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**Negotiating the Commons:
Land Use, Property Rights and Pastoralists of the
Western Indian Himalayas**

By

Iain J. Davidson-Hunt

A Practicum Submitted
in Partial Fulfillment of the
Requirements for the Degree,
Master of Natural Resources Management

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**NEGOTIATING THE COMMONS: LAND USE,
PROPERTY RIGHTS AND PASTORALISTS OF THE
WESTERN INDIAN HIMALAYAS**

By

Mr. Iain J. Davidson-Hunt

A practicum submitted to the Faculty of Graduate Studies of the University of Manitoba in partial fulfilment of the requirements of the degree of Master of Natural Resources Management.

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Abstract

This practicum presents the results of ten weeks of fieldwork in the Kulu Valley of the State of Himachal Pradesh, India, undertaken during the summer of 1994, as part of the team project on "Sustainable Development of Mountain Environments in India and Canada". The general purpose of this research is to document the ability of a local collective (village) to influence the management of a Kulu Valley commons within the framework of state law. The specific objectives are to: identify the property rights regimes; identify the users of specific common property resources; describe the collective management of the grazing commons; identify interactions among collectives and between collectives and the state; and, derive recommendations for sustainable resource management.

Results are presented from two villages in the Kulu Valley, although the results are focused primarily on one village. The overall direction of the research is framed by Oakerson's (1986) and Berkes and Folke's (1994) frameworks for the study of common property management. Fieldwork is based on an iterative process of focus groups, interviews with 'knowledge experts' (key consultants) and a structured household interview. The research findings include the identification of ten land use types known to local villagers, seven of which can be identified as having elements of common property. Property rights, not existing in law (*de jure*) are claimed by the villagers and exist in custom (*de facto*). These findings establish that the commons in the study area are complicated, due to the interplay between *de jure* and *de facto* property rights, and confound a simple application of common property theory to resource management. An indigenous institution, the *mimbers*, still exists, alongside other village institutions such as the *Mahila Mandal* and *Village Panchayat*, and performs a number of duties such as dispute settlement among villagers and between villages regarding resource use.

The pastoral system is an example of a traditional land use that is important for both cultural and ecological reasons at a time when the emphasis is shifting to non-traditional land use activities such as orchards. In addition, this study suggests that the pastoral system makes an important contribution to regional sustainability, although a

weak link was found in the overwintering areas. The grazing system provides a case study for the interaction of pastoralists with agriculturists and the state over the use and management of the pastoral commons. In addition, a system of common property management is embedded within seasonal migration cycles and grazing management decisions based on local knowledge. However, the number of village pastoralists is decreasing as social relations between agriculturists and pastoralists change in response to an emerging orchard economy, privatization and/or closing of grazing grounds, and pressure from regulations regarding forestry.

The findings of the study suggest that local people in the area of study are not mere spectators in resource management, but active participants in determining how resources are managed. Although the village system of common property management is hampered due to historic processes of state expropriation of resources, villages maintain influence in management of resources through village institutions. In addition, customary systems of common property management, such as that utilized by the village pastoralists, also regulate how resources are managed. The different interests in a resource, and different visions in how resources should be managed often lead to conflicts among user-groups, and between villagers and the state. Villagers, denied a voice in the state management of resources, undertake actions which are considered in this work to be resistance against state appropriation of resources.

The overall conclusion of this research is that customary systems of resource management are based on a web of use rights and social relations which are more complicated than western systems of property rights. Western systems of property rights do not provide the needed flexibility for, nor capture the subtlety and complexity of, indigenous systems of resource management. This study recommends that village rights should be delineated for specific resource areas, but that the actual property rights should be continually redefined by the resources users themselves. Recognizing that villages are bound in relationships with external actors distorting power relations within the village, it is recommended that the Forest Department ensure a negotiation process which defines the management structure, while allowing customary interests to be represented.

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This practicum is the product not of an individual but the result of a web of people who stretch from the Himalayan mountains of India, through the prairie city of Winnipeg, Manitoba to the Amazon Basin of Bolivia. The most valuable part of this thesis is not what is written on these few pages, but the relationships which have been established in the process. Foremost are the relationships with people of numerous villages who have taught me about 'alternative notions of possession.' I am indebted for their willingness to take the time to teach me, and for their expression of trust in sharing life experiences. A special word of thanks to Mehar Chand Thakkur for accompanying me during the field portion of this research.

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Chapter 1

Introduction

1.1 Preamble

Ever since the clarion call of the Brundtland report researchers and practitioners in numerous fields have turned their attention to how natural resources can be managed in such a manner that "...meets the needs of the present [but] does not compromise the ability of future generations to meet their own needs" (WCED 1987:8). The case for sustainable development was further advanced by the 1992 United Nations Environment and Development Conference in Rio de Janeiro, Brazil. At that conference, a number of priority areas were enunciated in Agenda 21 (Framework for Environment and Development in the 21st Century) which must be considered if the goal of sustainable development is to be achieved.

One of the priority areas identified in Agenda 21 is mountain watersheds. In response to the call for a focus on research in mountain watersheds, a team of researchers in Canada and India developed a research project whose principle purpose is "...to examine conventional and alternative approaches and policies to land resources management in India and Canada" (Berkes and Singh 1993:2). One item of concern initially identified by the senior investigators of the project as necessary for the sustainable management of land resources in India and Canada is common property. Approximately 90 percent of land resources in both countries can be classified as common property so the importance of common property management cannot be understated (Bourdages 1992; Gadgil and Guha 1993). Agenda 21 also recognizes that indigenous peoples who inhabit mountain watersheds should be included in the formulation of sustainable mountain development policy. Although indigenous peoples are both key actors and holders of knowledge, the indigenous systems of natural resources management have largely been ignored by international and national sustainable development projects. In an effort to offset this oversight, this research project specifically focuses on the indigenous systems of common property management and how these systems have been affected by natural resources management policy.

1.2 Background

They clap in gaol the man or woman,
Who steals the goose from off the common;
But let the bigger knave go loose,
Who steal the common from the goose¹

Common property resources, or those resources for which exclusion is difficult and use leads to subtractability (Berkes and Farvar 1989), pose a special dilemma for natural resources management. Exclusion is difficult because more than one person may have an established right to the resource. Use leads to subtractability because if one person consumes the resource it is no longer available for use by another person. The common property dilemma hinges on the recognition that when more than one individual has access to a resource, one individual is able to obtain benefit while the collective bears the cost. As noted by Hardin (1968), the individual benefit is greater than the individual cost providing incentive for individuals to overexploit resources held in common.

The dominant solutions within natural resources management theory and policy for the commons dilemma have been the institution of private property and state ownership of natural resources. Private property vests all property rights in an individual or private corporation. In economic terms, resources are managed efficiently and effectively when owners "hold the full bundle of property rights" (Randall 1987). The full bundle of property rights includes; the right of access and use of a resource, the right to manage a resource, the right to exclude other users, and the right to sell or lease the preceding rights (Schlager and Ostrom 1993). The state solution vests the full bundle of rights in the crown or state, justified on the basis that the state can sustainably manage resources better than local collectives, as well as provide the greatest benefit from the resource for the greatest number of people (Peluso 1992).

Collective local management of common property resources has always existed and is increasingly challenging the assumptions behind the dominant paradigms of private and state management of natural resources. Collective management theorists (see for example Berkes 1989; BOSTID 1986; Bromley 1992; Ostrom 1990) agree with Hardin's

¹ Old English rhyme, as cited in Peluso (1992:7)

characterization of the commons' dilemma, but disagree with the assumption that institutions of private or state property are the only solutions. Longhoffer (1993:384) summarizes the position of collective management theorists as having charged Hardin and other private property proponents with a fundamental "teleological fallacy" and "...claim there exists no inevitable or unidirectional 'tendency' ... for common property to be replaced by private property." Collective management theorists, in fact, demonstrate through case studies that collective management can be as sustainable as private or state management in both biological and economic considerations and may lead to more equitable outcomes.

The dominance of the private property and state solutions to the common property dilemma has resulted in a dualistic landscape whereby the majority of resources are held as private property or state property. Colonialism and the subsequent formation of nation states has in many cases infringed upon local collectives and their ability to manage natural resources through the abridgment of local customary rights (Gadgil and Guha 1993; Guha 1989; Peluso 1992). Private versus collective management of natural resources is not an ideological debate at the local level but the outcome of demographic, economic and environmental factors. Commons systems include resources held under both private and collective tenure, both of which may adopt different forms of tenure at different periods of time. Netting (1972; 1981) demonstrates that a Swiss village has managed the same land, but at different periods, as both private and common lands. The village alternates the two types of management depending upon historical circumstances, such as village demographics and the main product being produced for the market. Resources, then, are managed under flexible and changing tenure arrangements within local collectives with members of the collective holding a voice within negotiations as to how resources will be managed and how the benefits will be distributed.

Imposed private property or state solutions limit the ability of local people to collectively manage natural resources through the imposition of a new property rights regime. However, despite a legal definition of resources as private and state, local collectives have not remained completely silent or immobilized and continue to influence the management of local resources. Often informal or customary management contradicts

state management, acting as evidence for state resources managers that local collectives are unable to manage resources (Agarwal 1994). It is entirely possible, however, that this is an attempt by local collectives to negotiate alternative resource management systems from those that have been imposed by the state for local collectives (Peluso 1992). As Bandyopadhyay (1992:298) notes for India: “[t]he conflicts over forest resources in Tehri-Garhwal remained for a long time as basic economic conflict over access to resources and right to survival.” Indeed, the Indian experience shows that the major tension over natural resources management is between local and state control (Guha 1989; Guha and Gadgil 1992).

1.3 Issue Statement

The history of common property has been one of appropriation of local resources to fulfill the needs of a colonial or post-colonial elite, resulting in the alienation of local people from their commons (Agarwal 1987; Gadgil and Guha 1989; Shiva 1991; Thompson 1991). As village livelihoods are dependent on common property for timber and non-timber products such as; fuelwood, timber, food, fodder, grass, and bedding (Agarwal 1987; Jodha 1992), the enclosure of the commons in India leads to the economic and environmental impoverishment of rural villagers (Damodaran 1989; 1990; 1993). Natural resources management policy developed during the period of colonial expansion was based upon an inequitable distribution of the benefits from natural resources use between local groups and elites and was justified as being for the public good (Peluso 1992). The establishment of private and public systems of natural resources management also weakened indigenous systems of common property management. Bromley (1992:7, my emphasis) notes that “...much of the problem in many developing countries today is that *local-level institutional arrangements have been undermined by colonialism and the emerging nation state*, while nothing approaching an orderly resource management regime has been put in place by the national government.” In spite of natural resources management policy, some indigenous people have maintained their own systems of common property management within the framework of, or in opposition to, natural resources management policy. An understanding of how indigenous systems of common

property management are organized and how benefits are distributed among local user-groups is important for the development of sustainable natural resources management policy as local groups assert their aspirations to manage local resources.

1.4 Purpose and Objectives

The purpose of this study is to document the ability of a local user-group to influence the management of the Kulu Valley commons within the existing framework of state ownership and law in the State of Himachal Pradesh, India. The specific objectives are:

- 1) To identify the property rights regime at the level of law (*de jure* rights) and custom (*de facto* rights), if any, under which natural resources were held in a sub-watershed of the Beas;
- 2) Identify the users of selected common property resource within the village area;
- 3) Describe the collective management of a common property resource; the grazing commons;
- 4) Identify interactions over resource use among collectives and between collectives and the state; and
- 5) Derive recommendations from the study for sustainable natural resources management policy and theory.

