were demarcated. In the first round of land classifications, after 1947, most land classified as government land was taken over by the Revenue Department (RvD). In 1952, by Government notification (under Section 4 of the Indian Forest Act, 1927), many areas belonging to the Rv.D were 'transferred' on paper to the Forest Department (FD). This transfer was legally incomplete because the subsequent settlement (under Sections 16 and 17 of the Forest Act) was not done by the Forest Settlement Officer, hence the demarcation of such transferred land as 'reserved' or 'protected' was not carried out. Consequently, the revenue records were not alterd. These lands with forest coverage continue to exist in the revenue records as revenue lands. The FD's record (in the Annual Reports too), which show 32 per cent of the land in H.P. to be forest land, is legally void. Actually, untill the demarcation and settlement of rights are complete, only 10 to 11 per cent of the forested land will be with the FD. The legal implication of this is that the remaining forest land does not come under the purview of the Forest Conservation Act, and hence of the Central Government. The State Government is free to use such land for non-forestry purposes.

Realising the serious difficulties, the H.P. Government has set up a special office for a Chief Conservator of Forest Settlement who is to administer the demarcation process. So far, settlement in one district - Chamba - has been completed, a second one is underway. The National Social Forestry Project has been instrumental in hastening the process. The data of classification so far is presented in Table 1.

The other categories of forest and grazing common lands in H.P. are the *Rakha* and the *Shamlat* lands respectively. The *Shamlats* are common grasslands which came under the ownership of H.P. when the districts and the States were organised in 1962. The *Rakhas* are traditional forest preserves managed totally by the local village people. In the non-Punjab districts grazing lands are known as *ghasinis*; these *ghasinis* are both private and common. Through the Village Common Lands' Vesting and Utilisation Act, 1974, and the Land Preservation Act, 1978, the H.P. Government has acquired all these *Shamlats* and *Rakhas* and they are now government property. The *Shamlats* were acquired by the RvD. and the *Rakhas* by the FD. In the land settlement process now underway, all *Shamlats* are to be transferred to the FD. So far this has been only partly accomplished.

As for the traditional village forests people still perceive them as their own and continue to manage them in traditional ways. Usually such *Rakhas* are bound by very strict customary laws under which the villager is allowed to take wood only for the purpose of burning the dead. The *Rakhpal* -- the protector of the forest -- is maintained by common funds from each household in the village. There are strict punishments for violation of the customary rules. Although the Government has transferred the ownership of the *Rakhas* to itself, so far it has not interfered with the traditional community management systems. The interesting fact is that, under the National Social Forestry Project (Umbrella Project, as it is called in H.P.) which is aided and in some parts designed by the World Bank and the USAID, there is a large 'Community Woodlots' component. In designing and executing this component the FD and the funding agencies have had very little to learn from the *Rakha* system.

A mid-term review of the Project has shown that, by and large, the FD's 'Community Woodlots' have been unsuccessful[12].

Table 1: Forest Area According to Legal Classification

(in hectares)

	Forest Under the Control of the Forest Department						
Year	Reserved Forests	Protected Forests	Unclasified Forests	Other Forests	Total	Forest not under the control of the Forest Department	Total
1	2	3	4	5	6	7	8
1970/71	1,86,595	17,33,085	76,170	53,390	2,054,040	89,496	21,13,518
1971/72	1,86,367	17,32,932	76,170	58,557	20,54,146	89,498	21,43,614
1972/73	1,87,319	17,43,066	79,665	67,295	20,28,846	89,809	21,68,655
1973/74	1,87,289	17,43,066	79,729	66,954	20,77,038	89,809	21,66,847
1974/75	1,87,317	17,40,811,	79,725	63,420	20,71,273	93,389	21,64,662
1975/76	1,82,619	17,61,961	74,242	64,091	20,82,913	93,431	21,76,344
1976/77	1,82,619	17,70,371	74,242	66,534	20,93,766	90,417	21,84,183
1977/78	1,82,618	17,70,130	74,242	67,263	20,94,253	90,417	21,84,670
1978/79	1,82,289	17,63,146	71,801	63,984	20,81,220	90,417	21,71,637
1979/80	1,82,494	17,12,774	73,101	60,172	20,28,541	90,417	21,18,656
1980/81	1,82,494	17,12,864	73,101	57,971	20,26,430	90,417	21,16,577
1981/82	1,82,494	17,12,864	73,095	55,317	20,23,770	90,417	21,14,187

Source: Forest Department, Himachal Pradesh.

The true community woodlots in H.P., as noted, are the *Rakhas*. In not paying at least scanty attention to the traditional community management systems, the educated administration is evidently proclaiming that it has nothing to learn from the uneducated rural poor. The new 'Community Woodlots' have been planted on *Shamlats* and other Rv.D's lands, for which the ownership of the woodlot lies with the Government. There are no common lands vested with the *Panchayats* in H.P., hence, unlike in U.P., the community woodlots cannot be generated on *Panchayat* lands. The FD in H.P. is working through the Rural Development Committees (RDCs) which were created by the Ministry of Rural Development for other purposes. The RDCs and *Mahila Mandals* are non-registered sub-committees under the *Panchayats*. Evidently, until appropriate structural organisation is done at the grassroots' level, it is unlikely that the benefits of forestry will go to the rural people. As it stands, benefit sharing will have to be regulated by the RvD. The FD cannot make a legally bona-fide contract with the *Panchayat*. The other social forestry scheme which is meant to benefit the poor is the Tree Tenure or *patta* scheme. However, the *patta* scheme has not been introduced in H.P. as

[12] See: Chhatrapati Singh's " Legal AppraisalReport of the National Social Forestry Project: (Mid-Term Review)". for the World Bank and the UBAID. March, 1988.

yet. The H.P. Government is negotiating with the Central Government on giving *pattas* to forest lands. This is necessary because of the provisions of the Forest Conservation Act. Farm forestry, that is forestry on private lands, in H.P., as in other States, is engaging the richer landlords. In H.P., this is being carried out under Section 38 of the Forest Act, and this implies that the afforested farm is actually under joint management between the farmer and the FD. The FD is subsidising afforestation for the rich farmer but keeping the right to fell and sell to itself. The rich farmer gets a large share in this harvest. For those farmers whose lands were lying waste, this scheme is a boon. Those who do not have such wastelands go in for agriculture or horticulture.

A close scrutiny of the laws relating to forestry and the social forestry schemes makes it evident that these laws and schemes are not intended to bring about a sustained-yield ecology, benefit sharing with the rural people who form the majority of the population, nor are they intended to bring about equity in the distribution of resources or of gains from external monetary aid. They are intended to exploit the forest resources to the maximum, to regulate the trade in favour of the more powerful contractors, and, in the process, to impoverish the rural people.

The revenue from timber has gone up from Rs 7.47 crores in 1970\71 to Rs 19.14 crores in 1981\82; Rs 23 lakhs was earned in the same period from selling major forest products and another Rs 2 lakhs was earned from the sale of minor forest products (Table 2). Out of the 8.56 million cubic metres of timber felled in 1980/81, 85 per cent of it was used for commercial purposes, including about 20 per cent that was used for making apple packing cases. As H.P. accounts for more than a third of the apple production in the country, about 2.5 million tons per annum, the need for apple packing cases makes a considerable demand on the State's resources. Tables 2 and 3 present the detailed financial output from major and minor forest products. Table 4 sums up the revenue and expenditure of the Forest Department and Table 5 gives the forest area under important species.