1.5 Significance of the Study

Within the broad scope of natural resources management literature one theoretical and empirical line of study is the interdisciplinary research of collective management theorists who examine the conditions under which local collectives avoid the 'tragedy of the commons' outcome. These studies focus on a case study approach which documents the knowledge, rules and institutions by which 'indigenous' or 'local' peoples successfully manage natural resources (Berkes 1989; BOSTID 1986; Bromley 1992; Wade 1988) and from which principles necessary for sustainable community management of resources are derived (Ostrom 1990). Another aspect of study within common property literature is the examination of the historical processes by which common property systems have been dismantled through the establishment of capitalism in European countries (Behar 1986;

Neeson 1993; Thompson 1991; 1975) and carried abroad through colonialism (Thompson 1991). Emerging from these studies is an examination of ways in which commoners, or people who depend upon a commons system in practice, have defended their interests in common property (Scott 1986; 1985; 1976; Thompson 1991; 75).

The political economy of common property management suggests that community management of resources is predicated both upon the ability of a local collective to solve the collective choice dilemma and replicate the common property system into the future. Natural resources management policy is one of the forces identified by the political economy literature which undermines commons systems of natural resource management and hinders the ability of communities to replicate their commons systems into the future.

There are, however, few studies within the natural resources management literature, which try to combine the study of community systems of natural resources management with an examination of the ways in which local people protect their access to the commons. A notable exception is the work done in India by Guha (1989; 1985; 1983a; 1983b), Guha and Gadgil (1989), and Gadgil and Guha (1993) which examines the influence of colonialism and post-colonial forest policy on forest dwellers who utilize a commons system. Another work is that of Peluso (1992) which examines the resistance by Javanese peasants against the forest policies of the colonial and post-colonial Indonesian state. This study attempts to broaden the discussion within the literature on community management of natural resources to move beyond an examination of the structure of village management (rules, institutions, knowledge, property rights) to include discussing how community commons systems are dismantled through state natural resources management policy.

1.6 Key Concepts

Two concepts are key to this study and need to be defined from the outset of this practicum; indigenous management systems and village. For the purposes of this practicum an indigenous system is defined as any system which includes "an organization or social activity which has been set up primarily as a result of local initiative" (Gilmour and Fisher 1991:xxi in Rai and Thapa 1993:1). Indigenous systems incorporate practices

or techniques that have been developed from within the group, internally enforced and maintained, or originated from an external source but which have been locally adapted² (Rai and Thapa 1993). Indigenous systems of natural resources management are maintained by local peoples and include both "...biological management and the social arrangements by which access to the natural resources are regulated (Rai and Thapur 1993). Biological management may be based on traditional ecological knowledge, indigenous knowledge, scientific knowledge or religious belief.

Indigenous systems are distinguished from both externally sponsored systems and traditional systems. Externally sponsored systems are those systems (organizations, rules and practices) which have been imposed upon local peoples by the state, non-governmental organizations or other external agencies (Messerschmidt 1993). The use of the term 'traditional' as in traditional knowledge system is not used in this study. Although traditional implies antiquity it does not specify the origin of the system. In addition, traditional also implies immutability and does not consider that resource management systems are characterized by dynamism and flexibility, incorporating knowledge obtained from other indigenous or scientific knowledge systems. Indigenous management systems are generally informal systems which rely upon unwritten, socially agreed upon rules instead of a written constitution and formal organization. Furthermore, indigenous systems are based upon the consensus of a group of people who manage in response to their own needs (Rai and Thapa 1993). Although indigenous management systems are informal, they influence both the productivity of a resource and the biological characteristics (species composition) of the resource as it is reproduced into the future.

The use of the term village, as in village systems of resources management, is also problematic because it is often difficult to place spatial and social bounds on a group of resource users (Messerschmidt 1993). Indigenous systems of natural resources management are often based upon the ability to exclude or limit access to outsiders from certain resources at specific times of the year. The basis of exclusion may be residence, kinship or other factors, but exclusion may also vary between resources and seasons, and

² As the emphasis in this definition is upon the local, the term local will be used interchangeably with indigenous.

it may be unclear if the basis of exclusion is residence or other factors. Therefore, the terms collective or user-group are utilized interchangeably in this study to refer to any supra-individual group which is characterized by a set of mutually acknowledged rights of use and access to natural resources (Messerschmidt 1993; Rai and Thapa 1993).

1.7 Delimitations and Scope of the Study

This study is limited due both to time spent in the field and translation issues. The study was carried out over a period of ten weeks in the field in the Kulu Valley. Part of that time was spent contacting government institutions, villagers, building trust and locating translators. Documentational research was impractical as all documents were in Hindi, and were not complete or reputedly accurate. It was realistic to work with only one village in an in-depth manner and cross-check the results with a second village. Due to the time constraint, the study focuses on a broad overview of customary property rights as an indication of the indigenous system of forest management, in addition to focusing on a pastoral group as a common property management case study.

1.8 Organization of the Practicum

This practicum is organized into six chapters. Following the Introduction, Chapter 2 begins by presenting an overview of the biophysical, historical and cultural characteristics of the study area to provide a context for the literature review and results. Chapter 2 also outlines the theoretical basis of the methodology and the methods utilized during fieldwork in India. Chapter 3 presents a review of the literature which forms the theoretical basis for this study and is divided into three sections. The first section reviews: the political economy of common property management; the second focuses on how state hegemony was established over natural resources in India during the colonial and post-colonial periods; while the third reviews the cultural ecology literature of mountain environments and of pastoral subsistence strategies.

The results of the study are largely contained within Chapter 4 and Chapter 5. Chapter 4 presents the property rights of various (10) land-use types found in law and custom for the study area, and the local institutions which manage village resources.

Chapter 5 examines one land-use type, grazing land, and utilizes it as a case study of how collective systems of natural resources management function and are impinged upon by law and changes in economic strategies of other collective groups. Culturally encoded management practices such as seasonal cycles, informal rules, and grazing management decisions which regulate the use of the grazing land are presented in detail in this chapter. In addition, Chapter 5 discusses how economic forces can restructure social relations between user-groups, ultimately serving to break down indigenous common property systems.

Chapter 6 begins with a discussion of the interactions which occur between different collectives, between collectives and the state, and on how alliances are formed among diverse groups to change access to common property resources. Chapter 6 also specifically examines a pastoral user-group and its negotiations with other user-groups and the state, maintaining access to grazing commons. The chapter ends with some conclusions and recommendations that have emerged from the study.

Chapter 2

Study Area and Methodology

2.1 Study Area

i Biophysical Context of Study Area

The present study was undertaken with two villages, one slightly upstream and the other downstream from the town of Manali where the study team was based. This area forms the upper watershed of the Beas river and is part of what is known as the Kulu Valley (Figure 1). The Beas river begins at the Rohtang pass at 4 500 m a.s.l. and descends quickly over a short distance reaching the town of Manali at an elevation of 2 000 m a.s.l. in less than 10 horizontal kms (Berkes et al 1995). This defines the sense of distance in the study area. Horizontal distance is less important than vertical elevation as a small change in horizontal distance leads to substantial climatic differences and types of resources which are found at different elevations.

The Kulu Valley has held importance both historically, and in the present, as it provides a north-south route bisecting the general east-west orientation of the Himalayan mountains (Gardner 1995). This biophysical characteristic established its historical importance as a trade route between the plains and the upper plateaus of Ladakh and Tibet providing the shortest route joining the Dhauladhar to the Pir Panjal ranges. The Kulu Valley, a temperate zone, also acts as a transition zone between the tropical areas of Mandi and Bilaspur and the dry alpine zones of Lahul and Spiti via the Rohtang and Hampta passes. The Kulu Valley was, in part, an interesting area of study due to its characteristic as a zone of biophysical transition between cold arid and hot humid zones. These biophysical factors made the Kulu Valley the centre of pilgrimages, as well as migrations which facilitated the movement of people and their livestock across vertical climatic zones within the western Himalayas since time immemorial.

The high energy nature of the Beas river influences the settlement pattern of villages in the Kulu Valley. Villages are situated away from the river, often on spurs formed by the streams which run into the main river channel. There are a number of

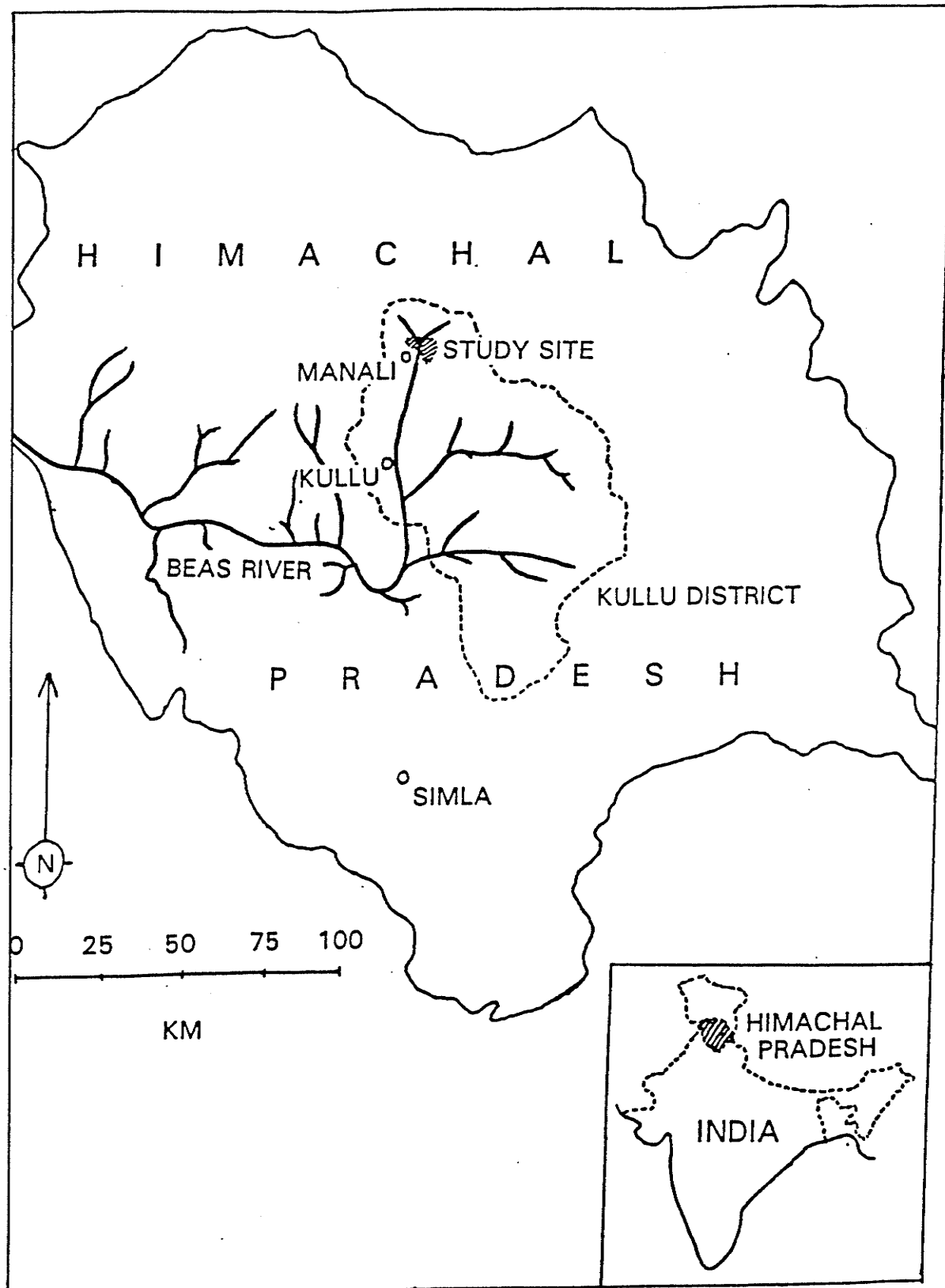


Figure 1. Location of the study site in the Kulu district of the State of Himachal Pradesh India. Study site is located in a forerange of the Great Himalayan mountains.

reasons for this settlement pattern. A high speed river, characterized by glacial spring melts, leads to a spring flood pattern. Although the alluvial land near to the river is good for agriculture, it is not a suitable place to build permanent settlements. In addition, the flow of the river Beas in the study area is too strong to tap for irrigation water. Rather, it is easier to tap the small side streams (*malas*) and then divert water down to the paddy fields located along the main river channel. These factors influence the characteristic settlement pattern of the villages. Villages are set back from the river built on a spur, rice paddies fill the landscape between the village and the main river. Non-irrigated agricultural lands (*chait*) are situated above the rice paddies (*ropa*), before the slope of the land becomes too steep to farm. As the slope becomes steeper, there are village grazing lands and forests which continue upward until the tree line is reached at approximately 3 200 to 3 500 m a.s.l. This settlement pattern has also been noted as characteristic in other parts of the middle ranges of the Himalayas (Bisht and Bisht 1990).

ii Historical Context of Study Area

The recorded history of Kulu is largely a record of who ruled which area during which period of time. The key work which summarizes the history of Kulu rulers is the work by Hutchison and Vogel (1933), and reflects a British imperial preoccupation with establishing the distinction between ruler and ruled. The history of local villagers are almost, if not completely, ignored. This lack of attention to the history of local peoples makes it difficult to know with any certainty the pre-colonial systems of production or of rights to local resources. It can be surmised from the history of the rulers, however, that the relationship between rulers and ruled has contained characteristics of tributary models. In spite of the lack of attention to local histories, by both British and Indian historians, a history of the rulers provides the framework within which local peoples had access to, and utilized, local resources.

The historical record of rulers reveals that the area has a long history of sociopolitical organization. It has changed from periods of tribal chiefdoms, feudal systems, British colonial rule, to the present day organization of the nation state. The earliest period of rule is thought to be a system of small chiefdoms ruled by Ranas and

Thakurs (Singh 1979; Hutchison and Vogel 1933). The Kulu State, Kuluta, is presumed to have its origins in the second century A.D. as Rajput principalities. It is thought that it was not fully consolidated until the sixteenth century A.D. by Raja Sidh-Singh, founder of the Badani dynasty. The period of state formation is represented as a constant struggle between the local chiefdoms and the Kulu Rajas, although the details of this process are largely speculative. As noted by Hutchison and Vogel (1933:424): "[t]he chronology of the Kulu history, anterior to the accession of the Badani dynasty in A.D. 1500, is largely a matter of conjecture." Although conjecture, it is clear that for close to two thousand years the area has been organized either on a local basis through chiefdoms or on a principality basis ruled by Rajas.

The history of rulers after the sixteenth century and the rise of the Badani dynasty is better recorded, but becomes more complex due to the detail. A full description of the rise and wane of power in the Kulu area can be found in Hutchison and Vogel (1933). Due to the importance of this area as the major trading route from Ladakh to the Punjab plains, there was a constant struggle by dynasties from both the north and south to control this area. The Kulu state underwent a continual process of expansion and defeat as local Rajas of Kulu and the surrounding states vied for power (Hutchison and Vogel 1933). During this time, alliances were formed with stronger regional Rajas when one of the local Rajas was defeated by another, by a group of Rajas, or by a Raja in conjunction with a stronger regional power.

An example of this process occurred in the early 1800's when the Raja of Kulu entered an agreement with the Gurkhas to withstand the attacks of the Raja of Kangra. In return for the aid of the Gurkhas who sent forces to help Kulu defeat Kangra, the Raja of Kulu was required to pay tribute to the Raja of the Gurkhas. By the mid 1800's, however, the power of the Sikh Raja from the Punjab plains had increased and the Kulu Raja became subject to the Raja from the Punjab. The strategic importance of the Kulu Valley as a trade route and as a passage into the Tibetan plateau had long been noted by the British. After the first Sikh War, when the British defeated the Sikh Raja, the Kulu principality was ceded to the British in the Sikh Treaty of 1846. At this time all except the jagir of Wasiri-Rupi was placed under the authority of an Assistant Commissioner

including Spiti and Lahul. The British then ruled the area of the Kulu Valley until Indian independence in 1947.

iii Cultural Context of Study Area

The cultural history of the Kulu Valley is no less complex or any clearer than the political history. The two can, in fact, be thought to be linked due to the constant struggle over the area as a major trading route. Even in areas of less constant conquest and reconquest, the cultural history of the Himalayan States is not clearly understood. Berreman (1972:15) states, echoing Hutchison and Vogel, that: "[w]e can safely say only that the origins and affinities of contemporary Pahari castes and occupational groups are largely unknown, and that this fact has stimulated conjecture."

Most conjecture surrounds the origin of the people who inhabit the hills. As shown above, the area has been a central axis of movement between the plains and Ladakh. It is not clear whether people originally moved into this area from the mountains to the north or from the plains to the south. The general theory is that there are two major ancestral stocks which make up present day Pahari culture (Berreman 1963). One stock is assumed to be the original indigenous people of the area who now make up the 'scheduled' castes. The higher caste, the Rajput caste, is assumed to have descended from an Indo-Aryan group of central Asian origins. This group is often referred to as *Khasa*. Although the origins and direct descent of both of these groups is unclear, it does provide a historical context for the general caste structure of the region.

Guha (1989) broadens the classifications between populations to three tiers. He defines the primary distinction as that between *Bith* (clean) and *Dom* (unclean). The secondary distinction is between *Thuljat* and *Khasa*. *Thuljat* are assumed to be the latest in a line of conquerors to the area, while the *Khasa* were the original conquerors to the area. The distinction is thus defined primarily between rulers and ruled. The *Khasa* were the indigenous rulers compared to the *Thuljat*. The *Thuljat* took the area from the *Khasa* and became the new rulers. Both *Thuljat* and *Khasa* contained Brahmin and Rajput castes, although the Rajput are by far the numerically and economically dominant caste. This analysis supports Berreman's, although it expands the distinction between the high

castes. Although the origins of the people of the region are unclear, it appears that it has been largely populated by Indo-Aryans which migrated into the area as rulers, and indigenous peoples stretching back until time immemorial.

In spite of these uncertain origins of people in the Kulu Valley there is an identifiable Pahari culture. Pahari Hindu culture has a number of distinctive traits which make it unique from plains Hindu culture. One of the basic differences between plains and Pahari culture is considered to be its caste structure. As noted above, there are two major caste groupings, the Rajput and 'Scheduled' Castes, the latter being relatively undifferentiated in contrast to plains culture (Berreman 1963). The Brahmin caste does exist, but it is a minority compared to the other two caste groups. Another distinguishing feature is the public position of women, and the brideprice system of marriage rather than a dowry based system. Although Pahari culture follows Hindu practice, it is an unique form of Hinduism recognized as different by other Hindus (Berreman 1963). Finally, Pahari is recognized as a distinct language, although from the same root as Hindi, Old Indo-Aryan, and part of the Indo-European language group (Dutt and Geib 1987).

It is difficult to define who belongs to an ethnic or cultural group. Perhaps the clearest sense of boundary stems from self-identification whereby cultural definition is based upon whether people of the group identify themselves as part of that group, and are identified by others as belonging to that group (Barth 1969). For example, people of the study area self-identify as a mountain culture distinct from the plains Hindu culture and identify themselves as Pahari culture. Self-identification usually emerges as a lament to the influence of plains Hinduism and culture in changing Pahari culture. It also emerges as a sense of deep pride in their culture, combined with a sense of being looked down upon by the dominant culture of the plains. Identification of Pahari peoples by plains culture usually occurs in disparaging terms due to their unique cultural practices. Pahari peoples are usually considered to be 'backward' by plains people due to the social position of women and the characteristics of the agricultural system. Within this broad classification of Pahari, however, there is similarity as well as difference amongst Pahari culture. Pahari does, however, allow a distinction to be made between plains Hindus and Himalayan Hindus, and a recognition that generalizations about plains culture do not hold when looking at

Pahari culture. As Berreman (1963:241) notes: "...there is a common Pahari (or, if that offends, Himalayan) culture in the lower Himalayas extending from Kashmir across Himachal Pradesh and Uttar Pradesh into Nepal - a culture of significant commonalty encompassing significant diversity."

2.2 Study Methodology

i Theoretical Basis of Proposed Research Methods

The basis of methodologies for the study of how local communities, indigenous or otherwise, manage common property is the framework developed by Oakerson (1986). The most common form that these studies take, using this methodology, is the production of case studies (see for example BOSTID 1986; Berkes et al. 1989; Bromley 1993). The analytical framework developed by Oakerson (1986) examines "...four mutually exclusive data sets, or components for analysis: technical and physical attributes [of common property]; decision making arrangements; patterns of interaction; and, outcomes or consequences" (Messerschmidt 1993:4). An expansion of this methodology was recently developed by Berkes and Folke (1994) for linking social and ecological systems.

Berkes and Folke (1994:4) identify "...seven sets of variables which can be used to describe social and ecological system linkages in any resource case study: (1) ecosystem; (2) resource users and technology; (3) local knowledge; (4) property rights; (5) institutions; (6) pattern of interactions; and, (7) outcomes." This study provides a brief overview of the ecosystem and of resource users and technology in the description of the study area. The focus of this study is, however, variables 2 through 6 with an emphasis on variable 4; that is, on property rights. Questions utilized in the field for informal and semi-structured interviews were based upon a selection of key questions identified by Berkes and Folke (1994:15) and are provided in Appendix A.

In addition to the Oakerson (1986) analytical framework for the study of common property systems, the present study utilizes the approach outlined by Rhoades (1982) on the use of informal interviews in agricultural systems research. Rhoades emphasizes the collection of secondary materials (maps, government reports and published studies) in order that they be reviewed prior to entering the field. Rhoades (1982) also suggests the

use of an iterative learning process, with "conversational" interviews rather than structured formal interviews for rural settings. The use of a structured, formal interview presupposes a level of researcher understanding not often available when studying indigenous resource and agricultural systems. Rather, Rhoades advises that the method should focus on "talking about" an area of inquiry with a key consultant and only utilizing questions to stimulate or direct conversations. As the researcher begins to understand the system it is possible to use more directed questions to clarify areas of confusion, and structured interviews to obtain quantitative data about important aspects of the system. This methodology is similar to agro-ecosystem analysis (Conway et al 1987) and Rapid/Participatory Rural Appraisal (Conway 1985; Chambers 1991a; 1991b).

A recent review of rapid appraisal methodologies such as agro-ecosystem analysis and Rhoades's informal agricultural systems research characterizes these methodologies as being based upon traditional qualitative research. However, they differ from traditional qualitative research "...in three important ways: more than one researcher is always involved, researcher team interaction is a critical aspect of the methodology, and the results are produced much faster." (Beebe 1995:42). Rapid rural appraisal can be defined as:

...an approach for quickly developing a preliminary understanding of a situation where specific research techniques are chosen from a wide range of options and where it is assumed that (1) all the relevant parts of a local system cannot be defined in advance, (2) the local system is best understood by combining the expertise of a multidisciplinary team that includes locals, while combining information collected in advance, direct observations and semi-structured interviews, and (3) time should be structured to ensure team interaction as part of an iterative process. (Beebe 1995:43).

In addition, the conceptual foundations of rapid appraisal methodologies are "(1) a system perspective, (2) triangulation of data collection, and (3) iterative data collection and analysis." (Beebe 1995: 42). Rapid appraisal techniques such as transect walks, review of secondary material, seasonal calendars, mapping exercises and "conversational interviews" with local knowledge experts were used in this research. As well, cross-checking data with key consultants from two socio-economic groups within a village, from two different villages, and from both villages and government was also utilized during the

field research of this study. Rapid appraisal techniques and methodology was useful for obtaining a quick overview and understanding of the production systems utilized by rural households and for identifying specific areas of research inquiry.

Underlying the research methods utilized for this study is a recognition of a phenomenological approach (Agar 1980; Bernard 1993). This qualitative approach to cross-cultural social research has largely been developed within the discipline of anthropology. The best known approach, within the anthropological field, is that of ethnography. Ethnography has been summarized as being a dialectic process rather than a linear process in which "...data collection and analysis are done concurrently rather than being separately scheduled parts of the research" (Agar 1980:9). The process takes the following form: "you learn something (collect some data); then you try to make sense out of it (analysis); then you go back and see if the interpretation makes sense in light of new experience (collect some more data); then you refine your interpretation (more analysis); and so on" (Agar 1980:9).