Table 2: Output and Value of Major Forest Products

Year	Major Products			
	Timber		Fuel*	
	Quantity ('000 m^3)	Value ('000 Rs)	Quantity ('000 m^3)	Value ('000 Rs)
1	2	3	4	5
1970/71	524.7	12,48,82	135.5	90,45
1971/72	453.6	5,82,01	153.9	1,38,85
1972/73	511.2	7,19,24	76.1	68,69
1973/74	458.8	8,57,40	175.5	1,58,34
1974/75	470.5	11,45,25	163.4	1,47,43
1975/76	477.5	12,22,25	140.7	49,26
1976/77	525.3	15,86,98	185.8	81,20
1978/79	564.0	17,46,43	162.0	1,07,89
1979/80	463.7	21,20,16	158.5	1,90,26
1980/81	560.0	26,52,70	188.0	2,25,90

Source: Forest Department Himachal Pradesh.

Note : * includes firewood and charcoal.

Table 3: Value of Minor Forest Products

Value ('000 Rs.)						
Item	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82
1	2	3	4	5	6	7
Bamboo and Cane	933	1,268	529	485	125	2,124
Drugs	2,774	1,219	1,308	2,343	3,533	276
Fodder & Grazing	1,066	955	1,126	1,336	863	902
Grass other than fodder	286	256	257	275	281	452
Others	1,377	2,169	3,277	28	7	44
Total	15,222	20,697	18,723	27,395	26,445	19,930

Source: Forest Department, Himachal Pradesh.

Table 4: Revenue and Expenditure of the Forest Department

(Rs. '00,000)

Year	Revenue	Non-plan	Plan	Total Expenditure (Col. 2,3,4)	Capital Outlay
1	2	3	4	5	6
1970/71	747	574	173	747	14
1971/72	816	422	192	644	14
1972/73	727	421	277	698	15
1973/74	1,180	442	313	755	16
1974/75	916	488	295	783	32
1975/76	913	444	315	759	18
1976/77	833	475	359	834	21
1977/78	987	468	467	935	87
1978/79	1,261	509	665	1,174	66
1979/80	1,616	611	651	1,262	44
1980/81	1,672	688	767	1,455	30
1981/82	1,914	709	504	1,213	43

Source: Forest Department, Himachal Pradesh.

Table 5: Forest Areas under Important Species

(in hectares)

Year	Species					
	Deodar	*Kail*	Silver, Fir, and Spruce	*Chil*	*Sal*	Oak*
1	2	3	4	5	6	7
1970/71	73,694	88,519	1,48,057	1,15,405	49,768	1,16,006
1971/72	69,872	86,444	1,47,944	1,14,480	26,112	1,15,011
1972/73	69,872	86,444	1,47,944	1,14,480	26,112	1,15,011
1973/74	65,600	85,600	1,47,944	1,18,600	26,100	1,13,400
1974/75	65,600	85,600	1,45,100	1,18,600	26,100	1,13,400
1975/76	65,600	85,600	1,45,100	1,18,600	26,100	1,13,400
1976/77	65,600	85,600	1,45,100	1,18,600	26,100	1,13,400
1977/78	65,600	85,600	1,45,100	1,18,600	26,100	1,13,400
1978/79	57,000	82,700	1,40,100	1,30,500	26,100	1,12,300
1979/80	57,000	82,700	1,40,100	1,30,500	26,100	1,12,300
1981/81	57,000	82,700	1,40,100	1,30,500	26,100	1,12,300
1981/82	57,000	79,200	1,28,100	1,27,600	26,100	1,02,200

Source: Forest Department, Himachal Pradesh.

Note: * This also includes *Bans*, *Mohru*, and *Kharsu*.

Timber is indeed a big business. The H.P. Government earns about three quarters of its forest revenue from royalties on the commercial felling of about 200,000 trees annually. Indiscriminate resin extraction from pine trees by contractors is another major reason for deforestation. As in other States, once the contractor has been given the permission to fell one tree, there is no way of stopping him from felling many trees, or at least from harming them to such a degree that they do not survive. The Government is indeed aware of the problems, but there is, as yet, little it can do, given the vested interests in financial gains from the forests. Under the forest laws there are also numerous rules regulating timber transit, marketing, and harvesting. In view of the current ecological crisis they need to be rationalised. This is also true of rules for mining. Court judgements have put some restrictions on the activities, but, given the land classification problem in H.P., the matter cannot be handled unless amendments are brought about in the forest laws in the State.

Given these complexities in the forest legislation, let us turn to see what are the major issues for research in environmental legislations if we are to seek a sustained-yield, equitable, and integrated ecodevelopment.

Research Agenda Concerning Forest Legislations

1. Do an impact analysis of the Indian Forest Act as applicable to H.P., and find out in what ways it violates the following Articles of the Indian Constitution, with reference to the people below

the official poverty line and those wholely dependant upon common resources for their livelihood, Art. 14 (Equality before Law), Art. 19(e) (the Right to Reside), Art. 39 (b) and (c), (the Directive to Use the Resources of the Country for Common Good), Art. 21 (Right to Life, Livelihood), Art. 13 (The invalidity of those laws which violate Fundamental Rights). Suggest the appropriate amendments to the law in the light of the impact analysis for an equitable ecodevelopment.

2. Find out what amendments are required in the various forest laws to make social forestry possible. (Forestry that meets the primary basic needs of the rural people: viz., fuel, fodder, housing, and food needs.)

3. Study empirically the traditional community forest resource management systems in H.P. What legal models do these systems reveal? How can they be adopted for modern afforestration or social forestry programmes?

4. Study the land use patterns under the tenancy, ceiling, acquisition, and preservation laws, especially with reference to the public, government, and common lands. Determine what kind of land vesting, occupancy, or ownership will be the best in the context of the regeneration of the environment in a way that benefits the rural people equitably, for e.g., should the *Shamlats, Rakhas,* and *Ghasinis* be vested in the *panchayats* as they are in other States?

5. Study the fiscal laws relating to rural credit in H.P., especially with reference to forest cooperatives and *panchayats*. Determine what amendments are required to these laws, as well as in the National Bank for Agriculture, Forestry and Rural Development Act, and other bank loan laws, to make State credit facilities available to the village level organisations.

6. Determine what type of usufruct rights in forests (in the settlement of rights presently being done by the FD) will best enable local people to sustain themselves and the forests .

7. Study the basic needs' requirements of the rural people from the forests, and determine the best legal model for lease, contracts, *pattas,* or tree tenure that the FD should provide for the satisfaction of these needs.

Water Laws in Himachal Pradesh and Water Resource Management

A network of laws governs the use of water for drinking, irrigation, and energy generation purposes. The chief among them are given below.

H.P. Minor Canals Act, 1955
H.P. Minor Canals (Amendment) Act, 1956
H.P. Ferries Act, 1956
H.P. Water Supply Act, 1968
H.P. Water Supply (Amendment) Act, 1978
H.P. Municipal Act, 1968
H.P. Minor Canals Act, 1976
H.P. Municipal Corporation (Amendment) Act, 1983
The Bengal Aluvion and Diluvion Regulation Act, 1825
The Northern India Canal and Drainage (Amendment) Act, 1958
The Northern India Canal and Drainage (Punjab Amendment) Act, 1961/1963/1964/1965

The State has considerable surface river water resources. The net and gross areas irrigated by the Sutlej, Beas, and Chenab (Chandra and Bagchal) rivers (tributaries of the Yamuna), and by lakes, canals, wells, and tubewells, are shown in Tables 6 and 7.

Table 6: Net Irrigated Area

(hectares)

Agricultural Year	Canals	Tanks	Wells & Tub-wells	Other sources	Total
1	2	3	4	5	6
1972/73	789	242	1,938	91,643	94,612
1973/74	1,180	281	1,858	90,539*	93,858
1974/75	914	289	3,121	86,418	90,742
1975/76	-	289	2,814	87,057	90,160
1976/77	-	271	2,917	86,421	89,609
1977/78	1,175	234	2,554	86,264	90,227
1978/79	-	287	2,046	86,650	88,983
1979/80	1,101	280	3,443	85,750	90,574
1980/81(P)	1,469	331	2,428	87,590	91,818
Bilaspur	-	28	214	2,325	2,567
Chamba	-	-	-	3,543	3,545
Hamirpur	-	-	15	1,549	1,564
Kangra	-	-	184	32,227	32,411
Kinnaur	-	-	-	3,591	3,591
Kulu	-	-	-	2,496	2,496
Lahaul Spiti	-	-	-	3,007	3,807
Mandi	-	-	-	14,952	14,952
Shimla	-	-	-	4,813	4,813
Sirmaur	1,469	38	190	9,932	11,629
Solan	-	265	555	8,061	8,881
Una	-	-	1,270	1,094	2,364

Source: Annual Season and Crop Report- Directorate of Land Records, Himachal Pradesh.

Note :* Includes 136 hectares irrigated by lift irrigation in Sirmaur District.

Table 7: Gross Irrigated Area

('000 hectares)

	1972/73	1973/74	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81
1	2	3	4	5	6	7	8	9	10
FOOD GRAINS (a)Cereals									
Rice	53.6	53.5	50.7	50.8	52.3	51.4	52.7	51.0	50.5
Maize	16.6	16.5	14.8	15.7	51.4	16.0	16.5	17.3	50.5
Wheat	59.8	54.3	53.7	55.6	16.0	55.8	55.4	59.7	17.5
Barley	6.5	6.3	6.2	5.9	55.8	6.0	5.3	5.6	56.7
Ragi	0.7	0.6	0.5	0.5	6.0	0.5	0.5	0.5	5.5
Millets	3.7	3.7	4.3	3.5	0.5	3.3	3.6	3.0	0.5
(b) Pulses	2.1	1.3	1.8	1.3	3.3	2.1	1.2	1.6	0.1
Total Foodgrains	143.0	136.2	131.7	134.0	135.5	135.1	135.2	138.7	131.9
NON-FOOD GRAINS									
Potato	2.4	2.2	2.3	1.9	1.7	2.4	2.9	3.0	3.0
Rape and Mustard	0.3	0.2	0.3	0.4	0.3	0.4	0.3	0.2	0.4
Linseed	6.3	6.2	6.0	5.9	5.9	5.5	5.3	2.2	4.7
Others	13.1	11.6	10.5	10.3	11.0	12.1	11.9	12.7	15.9
Total	22.1	20.2	19.1	18.5	18.9	20.4	20.4	18.1	24.0
Grand Total	165.1	156.4	150.8	152.5	154.4	155.5	155.6	156.8	155.9

Source: *Annual Season and Crop Report*, Directorate of Land Records, Himachal Pradesh.

The annual average surface flow of major rivers in the State is 16,503 million m^3, according to the 1972 Irrigation Commission Report. The usable ground water potential, as estimated by the Central Ground Water Board in 1983/84, is 670 million m^3. The total number of villages receiving drinking water supplies from the Public Works' Department (PWD) in 1983 was 10,787. The remaining villages depend upon streams or lake water for their drinking water supply. Table 8 gives the drinking water supply in H.P. in various districts.

The manner in which the water resources of H.P. are being used may tempt one to say that this is purely a matter of State policy and that law is merely an instrument to advance this policy. This is a totally wrong concept of law. If laws have to be constitutionally valid, and if they embody a policy then it follows that the policy has to be constitutionally valid too. It is only in a dictatorial or autocratic State, where a Benthamite or Austinian type of legal positivism is practised, that one can say law can propagate whatever the sovereign desires.

Table 8: Drinking Water Supply

District	Villages Served with Drinking Water Supply as of 31st March			Population Served as of 31st March (million)		
	1980	1981	1982	1980	1981	1982
1	2	3	4	5	6	7
1. Bilaspur	242	350	450	0.52	0.75	0.94
2. Chamba	488	584	663	1.09	1.30	1.43
3. Hamirpur	389	651	954	0.80	1.28	1.76
4. Kangra	1,683	2,120	2,624	4.14	4.90	5.74
5. Kinnaur	74	74	...	0.49	0.49	...
6. Kulu	62	64	72	0.73	0.84	0.91
7. Lahaul-Spiti	155	186	199	0.20	0.26	0.28
8. Mandi	906	1,081	1,270	2.20	2.54	2.83
9. Shimla	1,193	1,321	1,475	2.26	2.53	2.83
10. Sirmaur	326	396	482	0.97	1.19	1.42
11. Solan	632	704	770	0.73	0.90	1.01
12. Una	275	356	444	1.67	1.87	2.17
Himachal Pradesh	6,425	7,887	...	15.80	18.85	...

Source: Public Works' Department, Himachal Pradesh.

Note: Total number of villages served with drinking water supply as of 31-3-83 was 10,787 in Himachal Pradesh.

In a democratic, constitutional State, the principles of democracy enshrined in the constitution becomes binding on all policies proclaimed or enforced through laws. In the light of this, it does not appear that the water laws/policies of Himachal have been for the common good of the Himalayan ecology or of the poor people. Legal science is basically a policy science which seeks the construction of a just society -- justice not only for people but also for animals, trees, plants, and the environment. From this perspective, numerous research issues come up for scrutiny. But, before we lay out this agenda for legal research, it is important to know the facts. The water use data, in terms of power production, its actual consumers, and finances involved, are given in Tables 9, 10, and 11.

Table 9: Installed Capacity in Himachal Pradesh

Year	Hydro	Diesel	Total
1	2	3	4
1950/51	2.000	2.316	4.316
1955/56	2.000	2.316	4.316
1960/61	2.000	2.369	4.369
1965/66	2.719	2.369	5.088
1970/71	48.919	2.369	52.482
1974/75	49.969	2.513	52.482
1975/76	49.969	2.513	52.483
1976/77	50.070	2.513	52.583
1977/78	50.270	2.513	52.783
1978/79	110.270	2.513	112.783
1979/80	111.020	2.513	113.533
1980/81	126.520	1.504	128.024
1981/82	126.520	1.504	128.024

Source: Himachal Pradesh State Electricity Board.

Ultimate Irrigation Potential

The ultimate irrigation potential of the States through schemes based on utilisation of surface as well as on groundwater is presently assessed as given below.