Although this may seem haphazard there are some methodological steps which must be followed. The most important of these are the ability to establish relationship with local people, identification of key informants, power of observation, the ability to write field notes and code them so that the information is not lost, and patience (Bernard 1991). Another key element is the preparation of informal, unscheduled interviews developed in the field to guide discussions with people in order that needed information be obtained. Due to the short period of field research, this study does not claim to undertake ethnographic field study. It does, however, use some of the qualitative methods described above to understand the commons system of the Kulu Valley. The details of how this methodological theory was applied in the field is provided in detail in the next section on field research.

ii Field Research

The study was undertaken within the upper reaches of the Beas River, in the Kulu Valley, State of Himachal Pradesh, India (see Figure 1). After arriving at the study location rapid appraisal techniques were utilized to gain a basic understanding of the

settlement pattern, and the natural resource and agricultural systems of the study area. The first activity was to undertake transect walks from Manali to the Hampta pass, Manali to the Rohtang pass, Manali to the Solang Valley, and through a number of villages surrounding Manali. At the same time government and non-governmental institutions were contacted to obtain secondary sources of information such as the forest settlement report, Forest Department maps of the Kulu District and of village forests, and regional studies of the Kulu Valley prepared by other research teams. Through this process a number of key consultants³ within these institutions were identified and interviewed to gain an understanding of the resource use of the region, production strategies of the villages, resource conflicts, advice on villages with which to undertake this study, and people who might work as translators. This process occupied the first two weeks of fieldwork and resulted in the research team identifying the overall structure of village settlement, village systems of natural resources use and agricultural production, contracted translators and established relationships with two villages near to Manali with whom the study could be undertaken.

Research began with the village of Chachoga, in particular with the *Mahila Mandal* (women's organization). Research with Chachoga was possible due to contact with the Forest Department which scheduled a meeting with the *Mahila Mandal* in the village. During this first meeting, the purpose of our study was communicated to the *Mahila Mandal*, and a relationship was established with some of the key leaders. Several days later the *Mahila Mandal* consented to participate in the study at which time the village headman (*pradahn*) was approached who similarly gave consent for the study to be undertaken with the village. Contact through the Forest Department was particularly important for this study as a principle hurdle to overcome in the research was to establish trust with villagers within a short time frame. Trust was especially difficult to establish within this study area as there was a large transient population of western 'hippies' who were not held in high regard by the villagers. The teams' introduction by the Forest

³ Key consultant refers to people identified within institutions or villages who were considered to be 'knowledge experts' and who were interviewed during the course of the study. The term consultant is slowly replacing the term informant in anthropological literature.

Department to the *Mahila Mandal* established a difference between 'us' and the 'hippies' and convinced the villagers that we were 'serious' researchers.

It was initially thought that the research team would all work in one village. It became apparent, however, that four researchers in a village of 60 households would overwhelm the village and lead to consultant 'burn-out.' It was also necessary to utilize two translators for the research team. The second village was therefore chosen due to contact with a translator, who was a resident of Goshal village, through the owner of the guest house where the study team was in residence. The *pradahn* was then approached for consent to undertake the study. Each participant in the study was informed of the purpose of the study, assured of personal confidentiality and allowed the opportunity to not participate. Most people in the village chose to participate, although there were some people who did not want to be interviewed. Interviews with people in Goshal and Chachoga began once translators had been found, rapport established with the villagers, and secondary sources of information collected and reviewed. This process allowed for an iterative learning experience between villagers and researchers, and among the research team during nightly 'tea-time' meetings. Key consultants were also identified in each village and were interviewed to gain an understanding of the village system of land-use categorization, property rights, institutions and the management system of village pastoralists.

The accuracy of the information obtained during unscheduled, informal interviews was checked using a process of triangulation. Specifically, information provided by village consultants was collected through informal, unscheduled interviews during a focus group with village elders, in interviews with village pastoralists, and during scheduled household surveys. The initial key consultant was the translator who provided a basic outline of the structure of land use, and informal rules and institutions. Once an initial understanding had been developed, a focus group was held with a number of village men (approximately 10) which covered a cross-section in age but homogeneous in caste. This session focused on land use types, and changes in land use and animal ownership between 1962 and 1994. On the basis of this information, questions were prepared and asked to village members, specifically to people who were understood to be knowledgeable in these matters by the

focus group, and consultants either expanded their understanding or checked the accuracy of the focus group's impressions. Once the basic outline of land use and change in land use and animal ownership was obtained in one village, this information was cross-checked with a second study village.

Midway through the period of fieldwork, and following initial discussions with people as described above, an informal scheduled household survey was prepared in order to obtain quantitative data on change in land use and animal ownership (see Appendix B). These interviews were utilized to collect quantitative data, but also served to stimulate 'conversations' on other topics and allowed the researcher to obtain qualitative information at the same time. It was often only possible to do one, and at the most two, interviews per day as the interviews could last anywhere from one half hour to two hours, depending on how willing a consultant was to talk about other topics. The length and intensity of the interviews made it possible for the translator to sustain only one or two long interviews per day. Seven scheduled caste households and twelve upper caste households were interviewed. A summary of the results of the interviews are provided in Appendix C.

A similar format was followed in determining the pastoral management over grazing lands. Interviews with shepherds occurred in a spontaneous manner, as shepherds returned for brief periods to the village from the summer pasture grounds. Initially, one shepherd was interviewed, along with two former shepherds, who provided the basic outline of the grazing cycle. These individuals were identified during the initial focus group session with village elders as knowledgeable about the activities of village pastoralists. The first interview utilized a rapid appraisal technique, drawing the seasonal migration of village pastoralists using acetate overlays and a map of the region. The route of the seasonal migration was established along with the dates of the movements. In follow-up interviews with shepherds from other pastoral families the details of their migration cycle was corroborated. Utilizing the pre-prepared migration cycle as the focus of interviews, it was possible to move quickly to more detailed questions about how they decided to move from one grazing area to another, the problems they experienced in pursuing a pastoral livelihood, and the conflicts they had with the Forest Department and

other local residents of the Kulu Valley. A similar process was undertaken in both Goshal and Chachoga. Over the period of ten weeks it was possible to interview the majority of shepherds in the study villages. By cross-checking with a number of key consultants, between two villages, and with government officials, it was possible to identify misunderstandings and differences in perception, as well as differences between villages.

The qualitative information collected during field research was stored and analyzed through the use of field notes. Information collected during informal interviews was analyzed and coded while in the field. Generally, each morning was spent conducting informal interviews, household surveys, or both. The analyzing and coding of field notes took as much time as the collection of the information through interviews. Taped interviews, rough notes, seasonal calendars, seasonal cycles, and lists of plants were rewritten into field notes on standard 8 1/2" x 11" sheets of paper. Rough notes were organized into field notes, each field note consisting of one topic, such as harvesting activities. On each note the name of the interviewee was recorded, date of interview, location of interview and a topic code. Topic codes were the same as those utilized for the Human Relations Area Files, the standard technique suggested by Bernard (1990).

Field notes were further broken down into descriptive and analytic notes. Descriptive notes were utilized to record what was observed while in the village as well as information directly provided by consultants during interviews. Analytic notes were written as the researcher began to understand components of the system, and were based upon compilation of field notes and through integrating theory from the literature. During the writing of analytic field notes, gaps in researcher understanding came to light and allowed the researcher to compile questions which still needed to be asked and to identify who would have the knowledge to answer the questions. Future interviews and questions were then recorded in a log book which allowed the researcher to plan interviews for the following day or contact people to schedule an interview. The researcher also kept a personal diary so that personal feelings during the day, or period of field research, could be analyzed to see if they influenced researcher interpretation of descriptive data obtained during the interviews. This method of collecting information, analyzing it and storing it

follows that presented by Agar (1980); Bernard (1990); Crane and Angrosino (1984); and Fetterman (1984).

iii Summary

The methods in the field drew upon an analytical framework provided by Oakerson (1986), Berkes and Folke (1994), field research techniques drawn from rapid appraisal methodology and ethnography. On the basis of these methodologies the research followed a loosely structured format. First, secondary sources of information from government or NGO offices were collected to obtain a basic understanding of the region, especially the use and management of natural resources. After reviewing the documents, key consultants within institutions were asked to clarify specific issues and questions. The next stage involved the translator, who was asked questions to determine if the village system was the same as that presented in the government documents. Following this, a focus group was held with village elders and pastoralists. The researcher's understanding of the topic was described to the focus group allowing the villagers an opportunity to correct the researcher and provide more detail on the topic. At the end of the focus group session the translator would ask who they considered particularly knowledgeable about the subject (key consultants).

Interviews with key consultants were then arranged to check the researcher's most recent understanding of the subject and to ask about new questions which had emerged as the researcher analyzed data from previous interviews. This process was repeated until the key consultant was satisfied with the researcher's understanding of the subject and the versions of a number of different key consultants were not contradictory. A final check was added into this study one year later when the senior investigators of the project met with government officials, translators and villagers during a workshop held in Manali in June of 1995. A number of errors were corrected and incorporated into this study. The process usually obtained information from at least five points of view: government; translator; focus group; key consultants; and, other researchers on the team. In addition, the information in Goshal was cross-checked with key consultants from Chachoga. By utilizing various sources and cross-checking with sources from different castes, villages

and government, the process of triangulation checked the accuracy of the researchers understanding.

The information obtained in the field stands on its own as the result of observation and interviews. However, interpretation of observation and results is a product of theoretical constructs utilized by the researcher in the field which both influenced the direction of the research and the analysis of the data. The next Chapter, Chapter 3, provides a detailed examination of the theory which frames the results presented in Chapters 4 and 5, and which was drawn upon while in the field and during the process of analyzing and 'writing up' the data.

Chapter 3

Review of Related Literature

3.1 The Political Economy of Common Property Resources

i Overview

The study of political economy can be used to broaden the field of inquiry for natural resources management as it moves beyond the concerns of classical economics and ecology to a consideration of how economics are intertwined with history, politics and statecraft. Roseberry, speaking generally about the use of political economy within the anthropological literature, says that anthropology places "...the social and cultural phenomena it investigates within an examination of circumstances associated with getting a living and the structures of power that shape and constrain activity" (Roseberry 1988:179). Within a broad framework of political economy three major literatures can be identified; public choice and the dilemmas of collective action, dependency and underdevelopment in the third world, and studies which draw the links between "...political processes and economic activity in a historically viewed world system of nation states" (Marcus and Fischer 1986:79).

The political economy literature which specifically deals with common property tends to focus on the public choice and collective action question, and the drawing of links between political processes, economic activity and the dismantling of commons systems in a historical perspective. Collective management theorists examine "...the empirical question of the conditions under which varying types and degrees of collective action are found..." or more specifically "...under what conditions will individuals formulate, and agree to abide by, a rule of restrained use of common pool resources" (Wade 1992:208). The historical perspective places the commons in a cultural and historical perspective by examining social relations which construct a commons system, the restructuring of social relations through the formation of a world capitalist system, and resistance by local peoples to the restructured social relations through the imposition of new property rights and management regimes.

This section of the literature review is divided into six sub-sections. The second sub-section (ii) reviews Hardin's 'tragedy of the commons' theory. This theory is critical to understanding natural resources management theory as it is the supra-structure of ideological thought upon which state management of natural resources has been built. The third sub-section (iii) examines the concept of property and property rights. An understanding of property as a socio-cultural phenomenon is key to moving beyond a narrow understanding of property as a relationship between people and resources to property as social relations between people as regards resources. The different ways of constructing social relations provide the many different possibilities for property systems beyond a western legal understanding of property. Natural resources management practice and theory also tends to see 'law' as the normative context for defining permissible actions by people as regards natural resources. Actions which contradict or challenge the 'law' are placed in an oppositional position of 'crime.' Natural resources management practice and theory thus operates under a dualistic ideological construction of opposing pairs, such as 'law' and 'crime,' whereas another possibility may be to place 'law' in opposition to 'custom.' The fourth sub-section (iv), then, presents the possibility that actions by local people which contradict state management of natural resources and 'law' might be explained by 'custom' rather than 'crime' or ignorance.

The fifth sub-section (v) defines common property utilizing the ideas presented in the first three sections, yet due to the complexity introduced by the concepts of property and custom, concludes by leaving the definition broad and largely undefined. The sixth sub-section (vi) provides a short summary of how user-groups are able to collectively manage common property resources. The last sub-section (vii) examines the broader historical context of common property. This final sub-section is important as it contextualizes state management of natural resources. Often the management of natural resources is presented as simply an empirical issue. The sub-section explores the possibility that natural resources management theory is largely a construction of colonial and emerging nation states acting to alienate local people from local resources in an effort to direct the resource rents to colonial and national elites. This section of the literature

provides the 'grounding' theory for research undertaken in the field and in the subsequent analysis of results.

ii Hardin's Tragedy of the Commons

The tragedy of the commons develops in this way. Picture a pasture open to all. It is to be expected that each herdsman will try to keep as many cattle as possible on the commons. Such an arrangement may work reasonably satisfactorily for centuries because tribal wars, poaching, and disease keep the numbers of both man and beast well below the carrying capacity of the land. Finally, however, comes the day of reckoning, that is, the day when the long desired goal of social stability becomes a reality. At this point, the inherent logic of the commons remorselessly generate tragedy.

As a rational being, each herdsman seeks to maximize his gain. Explicitly or implicitly, more or less consciously, he asks, "What is the utility *to me* of adding one more animal to my herd?" This utility has one negative and one positive component.

1) The positive component is a function of the increment of one animal. Since the herdsman receives all the proceeds from the sale of the additional animal, the positive utility is nearly +1.

2) The negative component is a function of the additional overgrazing created by one more animal. Since, however, the effects of overgrazing are shared by all herdsmen, the negative utility for any particular decision-making herdsman is only a fraction of -1.

Adding together the component partial utilities, the rational herdsman concludes that the only sensible course for him to pursue is to add another animal to his herd. And another; and another....But this is the conclusion reached by each and every rational herdsman sharing a commons...Therein is the tragedy. Each man is locked into a system that compels him to increase his herd without limit—in a world that is limited. Ruin is the destination toward which all men rush, each pursuing his own best interest in a society that believes in the freedom of the commons. Freedom in a commons brings ruin to all. (Hardin 1968:1244).

Hardin, in this passage, argues that the collective management of a commons is not possible because the individual marginal cost is less than the individual marginal benefit. The assumption he makes is that there are no rules, institutions or other means by which individual use of the commons can be restricted by the collective. Collective management theorists respond to this argument by pointing out the rules, institutions and knowledge which have allowed local collectives to manage common property. Putting Hardin's theory into a historical context reveals that Hardin's argument is one in a long procession of arguments made against the commons during the formation and expansion of a world

economy. As noted by Thompson:

It has been Professor Hardin's argument that since resources held in common are not owned and protected by anyone, there is an inexorable economic logic which dooms them to over-exploitation. The argument, in fact, is derived from the English propagandists of parliamentary enclosure, and from a specific Malthusian variant. Despite its commonsense air, what it overlooks is that the commoners themselves were not without commonsense. Over time and over space the users of commons have developed a rich variety of institutions and community sanctions which have effected restraints and stints upon use. If there were signs of ecological crises in some English forests in the eighteenth century, this was as much for political and legal reasons as for economic or demographic. (Thompson 1991:107).

Another criticism of Hardin's theory emerges from economics literature. Some economists criticize Hardin for not being able to distinguish between common property and open-access resources (Ciriacy-Wantrup and Bishop 1975; Stevenson 1991). In order to clarify the property analysis, some economists and collective management theorists now distinguish between three types of property; state(public) property (*res publica*), communal property (*res communalis*), and private property (*res privata*) while open-access is not considered to be property (Berkes 1989; Bromley 1992; Stevenson 1991). Although Hardin's theory is useful for analyzing open-access resources at a theoretical level, once resource becomes property the theory no longer holds explanatory power to describe resource use and management. Its continued use within resource management theory and policy does suggest, however, that it holds strong ideological power.

iii Property and Property Rights

Property is a key concept for natural resources management because it focuses attention on the social relations which structure the use of a resource and the distribution of benefits. Property is often utilized in a sense which defines the relationship of people to a thing (resource). However, property defines the social relationship between people as regards a thing (resource). Therefore, property is a socio-political phenomenon and not a biological or economic one and the difference between how resources are managed are thus cultural and socio-political questions. As described by Bromley the issue is that:

There is no such thing as a common property resource; there are only resources controlled and managed as common property; or as state property, or as private property....Property is a triadic social relation involving benefit streams, right holders, and duty bearers....It is for this reason that I urge us to consider the concept of property regimes....Regimes, after all, are human artifacts....(Bromley, 1992:4).

As a social construction, property contains a variable set of rights, duties and benefits which flow with a resource and are held by individuals (*res privata*), the state (*res publica*), or some form of collective which utilizes the resources (*res comunalis*) (Berkes 1989; Bromley 1992; Stevenson 1991; Schlager and Ostrom 1993). Schlager and Ostrom (1993) identify four rights which generally apply to property; the right to access and use of a resource, the right to manage a resource, the right to exclude others from using the resource, and the right to sell or lease the preceding rights. Whereas rights refer to the ability of a person to do something with a resource, duties refer to the correlate relationship whereby people will not do something in the face of someone holding a right (Stevenson 1991). If a person, state, or collective holds the right to cut a tree, the duty on a person, state, or collective which does not hold that right is to not cut the tree. The existence of rights and duties for a resource is what defines it as property. A more detailed description of property is provided by Stevenson:

Whereas rights are relationships between persons regarding use of a thing [resource], property rights are specifically relationships between persons regarding use of a thing—whether corporeal or incorporeal—. Various rights, duties, liberties, powers, immunities, and liabilities combine to define a person's property rights (ownership rights) in a thing and how another person is morally or legally required to act with regard to the thing. The existence and observance of these rights, duties, and other relationships distinguishes property from nonproperty, as well as one type of property from another. (Stevenson 1991:50)

By focusing on property and property rights it can be seen that the 'tragedy of the commons' theory outlined by Hardin only applies to a very few resources such as open seas fisheries (Berkes 1989). Most resources which are important to villages do have defined rights, duties and benefit streams. The difficulty with identifying property rights regimes in many cultures is that rights and duties associated with a resource are often very different from the set of property rights recognized by western legal definitions such as

private, state and common (Thompson 1991). The commons often exist in custom even they do not exist in law if other cultures define and practice different social relations over a resource. Property rights as defined within the western legal framework are only one possible set of rights which define resource use and management. Although a resource may be defined as state or private property it is also necessary to examine the role of custom in order to understand how a resource is being used and managed by local people.

iv Law and Custom

Property rights systems emerging from the culture of most state resource managers are often assumed to be the only systems defining rights to a resource. What resource managers fail to recognize is that most resources are associated with systems of customary rights, duties and benefit streams which predate western law. Often resources are managed simultaneously under both law and custom, especially over state land when the ability of the state to enforce the law is hampered (Berkes 1989). As noted by Schlager and Ostrom (1993), common property often contains both *de jure* and *de facto* property rights. *De jure* rights are defined by Schlager and Ostrom as those rights which "...may be enforced by a government whose officials explicitly grant such rights to resource users...[and]...are given lawful recognition by formal, legal instrumentalities" (Schlager and Ostrom 1993:19) *De facto* property rights:

...originate among resource users. In some situations resource users cooperate to define and enforce rights among themselves. Such rights are *de facto* as long as they are not recognized by government authorities. Users of a resource who have developed *de facto* rights act as if they have *de jure* rights by enforcing these rights among themselves. ... Within a single common-pool resource situation a conglomeration of *de jure* and *de facto* property rights may exist which overlap, complement, or even conflict with one another....field researchers have found *de facto* proprietor arrangements that are commonly understood, followed, and perceived as legitimate within the local community. (Schlager and Ostrom 1993:19)

The approach taken by Ostrom supports the idea of customary systems of property rights existing simultaneously and in relationship with systems of property rights in law. Another approach taken to examine the law and custom interface is that of Thompson (1991). Specifically talking about agrarian England in the 1600's Thompson says that:

At the interface between law and agrarian practice we find custom. Custom itself is the interface, since it may be considered both as praxis and as law. Custom's original lies in praxis; in a treatise on copyhold at the end of the seventeenth century we learn that 'customs are to be construed according to vulgar apprehension, because Customs grow generally, and are bred up and amongst the Laygents...there were 'two pillars' for customs -common usage and time out of mind [and] Custom is local, *lex loci*...'so custom lies upon the Land' and 'binds the land.' ... The land upon which custom lay might be a manor, a parish, a stretch of river, oyster beds in an estuary, a park, mountain grazing, or a larger administrative unity like a forest. At one end custom was sharply defined, enforceable at law, and (as at enclosure) was a property...In the middle custom was less exact: it depended on the continual renewal of oral traditions....(Thompson 1991:97-98).

Thompson brings to the study of common property, as does Neeson (1993), the idea that the commons emerged from custom, or the practices of local villages and how they defined their social relations within the English feudal system. The property rights and social relations which defined the commons through custom were deeply embedded within the rural culture of England and were only eradicated through an enormous effort on the part of the state (Campbell and Godoy 1992). Common property systems did not disappear until the Parliament of England passed The Enclosure Act, defined management actions taken by commoners as crimes, and utilized para-military force to keep the commoners off enclosed land (Thompson 1975). In areas where the strength of the state is not as strong, it has been found that the customary property rights and the social relations of the commons are still utilized to manage resources (Campbell and Godoy 1992). The failure to recognize a resource as being managed under an indigenous common property system often denotes a lack of attention to the customary management of such a resource, and not the existence of an open-access resource (Berkes 1989).

v Towards a definition of common property

The definition assumed by Hardin (1968) and which has spread throughout the natural resources management literature describes resources for which no rights, duties or benefit streams have been defined. This is an unsatisfactory definition as it defines open-access and not common property resources. Hardin made his error by assuming that the individual use of a commons exists outside of a framework of social relations within a

village or collective. An attempt to solve the definitional problem by economists and other collective management theorists is the use of a typology of property regimes (Berkes 1989; Bromley 1992). They identify four property regimes; open-access (*res nullus*), private (*res privata*), state (*res publica*) and common (*res communalis*). The regime of open-access is a special consideration of a resource for which no rights, duties or benefit streams have been established. This typology becomes less helpful when customary systems and western legal systems of property rights are simultaneously in use for a given resource. In addition, even in law state resources often contain a number of different property rights holders (Berkes 1989; Schlager and Ostrom 1993). As Behar, quoting Marc Bloch notes: "[t]he commons too, we often assume, is land over which the village community held exclusive property rights. But this was rarely the case, as Marc Bloc had noted long ago: 'It is far more useful to find the commons, like the rest of the village lands, subject to a complex tissue of rights claimed by a whole hierarchy of interested parties'" (Behar 1986:191). A typology of property rights regimes solves the need to classify a resource but may not be helpful in accurately describing how different groups of people perceive property rights and social relations over a resource. In order to understand how a resource is being managed it is necessary to be comfortable with ambiguity, and not be limited by rigid classification schemes. The attempt to define common property is confounded not by the divergent viewpoints in the literature but by the complexity of how resources are held within social contexts.