(in 100,000 ha)

	H.P.	All India	Percentage
Major & Medium Schemes (based on surface waters)	0.50	584.75	0.09
Minor Schemes			
i) based on surface water	2.40	148.57	1.62
ii) based on ground water	0.50	400.22	0.12
Total	3.40	1,133.32	0.30

Table 10: Station-wise Details of Electricity Generation

S. No.	Name of Generating Stations	Energy Generated in M kWh during				
		1977/78	1978/79	1979/80	1980/81	1981/82
1	2	3	4	5	6	7
A	Hydro Generating Station					
1	Giri Power House	-	260.224	219.993	76.172	227.254
2	Bassi Power House	194.266	117.714	115.665	149.970	184.252
3	Nogli Power House	5.421	5.282	6.439	7.512	7.830
4	Chaba Power House	10.992	12.392	10.596	8.220	8.895
5	Chamba Power House	0.996	0.867	0.879	0.754	0.790
6	Menbar Power House	0.572	0.594	0.552	0.202	-
7	Billing Power House	0.166	0.141	0.142	0.178	0.202
8	Shansha Power House	0.085	0.098	0.063	0.080	0.091
9	Jubbal Power House	0.087	0.023	-	-	-
10	Gharola Power House	0.107	0.164	0.123	0.095	0.080
11	Bharmaur Power House	0.029	0.034	0.025	0.029	0.023
12	Sissu Power House	0.016	0.039	0.019	0.072	0.058
13	Rukti Power House	-	-	0.388	1.650	2.173
	TOTAL - A	212.7372	397.572	354.884	244.934	431.684
B. Diesel Generating Stations						
1	Idgah, Shimla	0.086	0.029	0.003	0.108	-
2	Dalhousie	-	-	-	-	-
3	Kandaghat	-	-	-	-	-
4	Kasauli	-	-	-	-	-
5	Kaza	0.028	0.030	0.023	0.024	0.040
6	Jubbal	-	-	-	-	-
	TOTAL - B	0.114	0.059	0.026	0.132	0.040
GRAND TOTAL - (A+B)		212.851	397.631	354.910	245.066	431.688

Source: Himachal Pradesh State Electricity Board.

Table 11: Energy Generated, Purchased, and Sold

(Million Units)

Item	1977/78	1978/79	1979/80	1980/81	1981/82
1	2	3	4	5	6
1. Energy					
(i) Hydro	212.737	397.572	354.884	244.934	431.648
(ii) Diesel	0.114	0.059	0.026	0.132	0.040
TOTAL	212.851	397.631	354.910	245.066	431.688
2. Energy consumed in station auxiliaries	0.840	2.306	1.935	1.064	1.938
3. Energy purchased from from other States	179.286	216.347	232.920	265.411	258.298
4. Total energy available for sale	391.297	611.672	585.895	509.413	688.048
5. Energy Sold:					
(i) within the State	49.982	49.810	54.250	62.374	70.559
(a) domestic	23.874	26.956	27.998	32.630	34.991
(b) commercial	40.947	69.989	93.339	107.550	130.467
(c) industrial	1.897	1.964	1.853	1.970	1.965
(d) public eighting	5.456	5.456	32.731	54.440	41.469
(e) agriculture	80.198	39.241	32.731	54.440	41.469
(f) bulk & misc.					
TOTAL	202.354	191.282	216.267	264.734	285.962
(ii) Outside the State	107.386	309.210	258.542	147.125	273.645
Total Energy Sold	309.740	500.492	474.809	411.859	559.607

Source: Himachal Pradesh State Electricity Board.

Monitored Projects

No project in the State is being monitored by the Central Water Commission.

Technical Examination of Projects

The following is the position of the Technical Examination of Original and Revised Project Reports received for the State Government in C.W.C. as of 31st March, 1986.

	Original Reports		Revised Reports	
	Major	Medium	Major	Medium
1. Under examination in C.W.C.	-	-	-	-
2. Replies to comments awaited from the State	-	-	-	-
3. Submitted to P.C.	-	-	-	-
4. Replies to T.A.C., observations awaited from the State	-	1	-	-
5. Pending with P.C.	-	-	-	-
Total	-	1	-	-

Major and Medium Irrigation Schemes

Development during the Pre-plan Period

There were no major or medium irrigation projects in the State during the pre-plan period.

Development during the Plan Period

Only two more medium irrigation projects were taken up during the period (1951-85). Both the schemes were completed during the Sixth Plan (Table 12).

The Plan-wise development of irrigation potential (through major and medium schemes) and the expenditure incurred on the programmes are given in the Table 13.

One major and three medium irrigation schemes are being taken up as new schemes in the Seventh Plan.

Table 12: Projects Completed up to the End of the Sixth Plan

S. No.	Name of Project	Plan		Cost		Rs. Crores/th.ha Potential		Remarks
		Started in	Completed	Original	Completed	Ultimate	Achieved	
1	2	3	4	5	6	7	8	9
A. Pre-Plan projects	--- Nil ---							
B. Plan Projects								
a) Major Projects	--- Nil ---							
b) Medium Projects								
1) Giri Irrigation	V	VI	4.77	4.77		8.70*	5.26	5.26
2) Bhabour Sahib Lift irrigation (Phase I)	V	VI	0.75	1.75		1.23*	0.92	0.92
Total (b)			5.52	9.52		9.93	6.18	6.18
Total (a+b)			5.52	9.52		9.93	6.18	6.18
Grand Total (A+B)			5.52	9.52		9.93	6.18	6.18

An amount of Rs. 15.06 lakhs was spent during 85/86 and 86/87 for the Giri Irrigation Scheme and Rs. 0.5 Lakhs during 1985/86 for the Bhabour Sahib Lift Irrigation Scheme (Phase I) without any outlay during the Seventh Plan.

Table 13: Development of Major & Medium Irrigation Schemes during Various Plan Periods

Period	Expenditure during Cumulative		Potential during Cumulative		Rs.Crores/th.ha Utilisation during Cumulative	
Pre-Plan period	-	-	-	-	-	-
1st Plan (51-56)	-	-	-	-	-	-
2nd Plan (56-61)	-	-	-	-	-	-
3rd Plan (69-74)	-	-	-	-	-	-
4th Plan (74-78)	1.50	1.50	-	-	-	-
A.P.(1978-80)	4.13	5.63	-	-	-	-
6th Plan (80-85)	5.96	11.59	6	6	4	4

The outlay and targets of the Seventh Plan are as given below:

Rs in crores/Th.ha			
	Outlay	Potential (Addl)	Utilisation (Addl)
Seventh Plan	13.50	2.00	2.50
A. P. (1985/86) Actual	1.47	-	0.20
A. P. 1986/87) Ant.	1.65	0.42	0.20
A. P. (1987/88) Target	1.70	0.42	-

Details of ongoing schemes and new schemes in the Sixth Plan are shown in Table 14.

Inter State Projects

There is only one major project that is new in Himachal and which has inter State aspects, viz., the Shahnagar inter State with the Punjab. This is included in the Seventh Plan.

Research Agenda For Water Laws in H.P.

1. Flood Control. A major consequence of tampering with the natural flow of water, as witnessed in a devastating way this year, is floods. Loss of crores of rupees of property and hundreds of lives have been reported so far. The Sixth Plan's investment in flood control was Rs. 1045 crores. This, however, did not decrease the menace in H.P. In the light of this, the following research issues become important.

   - o An analysis of water conservation legislation for the protection of the watersheds of river catchments.
   - o Flood plain zoning through law to regulate land use in flood-prone areas.
   - o Legal measures for disaster management.
   - o A Legal framework for rehabilitation and compensation for flood-affected people.
   - o A Legal framework for accountable flood relief measures.
   - o Analysis of legal problems involved in inter State watershed management.

2. Access to potable water for irrigation and drinking purposes in the rural areas as a component of the constitutional right to life and liberty.

3. Legal framework for large, medium, and minor hydroelectric and irrigation works in terms of the rights of the people and the State to use alternative technologies, rights of the local people over water as a resource (tanks, streams, wells, tubewells), and rights over water resources (electricity, fish, etc.)

4. Legal managment of the exploitation of groundwater, in terms of restrictions, liabilities, taxes, licensing, etc.

Table 14: Ongoing and New Schemes during the Sixth Plan

(Rupees in Crores)

S.No. Names of Projects	Plan in which started	Latest est. cost	Expdr. up to end of Sixth Plan	7th plan outlay	Act. Exp. in 85/86	Ant Exp. 86/87	Outlay 1987/88	Utl.Pot. of 6th Plan	Pot.Utl. 1985	Pot. Utl. 1986	Pot.Utl. 1987	Pot.Utl 1987/88	Full target benefits 1986	1987	Pot.Utl. target 1987	Pot. Utl. target 1988
1 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
I. On going Schemes																
A. Major Projects				NIL												
B. Medium Projects																
1. Balh Valley	VI	5.00	1.17	3.83	0.94	1.05	1.07	2.40	0.20	-	0.20	-	0.42	-	Details not given by State.	
II. New Schemes of VII Plan																
A. Major																
1. Shahnahar Project (IS)(39.30 crores Rs. total cost)		9.03 (H.P. Share)	0.41	8.00	0.40	0.41	0.50		NA	NA		NA			-	
B. Medium																
1. Bhabour Sahib Lift Irrgn. Scheme (Ph. II)		3.00		0.45	-	0.01	0.05	2.60	-	-	-	-	0.42	-	-	
2. Kirpal Chand Khul		3.10		0.45	-	-	0.02	NA				NA			-	
3. Changer Area Irrgn.		3.90		0.47	-	0.10	0.03	NA	NA			NA			-	
III. Survey & Investigation				0.30	0.01	0.01	0.03									
IV. Projects for which no outlay is provided in VII plan																
1. Survari River Project		Not known	-	-	-	-	-	3.00	-	-	-	-	-	-	-	-
2. Churu Lift Irrgn. Project		-	-	-	-	0.005	-	2.20	-	-	-	-	-	-	-	-
3. Phasing Project		-	-	-	-	0.005	-						0.42			
4. LIS Bargain Project		-	-	-	-	0.005	-									
5. Beat Illaqua Project		-	-	-	0.0008		-									
						0.005										
6. Giri Irrigation Project		-	-		0.10	0.05	-									
7. Bhabori Shahib Phase - I		-	-	0.005	-	-										
Total Irrigation				13.50	1.47	1.65	1.70	10.30	6.30	4.10	-	0.200.20	0.42	0.20	0.42	-

Source: Central Water Commission.

5. A legal framework for local self-government (*panchayats*) in the management of water resources such as tanks, streams, wells, and tubewells.

6. A legal framework for large dam constructions and dam safety, including issues of inter-State financing, Centre-State relations, rights of the people to rehabilitation and compensation, and legal issues relating to the submergence of forests.

7. A legal framework for role of the non-government organisations, local communities, societies, and cooperatives in the management of water resources.

Land Laws in Himachal Pradesh

As noted earlier, land classification in H.P. is still being undertakien. In the meantime, since the RvD and FD records overlap, exact land classification cannot be estimated. Land laws in H.P., as in other States, are complex. There is one thing common to them all, however, and that is that none of them have been enacted out of ecological considerations. They deal with acquisition, transfer of property, and regulations concerning taxation, sale, mortgage, housing, etc. Even the Land Development Act, 1973, or the Mandi State Anti-Erosion Act, 1904, do not embody appropriate land use policies. They deal mainly with agricultural land. For the mountain regions, 60 per cent of the land is supposed to be covered with forest according to the National Forest Policy. The States' FD reports 38.5 per cent, but even this is doubtful, given the uncertainty of the land records. A recent study of the H.P. Government reports that there is 18 per cent forest coverage. In other words, nearly one per cent of the land surface has been stripped of forest coverage each year over the last 25 years. This is a result of the forest policy or the forest act. The Kulu Valley, once fully covered with tall deodars, is now almost barren. The laws regulating land use in H.P. are stated below and Table 15a and b presents the land utilisation statistics of H.P.

Laws Concerning Land

The Slum Areas (Improvement and Clearance) Act, 1956
The Mandi State Anti-Erosion Act, 1964
The Mandi Land Revenue Regulation, 1975
The H.P. Agricultural Credit Operations and Miscellaneous Provisions (Banks) Act, 1972, (for vestment of alienable rights in agriculturists).
The H.P. Agricultural Pests, Diseases, and Noxious Weeds' Rules, 1971
The H.P. Agricultural Produce Market Act, 1969
The H.P. Bhoodan Yagna Act, 1954
The H.P. Ceiling on Land Holdings' Act, 1972
The H.P. Land Revenue Act, 1954
The H.P. Land Revenue (Amendment) Act, 1955
The H.P. Land Revenue (Amendment) Act, 1956
The Land Acquisition (H.P. Amendment) Act, 1964
The H.P. Land Revenue (Amendment) Act, 1965
The H.P. Urban Immovable Property Tax Act, 1968
The H.P. Transfer for Land (Regulation) Act, 1969
The H.P. Agricultural Pests, Diseases, and Noxious Weeds Act, 1968
The H.P. Roadside Land Control Act, 1968
The H.P. Urban Estates (Development and Regulation) Act, 1968
The H.P. Land Revenue (Amendment) Act, 1971
The H.P. Holdings (Consolidation and Preventation of Fragmentation) Act, 1971
The H.P. Public Premises and Land (Eviction and Rent Recovery) Act, 1971
The H.P. Housing Board Act, 1972

Table 15 a: Land Utilisation by Agricultural Year ('000 hectares)

Agricultural Year	1972/73	1973/74	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81(P)
Total Geographical Area									
- By professional survey	5,567.3	5,567.3	5,567.3	5.567.3	5,567.3	5.567.3	5,567.3	5,567.3	5,567.3
- By village papers	2,939.9	2,937.3	2,932.6	2,936.3	2,938.4	3.010.3	3,002.1	2,986.9	2,985.2
- Forests	637.6	630.1	638.4	637.5	637.5	677.1	704.7	835.8	806.8
Land Available for Cultivation									
- Barren and cultivable land	129.7	130.2	130.8	124.6	121.8	154.2	156.5	155.5	141.4
- Land put to non agricultural	190.2	193.4	203.2	192.2	203.1	197.7	188.6	188.6	161.9
Total	319.9	323.6	334.0	316.8	324.9	351.9	344.1	344.1	303.3
Other Uncultivated land Excluding Current fallows	127.0	131.1	130.4	130.6	132.9	135.2	136.0	124.3	223.7
- Cultivable waste	1,191.0	1,86.2	1,184.3	1.145.9	1.190.9	1.178.4	1,45.9	1,020.4	985.9
- Permanent pastures and other grazing lands	44.0	43.4	41.6	46.9	42.8	53.1	46.9	41.6	39.4
- Land under misc. tree crops, etc.	1,362.0	1,360.7	1,356.3	1.328.8	1.366.6	1.366.7	1,328.8	1,186.3	1,249.0
Total									
Classification of Area									
- Current flows	49.6	55.0	56.0	544.4	54.6	557.8	53.5	552.2	51.1
- Other fallows	3.2	4.1	3.5	916.8	3.3	923.6	3.7	929.2	3.4
Total	52.8	59.1	59.5	372.4	57.9	365.8	57.2	377.0	45.5
- Net area sown	558.6	555.8	544.4	557.8	552.2	560.1	560.9	572.1	572.1
- Total cropped area	929.3	906.7	914.8	923.6	929.2	934.6	934.7	942.9	946.4
- Areas sown more than once	370.7	350.9	327.4	365.8	377.0	374.5	373.8	370.8	374.3

Source: Annual Season and Crop Reports, Directorate of Land Records, Himachal Pradesh.