In recognition of the difficulty of classifying a resource according to one of the three ideal types (private, state and common), Berkes and Farvar suggests a broad definition for common property as resources for which "...exclusion is difficult and joint use involves subtractability" (Berkes and Farvar 1989:7). This definition recognizes that common property is a resource for which a variety of people hold a right or claim to the resource and that the use of a resource subtracts from the welfare of every other user. In the end, this definition recognizes the complexity of property and the difficulty of classifying resources according to property rights regimes defined by a western system of law.

vi Collective Management of Common Property

The collective or community management of common property theory has been developed by researchers from a variety of disciplines and forms an interdisciplinary area of research. It includes researchers from economic, ecological and social science perspectives (Berkes 1989; BOSTID 1986; Bromley 1992; Ostrom 1990). What ties these different threads together into a coherent pattern is the attempt to determine how collective management operates in order to limit individual use of common property for the collective good, avoiding the 'tragedy of the commons' outcome. Livingstone frames the question in the following manner, referring specifically to pastoralists: "...the question may still be asked, do pastoral societies have the institutions and organisations necessary to ensure good management of the natural environment, by achieving the socially optimal level of stocking?" (Livingstone 1984:6). The answer to this question is embedded in a number of different aspects of management such as local knowledge systems (Berkes 1989), rules and institutions (Ostrom 1990), and property rights (Bromley 1992).

Berkes and Folke (1994) pull together the threads of this area of study so that both ecological and social systems can be considered for the sustainable use of natural resources. They identify the important factors as, ecosystems, resource users and technology, and institutions (local knowledge and property rights). Through their work, Berkes and Folke bring together a diverse area of study and provide a framework to study the links between social systems and ecological sustainability. The outcome of this interdisciplinary research has been a rich literature on the structure of village resource management systems and their importance for sustainable use of natural resources.

vii The Commons in Historical Perspective

Studies on indigenous systems of common property management have shown that agricultural fields, village pastures and forests are bound together in an integrated system of local natural resources use (Campbell and Godoy 1992). The complexity of these systems has been described by Behar (1986), Netting (1981), and Wade (1988). These authors find that common property systems are based on more than the legal property rights over resources. Commons systems are often composed of a complex web of use-

rights which define both the rights and duties in regards to resource flows, not rights in land, and which are defined both temporally and spatially. The local collective, or village, includes institutions by which agreements over use-rights can be negotiated between different interests within the village and between villages. The commons acts as a mode of production which allows villagers to maintain control over the means of production and influence social relations of production (Netting 1981).

Once the physical commons is enclosed through privatization or state expropriation, the social system of the commons also breaks down. Without the commons the agricultural system of small landholdings becomes uneconomic and a process ensues in which small farmers lose their agricultural land and become rural labourers. It is for this reason that authors such as Guha (1989), Jodha (1992), Netting (1981), Shiva (1991), and Thompson (1991), stress the importance of access to the commons for the survival of the poor (Jodha 1992), smallholder (Netting 1993), or peasant (Thompson 1991). The major historical reason for the loss of commons systems has been the implementation of natural resources management policy through state bureaucracies and the redefinition of property rights in law. Natural resources management practice and theory has thus played a role in the struggle between the state and local commons systems within the context of the development of a world capitalist economy.

In an historical perspective the debate between 'tragedy of the commons' and collective management theorists takes place as part of the larger process of the continuing development of a world economy and the expansion of new capitalisms into common property systems. 'Tragedy of the commons' theorists provide theoretical justification for a continuing process of privatization and state expropriation (enclosure), while collective management theorists provide support for an alternative way to structure relations over natural resources (commons). The original English enclosure debate was framed as an argument which held that the non-private property rights of the commons was an impediment to progress and modernization, echoes of which can still be seen in the enclosure literature of today (Thompson 1991). Enclosure takes away the means of production (common resources) from local people, placing resources in the hands of the national elite (state property). The enclosure debate is thus about who obtains the benefits

of natural resources use. Common property systems, in their historical context form part of the larger struggle over different distributional outcomes derived from the use of natural resources. As noted by Thompson, the commons:

...expressed an *alternative notion of possession*, in the petty and particular rights and usages which were transmitted in custom as the *properties* of the poor. Common right, which was in lax terms coterminous with settlement, was *local* right, and hence was also a power to exclude strangers. Enclosure, in taking the commons away from the poor, made them strangers in their own land. (Thompson 1991:184, original emphasis).

The process of enclosure is not an isolated period of English history but a process which continues to occur worldwide. The process began in England but was then exported by most European countries during colonialism. The process in England began when “[p]arliament and law imposed capitalist definitions to exclusive property in land...” (Thompson 1991:163). Resources in England became defined by rights in land, preferably held by the individual or the crown (state). As England came into contact with different types of property in colonized countries it also established this clear definition of property rights on top of existing social relations of property as “[e]xclusive property in land was seen as the norm to which all other practices must be adjusted....” (Thompson 1991:164).

The aim of the British colonial governments was to establish a pattern of private and crown lands similar to the pattern which was emerging in England. The private right in land would allow for a progressive agricultural sector which would generate land revenues and at the same time create a landed gentry to control the commonfolk. The establishment of state ownership of resources not amenable to privatization, such as forests and grazing lands, would allow for the crown to determine rights to those resources and assign rights on the basis of the greatest benefit to be realized by the crown in resource rents or necessary goods. Those who benefited from this process in England and colonial states were the landed gentry, local or colonizers, as well as those who controlled commercial interests in forest products. As summed up by Thompson: “[t]he same era that saw the English peasant expropriated from his common lands saw the Bengal peasant made a parasite in his own country” (Thompson 1991:170 quoting E.J. Thompson).

The loss of commons systems has not, however, been instituted without a response by the villagers who lost their livelihoods. There is a rich literature describing the resistance of local peoples to the process of commons enclosure. This work largely draws on the early work of Thompson (1975) and has been extended by Scott (1976; 1985; 1986). The work of Thompson is important as it first raised the idea that not all resistance took the form of rebellion or revolution but was most often made up of small everyday expressions of protest. He described this resistance as "...more often sullen than vibrant. For every commoner 'riotously threatening to kill or be killed, that he wd raise 500 people who wd assist in the cutting down & destroying the Mounds and fences ... a dozen will be found throwing the gate off its hinges, uprooting some quicksets, or pulling down a notice of enclosure from the church porch' (Thompson 1991:115). In his work, Scott, calls these forms of resistance the 'everyday forms of resistance' which he defines as:

...the prosaic but constant struggle between the peasantry and those who seek to extract labour, food, taxes, rents, and interest from them. Most of the forms this struggle takes stop well short of collective outright defiance. Here I have in mind the *ordinary* weapons of relatively powerless groups: footdragging, dissimulation, false-compliance, pilfering, feigned ignorance, slander, arson, sabotage, and so forth...They require little or no coordination or planning; they often represent a form of individual self-help; and they typically avoid any direct symbolic confrontation with authority or with elite norms. To understand these commonplace forms of resistance is to understand what much of the peasantry does 'between revolts' to defend its interests as best it can. (Scott 1986:6).

The issues raised by Scott are also important considerations for the understanding of village management of common property resources. Some of the actions taken by villagers, which are taken as examples of poor management practices, may actually be explained as acts of resistance to a process of enclosure or as conflicts in how resources should be managed. When the commons is taken away through a process of privatization and expropriation, local villagers may respond in an attempt to maintain the previous structure of social relations over natural resources. Resistance is tied to the survival both of the commons and of local peoples. As Scott notes: "[t]he intrinsic nature and, in one sense, the 'beauty' of much peasant resistance is that it often confers immediate and concrete advantages while at the same time denying resources to the appropriating classes *and* that it requires little or no manifest organisation" (Scott 1986:26-27) The

distinguishing feature of resistance for Scott (1986) is that the act must be aimed at restructuring the benefits received from a resource, or to put it more in his terms, to deny the appropriating classes of the benefit of the resource. Stealing wood from a neighbour is not the same as burning a plantation of commercial tree species found on crown land. Actions taken by villagers do not only represent attempts to manage resources but are also indicative of attempts by villagers to resist changes in the distributional impacts of state management of natural resources which was established during the colonial period and continued by post-colonial nation states (Guha 1989).

Two recent works have begun to examine the conflict over common property resources, specifically forest resources, between the local and the state (Guha 1989; Peluso 1992). Both of these works are based on the ideas of Thompson (1975; 1991) and Scott (1976; 1985; 1986) and begin by tracing the pattern of enclosure in India (Guha 1989) and Indonesia (Peluso 1992) established during the process of colonialism. The pattern of enclosure is similar to that traced out by Thompson (1991).

Colonial administrators implemented settlement procedures which established land as private or state, usually agricultural land being settled as private while the forest lands became state. The basis of this distinction stems from British law which holds that land must be cultivated or 'improved' in order for there to be a private property right in land. In areas where people cultivated the land, the colonial administrators were required to settle a right in land to the person who had 'improved' the land. In areas where no improvement had been made it was possible to assign this land as state or crown land as there was no prior property right. This established the general pattern of land tenure in most colonial countries. All land which was not tilled by a plow, even if that land contained customary property rights, became state property. These rights were sometimes codified through a forest settlement, and sometimes ignored (Thompson 1991). The pattern of forest settlement was extremely variable and often depended on the settlement officer. However, agricultural peoples who maintained forest and pasture use within their commons system often received codified forest rights, whereas hunter and gatherers often received no forest rights at all (Thompson 1991). Administration of the forest was then turned over to colonial Forest Departments which controlled use, exclusion and

management of all forest resources (Guha 1989; Peluso 1992). The result is that most conflicts over forest resources are between the previous forest dwellers and the Forest Department.

The basic interest of most Forest Departments set up under colonialism was to maximize the resource rents from the forest which would be absorbed by the national coffers. The basic interest of forest dwellers is to utilize the products of the forest for their own survival (Peluso 1992). The underlying conflict between Forest Departments and forest dwellers is the capturing of the benefits of the forest resource. Actions by the local villagers are thus directed at renegotiating the distribution of resources between the local and the state (Peluso 1992). The point made by Peluso (1992) and Guha (1989) is that this conflict between the Forest Department and local forest dwellers is what underlies all management of the forest:

Much work has been done recently on violent and non-violent forms of peasant resistance; however, none of these studies has looked at the forms of peasant resistance as responses to specific forms of control over access to resources...Forest peasants resist forest land control by 'counter-appropriating species claimed by the state (or other enterprises) and by damaging mature species or sabotaging newly planted species; they resist labor control by strikes, slowdowns, or migration; and they resist ideological control by developing or maintaining cultures of resistance. (Peluso 1992:19).

viii Summary

The political economy literature which examines common property systems focuses mainly on the collective choice dilemma and the historical role of the development of a world economy and capitalism in alienating local people from their commons. Collective management theory examines the ability of local collectives to avoid the 'tragedy of the commons.' The ability to avoid the 'tragedy of the commons' is seen to be based on a number of different factors such as worldview, religion, rules, institutions, and traditional ecological knowledge (Berkes and Folke 1994). Historical studies trace political processes and economic interests which have structured social relations within capitalist modes of production over resources (labour, capital, land, forests, pastures, water), and attempts by local peoples to resist this restructuring. The literature points out that when a common property system is studied, two processes should be expected to

emerge. One is the ways in which villages will attempt to avoid the tragedy of the commons outcome, while the other is how villagers attempt to maintain the social relations of a commons. The customary form of common property management, if it still exists, will be found within a framework of law which has favoured enclosure, privatization and expropriation of local resources. Actions of villagers should be understood as both the attempt to manage resources according to customary systems and as attempts to resist or restructure state management of local resources. The next section, section 3.2, outlines how the state gained control of resources in India during the period of colonization.

3.2 State Hegemony over Natural Resources in India

i Property Rights in the Pre-Colonial Period

The discussion of land tenure or property rights in pre-colonial India is exceedingly complex and revolves around the debate of whether private, crown or communal land existed in the sense of English property rights (for example see Bagchi 1992). Furthermore most writing pertains to the Gangetic plains and south. Bandyopadhyay recognizes this complexity and suggests that land ownership was a mixture of many different types of tenure arrangements:

Ancient India depicts a complex set of land relations involving private ownership, royal administration and communal rule of villages. This multiple structure is a complete whole comprising three different layers. Land tenure in one layer or level would be completely different from the other. Hence quite often we find conflicting pictures from authors who stress on only one type of relationship. (Bandyopadhyay 1992:149).