Table 15 b: Land Utilisation by District ('000 hectare)

District	Bilaspur	Chamba	Hamirpur	Kangra	Kinnapur	Kullu	Lahaul-Spiti	Mandi	Simla	Sirmaur	Solan	Una
Total Geographical Area												
- By Profsessional survey	116.7	652.8	111.8	537.9	640.1	550.3	1,383.5	395.0	513.1	282.5	193.6	154.0
- By Village papers	115.5	692.4	109.6	560.7	19.1	48.8	194.8	197.3	287.8	224.8	180.2	154.2
- Forests	11.5	252.4	14.0	188.4	0.1	-	43.5	150.2	48.9	49.8	19.6	28.4
Land Available for Cultivation												
- Barren and cultivable land	6.3	2.5	19.8	30.1	2.2	6.3	0.8	12.5	12.0	7.3	10.3	31.3
- Land put to not agricultural	14.9	13.7	12.1	61.1	0.9	1.5	1.5	9.3	8.2	9.1	8.3	20.8
Total	21.2	16.2	31.9	91.2	3.1	7.8	2.3	22.3	20.2	16.4	18.6	52.1
Other Uncultivated land Excluding urrent fallows												
- Cultivable waste	4.2	5.5	8.6	143.6	3.3	3.3	2.7	3.7	12.7	13.1	13.0	10.0
- Permanent pastures and other grazing lands	44.5	374.4	7.0	12.7	2.6	-	142.9	127.2	126.9	63.6	76.2	7.7
- Land under misc. tree crops, etc.	0.1	0.1	-	-	-	0.3	0.1	0.1	1.2	34.2	3.3	-
Total	48.8	380.0	15.6	156.3	5.9	3.6	145.7	131.2	140.8	110.9	92.5	17.7
Classification of Area												
- Current flows	1.9	2.6	8.9	4.5	1.4	3.1	0.3	3.7	4.7	2.9	3.6	3.8
- Other fallows	0.6	0.3	-	-	0.2	-	-	0.2	1.2	0.6	0.5	9.0
Total	2.5	2.9	8.9	4.5	1.6	3.1	0.3	3.9	5.9	3.5	4.1	12.8
- Net Area sown	31.5	40.9	39.2	120.3	8.4	34.3	3.0	89.7	72.0	44.2	45.4	43.2
- Total cropped area	59.6	64.1	71.6	193.2	10.4	32.1	3.2	159.2	108.4	81.3	71.9	71.4
- Area sown more than once	28.1	23.2	32.4	72.9	2.0	17.8	0.2	69.5	16.4	37.1	26.5	28.2

The H.P. Agricultural Credit Operations and Miscellaneous Provisions' (Banks) Act, 1972
The H.P. Land Development Act, 1973
The H.P. Tractor Cultivation (Recovery of Charges) Act, 1973
The H.P. Utilisation of Lands' Act, 1973
The H.P. New Mandi Townships' (Development and Regulation) Act, 1973
The H.P. Ceiling on Landholdings' Act, 1972
The H.P. Requisition and Acquisition of Immovable Property Act, 1972

Land Utilisation

The land use statistics, 1983/84, compiled by the Department of Statistics, Ministry of Agriculture, are as follows:

		'000 ha
(i)	geographical area	5567
(ii)	reporting area	3186
(iii)	forests	862

(As per existing village records, the forest area reported by the Chief Conservator of Forests for 1983/ 84 is 1,300 ha. The large variation between the two sets of figures are under examination in the Department of Statistics of the Ministry of Agriculture.)

(iv)	Not available for cultivation:	
	a. area put to non-agricultural uses and	177
	b. barren and uncultivable area	165
	Total (IV) ...	342
(v)	Other uncultivable land excluding fallow land:	
	a. permanent pastures and other grazing land,	1161
	b. land under miscellaneous tree crops and groves not included in net area sown, and	40
	c. cultivable wasteland.	129
	Total (V)	1130
(vi)	Fallow Land:	
	a. fallow lands other than current fallows and	14
	b. current fallows	45
	Total (VI)	59
(vii)	Cultivable area (ii)-(III)-(iv)-(v) (a)	(14.7% of geographical area)

(viii)	Net sown area (ii)-(iii)-(iv)-(v)-(vi)	593 (72.2% of cultivable land)
(ix)	Net irrigated area	94 (15.9% of net area sown)
(x)	Total cropped area	971
(xi)	Gross irrigated area	165 (17.0% of total cropped area)

Along with deforestation, the other major causes of land erosion are mining and grazing. Apart from the mentioned land laws and the forest laws, there are no special laws governing mining. Extensive open mining of the hillsides is a major reason for landslides. The mining data are given in Table 16.

Table 16: Production and Value of Minor Minerals in Himachal Pradesh during 1980 and 1981

Mineral	1980		1981 (P)	
	Qty. (M.Tons)	Value ('000 Rs)	Qty. (M.Tons)	Value ('000 Rs.)
1	2	3	4	5
Building Stones	1,72,273	---	1,02,220	2,658
Limestone	40,962	819	47,337	852
Bajri	32,025	480	73,255	733
Road Metal		----	----	----
Sand	75,633	1,124	1,13,038	1,130
Kankar	---	----	-----	----
States (No.)	19,945	1,596	3,16,004	6,632*
Boulders	61,563	1,231	71,175	285

Source: The Department of Industries (Geological Wing), Himachal Pradesh
* Estimated

Livestock is regulated in H.P. by means of three main laws:

1. The H.P. Livestock Improvement Act, 1959
2. The Cattle Trespass (H.P. Amendment) Act, 1973
3. The H.P. Livestock and Birds Diseases' Act, 1969

Evidently, one of these laws is meant to contain the livestock population; a major problem in the State. The Trespass Act is extremely difficult to enforce because most of the hilly areas cannot be fenced. The livestock data for the State are given in Table 17.

Table 17: Livestock and Poultry

Livestock and Poultry	Census		
	1966	1972	1977
1	2	3	4
1.Cattle			
(a) Males over 3 years			
(i) Breeding	18,344	26,690	13,625
(ii) Working	6,54,755	8,68,892	8,06,797
(iii)Others	8,677	6,577	4,966
Total	6,81,776	9,02,159	8,25,388
(b) Females over 3 years			
i) Breeding			
(a) In Milk	2,33,621	2,78,956	2,82,882
(b) Dry and not calved	3,76,491	3,86,686	3,97,845
ii) Working	1,861	4,894	1,725
iii) Others	3,094	3,155	2,984
Total	6,15,067	6,73,691	6,85,436
(c) Young stock	5,94,751	5,99,840	5,59,396
Total Cattle	18,91,594	21,75,690	21,06,220
2. Buffalo			
(a) Males over 3 years			
(i) Breeding	4,285	6,171	5,188
(ii) Working	9,713	8,071	6,882
(iii) Others	656	256	208
Total	14,654	14,498	12,278
(b) Farmers over 3 years			
(i) Breeding			
(a) In milk	1,17,629	1,96,686	1,86,131
(b) Dry and not calved	1,51,935	1,62,011	1,96,659
(ii) Working	773	1,210	595
(iii) Others	1,488	1,621	1,112
Total	2,71,855	3,61,528	3,84,497
(c) Young stock	1,288,77	1,67,861	1,63,231
Total Buffaloes	4,15,336	5,43,887	5,60,006
3. Sheep	10,48,917	10,39,946	10,55,005
4. Goats	8,13,041	9,06,415	10,35,337
5. Horses and ponies	14,512	16,224	14,858
6. Other livestock -			
(a) Mules	6,488	7,000	8,216
(b) Donkeys	4,625	4,904	6,074
(c) Camels	670	885	872
(d) Pigs	2,869	2,906	5,165
(e) Yaks	3,226	4,589	3,473
Total	17,878	20,284	23,800
TOTAL LIVESTOCK	42,01,298	47,02,456	47,95,226
7. Poultry	2,06,628	1,88,649	3,29,561

Source: Livestock Census- Directorate of Land Records Himachal.

Research Agenda for Land Laws in Himachal Pradesh

1. Determine the actual land use policy inherent in the land laws. Compare this with the National Forest Policy, as applicable to the mountain regions, and the current ecological needs of the region.

2. Determine what type of amendments or modifications are necessary in the land development and anti-erosion laws from the point of view of integrated ecological development.

3. By means of empirical studies, determine the impact of land acquisition laws, especially in relation to 'public purpose' acquisitions such as in hydel and irrigation projects. Find out which 'public' has benefitted and what have been the conditions of the original local inhabitants in terms of their water or land rights, compensation, and rehabilitation. Determine what type of application of the land acquisition laws will be in the best interests of the local ecology and people.

4. Determine the use of land laws by the PWD, Corporations, and municipalities, with reference to road constructions, housing, and mining, and work out alternative legal frameworks which will ensure the enforcement of these laws in ecologically non-destructive ways.

5. Determine the legal regime concerning mining, in terms of the rules under the forest laws and land laws, the administration involved, and centre-State relations, and work out how mining can be approached legally in a holistic way which will take care not only of the ecology of the habitat but also of the problems related to landslides, compensation to the people, and rehabilitation of the people as well as the environment.

6. Study the enforcement of land ceiling laws, with special reference to horticulture. Determine how the ceiling laws can be rationalised to serve the interests of both horticulture and the preservation of natural forests.

7. Work out the appropriate legal model for *patta* allotments to the poor. What will secure their interests as well as the interests of the environment? Determine the basic causes for the failure of the land allotment to the poor schemes and suggest legal remedies.

8. Do an impact analysis of the laws regulating livestock. Work out the best practicable legal strategy for managing grazing on public and private lands. The strategies considered may include deterence, population control, taxation, rationing, and other alternative methods.

Laws Relating to Tourism in Himachal Pradesh

Tourism is one of the important revenue resources for the State government. Since the inception of the Himachal Pradesh Tourism Development Corporation (HPTDC), the inflow of tourists in the State has almost doubled every four years. Table 18 gives the details from 1977 to 1981.

Table 18: Indian and Foreign Tourists in Himachal Pradesh Tourism Development Corporation Accomodation

Type of Tourist	1977	1978	1979	1980	1981
1	2	3	4	5	6
Indian	36,360	40,198	50,874	60,812	69,263
Foreign	2,377	3,235	4,220	4,492	6,023
Total	38,737	43,433	55,094	65,304	75,286

Source: Himachal Pradesh Tourism Development Corporation

The State has one national park and 27 wildlife sanctuaries. This is the highest number of protected areas in any State. Evidently, H.P. is well endowed in wildlife and genetic resources. These resources are transversed by 1,994km of double-lane motorable road, 11,606km of single-lane road, 696km of jeepable roads and 4,439km of mud roads according to the PWD's 1983 account.

An analysis of the 14 odd laws that directly pertain to tourism reveals that they have the following main objectives.

1) The regulation of transport and the raising of financial revenue for the State through these laws. The relevant laws are given below.

   The H.P. Motor Vehicles, Taxation Act, 1972
   The H.P. Motor Vehicles (Amendment) Act, 1976
   The H.P. Ropeway Act, 1969
   The H.P. Toll Act, 1976
   The H.P. Prevention of Ticketless Travel in Road Transport Service Act, 1976
   The H.P. Taxation (On Certain Goods Carried by Road) Act, 1976
   The H.P. Passengers and Goods Taxation (Amendment) Act, 1977

2) Regulation of hotels and apartments, and the raising of revenue for the State through such laws. The relevant laws are given below.

   The H.P. Registration of Hotels and Travel Agents Act, 1969
   The H.P. Apartment Ownership Act, 1978
   The H.P. Tax on Luxuries (in hotels and lodging houses) Act, 1979
   The Indian Treasure Trove (H.P. Amendment) Act, 1979

3) Protection of buildings of historical significance and tourist attraction. The relevant law is the H.P. Ancient and Historical Monuments and Archeological Sites and Remains Act, 1976.

Raising revenue for the State is indeed an important function of the laws, and so is regulating quality control of hotels, transport, and roads. However, the State cannot be oblivious of the fact that, with the rapid rate of ecological devastation going on in the State, there soon may not be much left to attract the tourist. The fate of the Mussoorie and Dehradun hills is a testimony to this fact. Once considered an ecological paradise, these hills are now sweltering in the summer, facing massive water shortages, and offering little solace to the tourists from the plains who wish to escape the heat. If the laws concerning tourism remain as the above, the same fate awaits the Himachal hills. Evidently, ancient monuments and historical sites are not alone in needing protection but rather the whole environmental setting in which they were created. Laws concerning toruism will have to take a holistic approach if the State wishes to continue to offer an alternative ecology to the tourists and retain the scenic beauty which attracts them. In the light of this, let us turn to see what type of legal alternatives need to be sought.

Research Agenda for Laws Concerning Tourism

1. Determine in what ways the H.P. Ancient and Historical Monuments and Archaeological Sites and Remains Act can be amended to protect important ecological sites, the biosphere, and genetic pools. By means of field studies, find out the major differences between the protection of sites by the Archeology Department and the Forest Department in terms of management administration, efficacy, and impact on the local people. Determine which alternatives offer better solutions.

2. Determine how laws concerning apartments and hotels can be amended so as to regulate their construction in ecologically sensitive areas and in ecologically destructive ways.

3. Within the existing development strategies, it has become a common practice to construct roads to every area of tourist interest. This is neither in the interest of ecology nor in the interest of all tourists. Alternative modes of transport and ways of reaching out to remote areas are of equal interest. Do a cost-benefit analysis of the alternative modes of transport and pathways that the State can provide, and determine the best model that can serve the financial needs of the State, the interests of ecology, and the interests of tourists. Work out a legal regime that will allow the implementation of this best model.

Laws Concerning Organisations and Administration

No management of land, forest, or water resources is possible without the organisational and administrative set-up meant to implement the laws or schemes. Even the best of laws can fail to achieve its ends if the adminstration meant to enforce it is ill-structured, poorly financed, or lacks the manpower or motivation to achieve these ends. In any management of resources, therefore, it becomes extremely important to seek whether the organisational structure entrusted with the task of implementing the work is appropriate to the objectives of the scheme. For example, a forest administration which has been trained for two centuries to keep people out of their areas, and exploit the forests for revenue, cannot suddenly be expected to conserve forests and become social workers for social forestry. The department, therefore, has found it necessary to create an altogether new type of administration; a Social Forestry Division, in contrast to the traditional Territorial Division. So far, the new division continues to get its manpower from the old division. This, however, does not serve the purpose fully, because the job requirements for social forestry are dramatically different to those of traditional forestry. The needs, in terms of training, motivation, competence, financial requirements, and facilities, are all different. It becomes important, therefore, to ask what necessary changes are required in the forest laws to make possible the creation of a new type of administration. It also becomes necessary to reflect on alternative administrative arrangements. In some States, for example, social forestry is not being carried out through the FD but through the Rural Development Department; this has not necessarily been the best option, since this department lacks the expertise on forests.