Probably, as suggested by Thompson (1991), there was not property in the sense utilized by the English, but a dynamic combination of rights and duties within a feudal framework of social relations. It seems doubtful that there was one pre-colonial system of property rights, but rather, a mixture of types depending on ecological, political and cultural factors. However, as noted by Wolf there was an identifiable change from the structure of property rights under the Mughal empire to what became established by the British.

The Mughal polity had operated essentially in the tributary mode, allowing jagirdars and zamindars to pump surplus out of cultivators over whom they exercised either personal domination or domination by virtue of their office. The critical difference from the later English practice was that these rights were not, properly speaking, rights of property in land, but rather claims on people's labour and the products of that labour. In the Permanent Settlement that the English introduced in Bengal in 1793, however, the zamindars were turned into outright property owners, required to turn over to the British administration nine-tenths of the tribute received from their peasants, and retaining one-tenth for their personal use. The English thus created, at one stroke, a class of 3,000 Indian landlords who held the same property rights as English landlords, including the right to sell, mortgage, and inherit land. (Wolf 1982:247).

The tributary system under which resources were managed in the pre-colonial period was based on a four tier system (Wolf 1982). A local tribute area was comprised of a lineage or a number of different lineages. The *zamindar* was drawn from the dominant caste of the tribute area and would usually be the chief of the leading dominant caste lineage. The *zamindar* held patrimonial rights to receive tribute from a given area, from which some of the surplus was passed on to the *jagirdar*. The *jagirdars* were drawn from the Mughal elite and given *jagirs* (composed of a number of *zamindar* tribute areas) as a grant for service performed for a specified period of time, *jagirs* were not heritable. The *jagirdars* drew tribute from the *zamindars* and were required to pass on tribute to the *Oudh* or head of the Mughal state.

The boundaries of these categories were also fluid as the power of the central state ebbed and flowed. In times or areas of low strength by the central state, the *zamindars* would gain in power and influence in regards to their position with the state, or *jagirdars* would buy *zamindari* rights. When the strength of the state increased the state would try and bypass the *zamindars* and collect tribute directly from the lineages, create new tribute settlements by mixing parts of different lineages, or convert *zamindari* rights into *jagirs*. There appears to be some argument as to the rights held by the general populace to land under the *zamindar* system (Bagchi 1992) but it does seem that the English system of property rights and land tenure changed the system from rights in tribute (labour, produce) to one of a right in land.

ii Property Rights in the Colonial Period

The exact changes wrought by British colonial policy are not exactly clear. It is, however, agreed that one of the first steps of the British was to institute what is known as the Permanent settlement, or *zamindari*, which gave the right in land (ownership) to existing *zamindars* or overlords. In 1833, however, the British undertook a reform settlement "...which ousted revenue-collecting overlords and—in the belief that Indian villages were egalitarian republics of co-sharers in a corporate body—granted the land to corporate village groups or 'cultivating brotherhoods'" (Wolf 1982:248). The process of rights to land had changed from a tributary system where rights were not to land but to labour and produce, to an initial system under the British of a 'right in land' held by an overlord, and finally a system where farming households at the time of the reform settlement became *zamindars* or tax paying households on land that was now owned. Collectives which were previously groups of lineages in a tribute paying area became villages under the British system which held private property rights to agricultural land. Figure 2 demonstrates this idea.

In Goshal, older consultants can still remember the founding lineages, called a *toeli*, of their village and the lineage which was installed as the *zamindar*, called *Negi* under the British. The founding lineages' households were traditionally distributed within the village as shown for the village of Goshal in Figure 2. Each family is at present considered to be part of a *toeli* which is important for gaining access to certain resources and influencing who is chosen to serve on the village council (*mimbers*). A *mimber* is chosen from each area of the village which in the past corresponded to a *toeli*. At present *toelis* are no longer concentrated in geographic areas as the families outgrew the physical space of the village and were forced to begin new households on the edges of the main settlement. Although Wolf's (1982) description is based on the plains of India it holds relevance for the mountains and specifically the study area, although some exceptions should be noted.

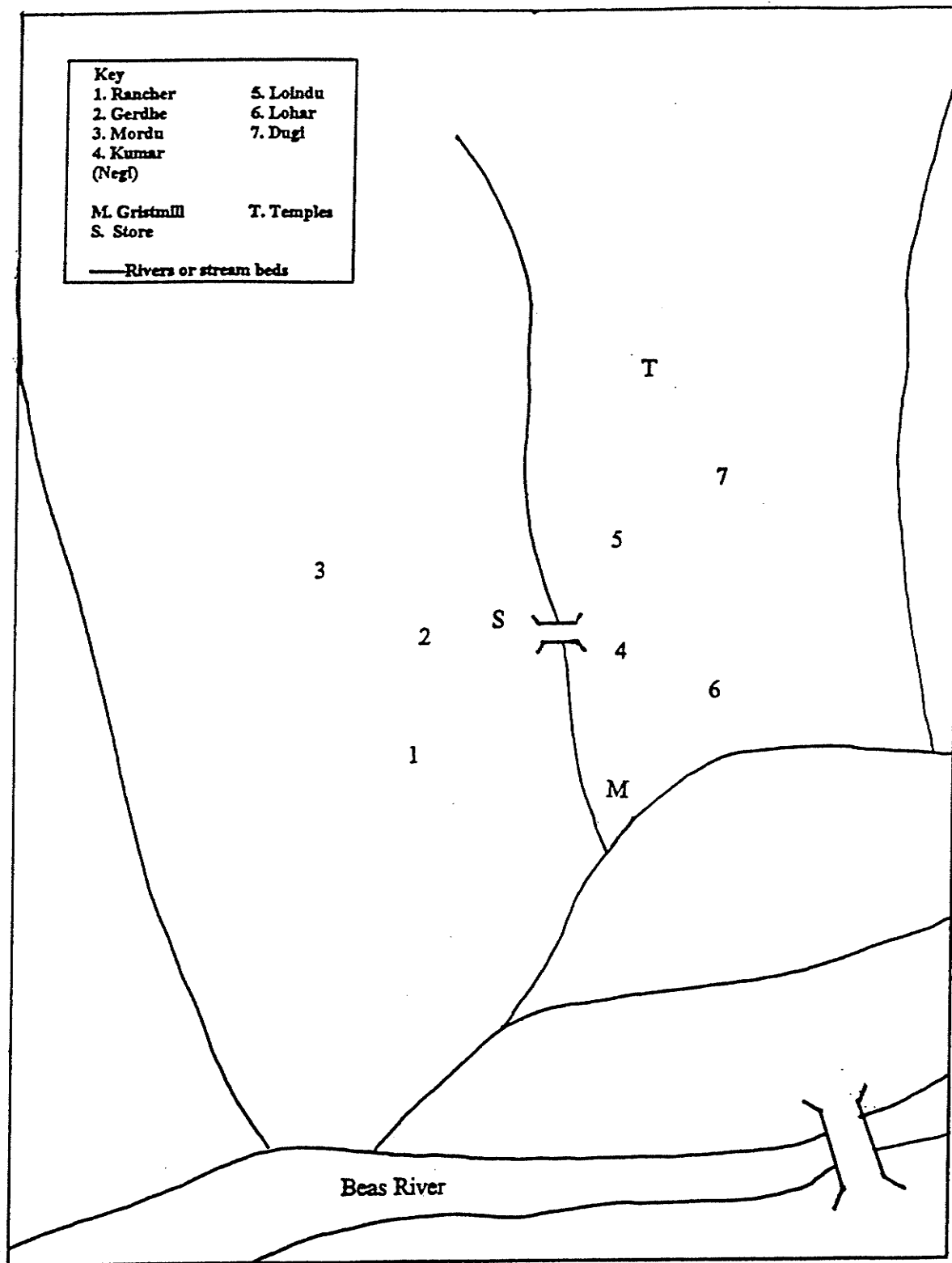


Figure 2. Founding lineages of Goshal.

Spatial organization of founding Goshal lineages' households within village site as identified by village elders. (Three lineages: Pishu; Sukihe; and, Ruher were not identified with a specific location within the village by the consultants.)

iii Variations in the Kulu Valley

One major consideration with regards to Kulu Valley land rights is that it never came under the control of the Mughal empire. It does, however, appear to have been ruled under a tributary mode of production and therefore represents a variation of the above description. The Kulu Raj can be considered parallel to the *jagirdar*, while the *zamindar* in the Kulu Valley was known as the *Negi*, a name which this lineage bears to this day. Much of the description is based on work by Hutchison and Vogel (1933) and, although not at all clear, what appears to have occurred is that the Kulu Raj became incorporated into the colonial state and given the position of *jagirdar*. Agricultural land was then distributed under the reform settlements to resident farmers of all the village lineages, except to lineages of the Scheduled castes. Although the exact situation of property rights and land tenure is not known before the colonial period, by the mid-1800's the right to agricultural land was vested in individual households and groups of lineages became identified as villages on the basis of residence. It was on the basis of these village revenue settlements that the rights to forest land were distributed by the British. The difference between pre and post British settlement is that previously fluid and dynamic boundaries became codified in law and fixed in both time and space.

iv Village rights to forests in Colonial India

The rights to forests were also to become spatially and temporally fixed in law by the British under the forest settlements. The rights to forests under the Raj principalities have not been clearly documented (Guha 1989, suggests that all pre-colonial discussion is largely based on conjecture). If it was a tributary system as supposed, each tribute area would have had held rights over land, water, pastures and forests in exchange for a tribute. Within the tribute area, which included forests and grazing grounds, the rights to certain areas would have been distributed among lineages. After the British took over the Kulu Valley in the early 1800's and undertook the revenue settlement, the forest was still not considered of high value, and assumed to belong to the revenue village within whose boundaries the forest fell. However, the expansion of the Indian railway, from 1349 km of

track in 1860 to 51, 658 km in 1910, resulted in forests taking on strategic and economic importance for the colonial government (Gadgil and Guha 1993). Due to the demand for timber and fuelwood, the government decided in 1864 that an Imperial forest service should be established to safeguard the forests from reckless destruction. This began a period of abridgment of village forest rights.

Gadgil and Guha discuss the context of a debate within the colonial government regarding the abridgment of forest rights in *This Fissured Land: An Ecological History of India* (Gadgil and Guha 1993). Although the formation of the Imperial forest service and The Indian Forest Act of 1865 guaranteed state access to the timber that was immediately required, it did not result in the abridgment of the existing village rights to the forest. There was, however, an implicit change in property rights as the forest and wastelands were now clearly considered to be vested in the crown and not the village. In spite of the forest act and imperial forest service, it was felt that the property rights over the forest remained ambiguous and did not allow the forest service to manage timber on a sustained yield basis. The overharvesting of sleepers for the railway system thus provided the impetus for restricting village rights to the forest. It was felt that village needs and colonial state needs could not be met from the same forest. This led to a draft of another forest bill in 1875 which was intended to remove the existing ambiguity about the absolute proprietary right of the state to the forests. It was this bill which led to the most vocal debate about the rights of villagers to forest resources. Gadgil and Guha recognize three positions in this debate:

The first, which we call *annexationist*, held out for nothing less than *total* state control over *all* forest areas. The second, which one may call *pragmatic*, argued in favour of state management of ecologically sensitive and strategically valuable forests, allowing other areas to remain under communal systems of management. The third position (a mirror image of the first) we call *populist*.... This completely rejected state intervention, holding out that tribals and peasants must exercise sovereign rights over woodland. (Gadgil and Guha 1993:124, original emphasis).