There are other organisational issues. A major one concerns the modifications required in the powers and duties of the organisations to realise the ecological ends. In rural areas, for example, grazing lands, village forests, tanks, and wells are often vested in the *Panchayats*. The duty to maintain these is also specified in the *Panchayat* Act. They are, however, given very little financial or bargaining powers to be able to actually sustain the resources vested in them. If new duties are created, such as creating, selling, or harvesting community woodlots in the villages, it will become all the more important to ask what type of organisational set-up is best suited for carrying them out? Does it have the expertise? At what levels must the finances be arranged or mobilised? Who must be accountable? And so on. These various requisite changes can be brought about only by appropriate amendments in the *Panchayat* Acts.

As regards municipalities and corporations, the situation is analogous to the *panchayats*, although the problems are at a higher level. Under the acts the municipalities have been given duties to protect the environment by controlling pollution, town planning, etc, but they have little control over the finances. The higher level administration or politicians often divert the funds for other purposes. The corporations, similarly, are supposed to the control of the construction of buildings and other structures, and, because of pressures from higher agencies, the rules laid down by the corporations are often honoured more in the breach than in the observance. Unless municipalities and corporations are made responsible and financially capable of maintaining the environment there is litte that can be done to maintain urban environments. The laws and rules concerning the responsibilities and finances of these organisations, therefore, require close scrutiny to seek alternative legal models for achieving the desired ends.

The various laws in Himachal, which concern organisational and administrative set-ups, are as given below. These laws evidently involve more than the mere setting up of such agencies.

The Merged State (Laws) Act
The Punjab Reorganisational Act, 1966
The State of H.P. Act, 1970
The H.P. Municipal Act, 1968
The H.P. *Panchayat Raj* Act, 1968
The Local Authorities Loans, (H.P. Amendment) Act, 1973
The H.P. Village Common Lands Vesting and Utilisation Act, 1973
The H.P. *Panchayati Raj* (Second Validation) Act, 1975
The H.P. Cooperative Societies (Amendment) Act, 1976
The H.P. (Extension of Laws) Act, 1976
The H.P. Debt Reduction Act, 1976
The H.P. New *Mandi* Townships (Development and Regulation) Act, 1973
The H.P. Municipal Corporation Act, 1979
The H.P. Town and Country Planning Act, 1977
The H.P. Passengers and Goods Taxation (Amendment) Act, 1977
The H.P. Urban Estates (Development and Regulation) (Amendment) Act, 1977
The H.P. Cooperative Land Development Banks Act, 1979
The Colonisation of Government Lands (Punjab) Act, 1912
The East Punjab Evacuees (Administration of Property) Act, 1947
The Punjab *Jagirs* Act, 1914
The Punjab Resumption of *Jagirs* Act, 1957
The Bengal Alluvion and Diluvion Regulation, 1825
The H.P. Municipal Corporation (Amendment) Act, 1983
The H.P. Town and Country Planning (Amendment) Act, 1981/1983
The H.P. Municipal Corporation Act, 1980
The H.P. Municipal Corporation (Amendment) Act, 1984

Research Agenda for Laws Concerning Organisations and Administration

1. Study the administrative set-up under the forest laws, at all levels, and determine what amendments are required in the Forest Act, in order to design an effective administrative system in view of the managerial requirements of the new programmes and ecological needs.

2. Determine what changes are required in the *Panchayat* Act to facilitate the fulfilment of duties to maintain village forests, grazing lands, and other common property and what would be the best legal arrangement for vesting such common property in the *panchayats* from the point of view of a long-term policy for sustenance, yield, finances, responsibilities, and accountabilities.

3. Determine both theoretically and empirically how the Town and Country Planning Acts can be modified to lay down provisions that will take into account the ecological needs in such planning.

4. Do a legal appraisal of the working of the statutory bodies, such as cooperatives and societies, and of non-statutory bodies, such as voluntary agencies, VDCs, and *Mahila Mandals*; analyse the laws applicable to them, and work out the changes in law required to involve such organisations efficaciously in ecological work.

Conclusions

The study of the environmental laws involved in just one State of H.P. makes it obvious that the task of achieving an integrated legal perspective is difficult, not because there are many laws, or because many departments are involved, but because there is an implicit resource use policy which people with many vested interests would be reluctant to change. Besides the possibility of making quick money by the rapid exploitation of resources, there is also a tacit assumption about what constitutes development.

The belief that development and ecological interests are opposed has been shown to be fallacious in numerous ways. A sustained development can take place only if the natural resource base is sustained, and this cannot be done without long-term ecological planning. The economics of the vested interest resource exploitation is actually developmentally counter-productive.

Also the belief that equity and development cannot go together is a groundless economic theory. No resource can be sustained on a long term basis for development use unless the local people or the concerned local State is interested and empowered to sustain it; and no local people or State will be interested in sustaining it if they do not equitably benefit from the resources. A non-equitable exploitation of resources is, therefore, a sure way of not only impoverishing the people but also of destroying natural wealth. The degree to which the local people are impoverished is also the degree to which the environment is impoverished; there is a direct causal link which is usually not taken into account in modern theories of economics and poverty.

If these issues were clear it would not be difficult to understand what is meant by an integrated legal approach to environmental management. It would, first of all, mean that all environment-related legislations must aim at achieving equity in resources usage, so that there is sustained interest of the local people and the particular State in sustaining the environment. Second, it would mean that no environmental law should propagate a short-term strategy of resource exploitation; it should allow only a sustained-yield use of resources. Third, where appropriate national policies are available, such as the National Water Policy or the National Forest Policy, the laws should truly put such policies into operation. And lastly, indvidual laws must take into account the environmental factors related to actions taking place on sites, laws concerning road and house construction must examine the possibility of landslides, and those pertaining to water projects must consider rehabilitation and environmental restoration.

The discussion in this paper relates mainly to legal policy and the general types of amendment required to achieve an integrated ecological approach in the management of the moutain environment. To make these policies operational, each of the laws will have to be studied-definition, section, and clause wise, and the appropriate amendments suggested. Where too many changes are required, such as in the forest laws, new drafts will have to be prepared. This work must be done separately for all the laws of each of the twelve Himalayan States.

This, evidently, is an enormous task, but then one must remember that the work of changing a colonial legal regime that has taken over a century to perpetuate can hardly be a simple task. What is gained in being able to bring about such a change is mightier than the Himalayas, because it will bring about a change in the fate of millions of Indians who live in the plains and whose livelihoods depend upon the rivers that the Himalayas bestow to the people and the land. It will also change the fate of future generations who will not have to suffer from mistakes made now.

ICIMOD is the first international centre in the field of mountain development. Founded out of widespread recognition of environmental degradation of mountain habitats and the increasing poverty of mountain communities, ICIMOD is concerned with the search for more effective development responses to promote the sustained well being of mountain people.

The Centre was established in 1983 and commenced professional activities in 1984. Though international in its concerns, ICIMOD focusses on the specific, complex, and practical problems of the Hindu Kush-Himalayan Region which covers all or part of eight Sovereign States.

ICIMOD serves as a multidisciplinary documentation centre on integrated mountain development, a focal point for the mobilisation, conduct, and coordination of applied and problem-solving research activities; a focal point for training on integrated mountain development, with special emphasis on the assessment of training needs and the development of relevant training materials based directly on field case studies; and a consultative centre providing expert services on mountain development and resource management.

Mountain E[illegible] Management constitutes one of the four themati[illegible]. The progra[illegible]nt of natura[illegible] the mount[illegible] and techni[illegible]ntain enviro[illegible]tems throug[illegible]dies. Propel[illegible] their interre[illegible]vides the ba[illegible]ns.

Interna[illegible]opment

Telex 2439 ICIMOD NP Cable ICIMOD NEPAL

Telephone (977 1) 525313 Fax (977 1) 524509