The forest settlements which occurred in India took place within a climate of debate in the colonial administration. This debate is important for three reasons. First, it establishes that revenue villages or groups of lineages held a prior claim to the forests

which the state ignored as it changed the property rights structure of the forests from lineage and group rights to state rights. It also shows that forests were never open-access, as rights were distributed among lineages within tribute areas, such as the Kulu principality, with corresponding sets of institutions to regulate access, use and management. As noted by a colonial participant in the debate:

There is scarcely a forest in the whole of the Presidency of Madras which is not within the limits of some village....All of them, without exception are subject to tribal or communal rights which have existed from time immemorial and which are as difficult to define as they are necessary to the rural population....Nor can it be said that these rights are susceptible of compensation, for in innumerable cases, the right to fuel manure and pasturage, will be as much a necessity of life to unborn generations as it is to the present....(In Madras) the forests are, and always have been, common property.... (Gadgil and Guha 1993:127).

Finally, since the position of different colonial administrators varied with regards to customary village forest rights, forest settlements were not consistent. As a result, some villages ended up with extensive rights while others ended up with no forest rights at all (ODA 1994).

In spite of the debate, the final position of the colonial administration was the annexionist position which resulted in the 1878 Indian Forest Act. The goal of this Act was the extreme curtailment of village forest rights. "Under the provisions of the 1878 act, each family of 'rightholders' was allowed a specific quantum of timber and fuel, while the sale or barter of forest produce was strictly prohibited. This exclusion from forest management was therefore, both physical--it denied or restricted access to forests and pasture--as well as *social*--it allowed 'rightholders' only a marginal and inflexible claim on the produce of the forests" (Gadgil and Guha 1993:135). The 1878 Indian Forest Act provided the means by which the colonial government restricted the influence of the local collective on the management of the forest and weakened village institutions which managed village commons.

The structure of forest management under The 1878 Indian Forest Act was based on the creation of four classes of forests; reserved, demarcated protected, undemarcated protected, and village. Reserved forests were those areas which exhibited the greatest potential for exploitation, close to towns and composed of valuable species of wood. The

intent of the reserved forest was to totally extinguish local rights to the forest, although in rare cases some limited rights were allowed. In reserved forests all use is prohibited except that which was explicitly permitted (Damodaran 1990). The demarcated protected forests were those areas controlled by the state but which recorded specific rights to be exercised by the village to which the forest corresponded. However, control was maintained "...by outlining detailed provisions for the reservation of particular tree species as and when they became commercially valuable, and for closing the forest whenever required to grazing and fuelwood collection" (Gadgil and Guha 1993:134). Protected forests reversed the onus on restriction as all rights are permitted except those specifically prohibited (Damodaran 1990). Undemarcated protected forests contained no restrictions and were those areas which contained tree growth, but were not considered valuable to the Forest Department at that time. This area often overlaps with what the revenue department has classed as 'wasteland;' that is, land not demarcated as forest but also not useful for agriculture. It is a type of land for which the property rights remain unclear and disputed between the Forest Department and the revenue department (ODA 1994). There was also a provision in the act for village forests to be created which would settle and record the rights of villages to these areas, although this option was rarely utilized. The outcome of forest settlements in India were based on this structure but carried out independently for each district.

v The 1886 Anderson settlement report

The 1886 Anderson settlement report set down the codified rights of villagers to the forest in law for what was to become the Kulu forest district. As opposed to other areas in India, it has been suggested that village rights in the Kulu district have been more generously defined. As noted by ODA (1994:4) "[c]ontrary to indications from other areas in India the process of settlement of rights in Kulu and Mandi did not result in the termination of local people's rights, but rather their acceptance and formalisation." The formalisation of village rights in Kulu may have been based on the divergent views found among colonial administrators and due to the physical nature of the Kulu Valley.

Anderson appears to have been more concerned about village rights than other

colonial administrators. He notes early in the settlement report that forest rights are important to the livelihoods of villagers: "The people are dependent on these rights for their very existence, and the extinction of the rights would be the most unjustifiable expropriation" (Anderson 1886:7). Furthermore, he expressed the view that rights were previously recognized during the revenue settlement and could not be further abridged as these rights "...were recorded at the Revenue Settlement and that settlement was accepted on the distinct understanding that the rights were to be respected" (Anderson 1886:3). Finally Anderson felt that the physical nature of the Kulu Valley provided less justification for the curtailment of village rights:

The mountainous nature of the country renders it impossible to set aside other forest land for the villages having rights in the valuable forests to be reserved. By reducing the areas demarcated near villages, it would certainly have been possible to form small reserved forests of deodar with few or no rights in them; but such forests would have been mere scattered patches difficult to manage, and comprising only a small proportion of the valuable forest in the country. I am strongly of opinion,--and in this Colonel Stenhouse and Mr. Smith, the local Forest Officers, agree with me,--that the policy of excluding valuable forests in order to acquire more extensive powers over the smaller area retained is quite unsuited to the circumstance of Kulu. Everything that is necessary to maintain, and even to improve, the forests can be accomplished by a system of rotation which implies extensive demarcation and continuation of rights. It is therefore necessary to admit rights in the demarcated areas, and for that purpose the rights must be recorded. (Anderson 1886:3).

In spite of Anderson's concern for village rights, he still had to operate under the framework of the 1878 Indian Forest Act. The compromise appears to have been the division of demarcated protected forests into first class protected and second class protected which had the aim of protecting valuable tree species while allowing for customary rights. First class forests tended to be nearer to villages and/or contained more valuable timber and had more restricted rights. The creation of a new category allowed the Forest Department to gain control over village forest lands and to curtail rights. However, by utilizing this mechanism Anderson at the same time was able to specify village rights to the forest. The result was a diminished reserved forest in the Kulu district and greater forest area with recorded village rights compared to other Indian forest districts (ODA 1994).

The outcome of the 1886 Anderson settlement report was to establish four classifications of forests in the Kulu Valley (ODA 1994:6):

1. Reserved Forests
2. Demarcated protected forest (Class I)
3. Demarcated protected forest (Class II)
4. Undemarcated protected forest (Class III)

The rights held by each village are based on the precolonial rights of the village to the forest subject to interpretation by the settlement officers. In general, the rights given by the settlement to villages can be classified as shown in Table 1. In addition to these rights, Anderson also veered from standard practice by recognizing three 'great rights' (ODA 1994). Village rights were to be established on the basis of current (1886) levels. However, Anderson identified three rights which he felt should be allowed to increase and called these 'the great rights.' They were the right to; manure, leaves (dry and green), the right to building timber, the right of grazing. The purpose of these rights was to ensure that as the population grew it would not be restricted by growth of the family.

The Anderson settlement report of 1886 appears to have been generous in its support of village rights to forest yet its overall effect was to weaken the ability of villages to manage the forests. Each village was assigned a forest area based on precolonial tributary areas. However, the forest rights were vested in the individual, and not the village. Forest rights were appended to a *Khasra* number which was the unit of land held by the head of a household under the settlement report. Forest rights became tied to land ownership. By law only those who held a *Khasra* could claim forest rights. As the Scheduled castes did not own land at this time, they were not guaranteed forest rights and anyone who lost their land also forfeited rights they previously held. The vesting of forest rights in the individual rather than the village made it difficult for the village to regulate the activities of their members (ODA 1994). In law, the village was given a portion of a state forest within which each land holder of the village could exercise recorded forest rights, although management, regulation and enforcement was to be carried out by the Forest Department. There was provision for the village to hire its own *rakha*, or village forest guard, for Class II and Class III land but this rarely practiced (ODA 1994). The result is a

**Table 1 . Villagers' use rights for Demarcated Protected Forests (DPF) in the Kulu Valley.
(Source: ODA 1994).**

Grazing

-to graze cattle (except buffaloes), sheep and goats at the times given in the record when any limit in time has been imposed

Trees

- for agricultural implements and domestic utensils
- for the construction and repair of dwelling-houses, cattle and grass sheds, and other agricultural buildings
- for the construction and repair of temples and of dwellings attached to temples
- for the ark of the deotas (village gods) and other such purposes
- for the bier and cremation of the dead
- for fuel and charcoal for smithy purposes
- for tanning and such like purposes

Forest Produce

- grass of all kinds for fodder, thatching, rope-making and other domestic and agricultural purposes
- flowers, ferns, plants for medicinal, domestic and agricultural purposes
- brushwood for fencing and other purposes
- branches of trees of certain kinds for fodder, manure, hedges, and for making charcoal and ropes at the times given in the record when any limit in time has been imposed
- fallen leaves for manure at the times given in the record when any time in limit has been imposed
- leaves and bark of certain trees and shrubs for tanning, incense, rope-making, medicinal and other such purposes
- splinters of stumps of trees of certain kinds for torches and the manufacture of oil
- bamboos for basket-making and other purposes
- stones, slates, earth, clay, limestone for building, plastering, for the manufacturing of earthen vessels, mill-stones and other purposes
- wild honey

state forest which is divided into village forest right areas to be managed by the state in terms of law or *de jure* property rights. The actions of villagers must be interpreted within this historical process of state appropriation of forest resources and management.

vi Summary

The establishment of state rights over forest management in the Kulu Valley occurred during the process of British colonization. Prior to colonization the Kulu Valley was ruled by a succession of tributary overlords and local people existed in a tributary relationship to these rulers. Local villages held the right to manage areas of the forest in exchange for a tributary payment to the ruler. After the British took over in the Kulu Valley they undertook both a revenue settlement which established a private right in land to people who cultivated the land, and a forest settlement which vested ownership in the crown but extended limited usufructuary rights to the local villages. The Forest Department was subsequently established by the British to manage the forest in the interests of the state. The Anderson settlement report for the Kulu Valley established four types of forests; reserved, demarcate protected forests, (classes I and II) and an undemarcated protected forest. The rights of local people varied on the basis of the forest classification and perceived rights on the part of the settlement officers of customary rights which predated forest settlement. The section illustrates that current forest management by the Forest Department was installed over an existing system of forest management by local villages. In addition, forest settlement reduced the access of local people to the forest and reduced the benefits they received from the forest by redirecting those benefits to the state. The next section, section 3.3, outlines the complexity of mountain livelihoods and how pastoral subsistence strategies were an integral part of mountain livelihood strategies.

3.3 Mountain Cultural Ecology and Pastoral Subsistence Strategies

i Mountain Cultural Ecology

The study of mountain environments has a long history within the discipline of geography. Knapp (1988) suggests that the focus of this study during the nineteenth

century was the discovery of the relationships between the physical, biological and climatic components of the environment. This led to the emergence of the subdiscipline of biogeography in which latitude was correlated to temperature, air pressure, and species of plants and animals. The ideas of biogeography were further developed in the twentieth century by examining the relationships between climate and landforms. This area of study came to be known as geomorphology. The ideas of geomorphology were applied by Carl Troll to the study of the interrelationships of climate, slope, soil, water, and life in mountain areas which led to the emergence of mountain geography and landscape ecology (Troll 1988).

One of the major findings of this work is that vegetation is organized into distinct vertical zones or belts which have specific biophysical characteristics. In lowland areas it had previously been recognized that climate, vegetation and landscape changed "...in a horizontal direction from the equator to the poles..." (Troll 1988:38). What Troll suggested was that a vertical dimension needed to be added to the analysis in recognition of the change from hot lowlands to perpetual snows due to a change in elevation, rather than latitude. This idea of vertical zonation, and the limits it imposed on agricultural activities, led to a natural extension away from strictly biophysical factors to an examination of land use and settlement in mountain regions (Knapp 1988).

The study of human-environment interactions in mountain regions began with the work of human geographers but has more recently become the domain of cultural ecologists who represent a diversity of disciplines. As noted by Knapp, cultural ecologists are represented in the fields of "...geography, anthropology (ecological anthropology), history (environmental history), biology, sociology (human ecology) and geology (economic geology)" (Knapp 1988:129). In spite of the diversity of disciplines, the study of human-environment interactions in mountain regions focuses on the limitation to human productive activity imposed by mountain environments.

The biophysical characteristics of mountain environments are considered to be fragile and life hazardous for humans who inhabit them (Guillet 1983; Forman 1988; Stevens 1993). In order to survive in mountain environments, humans must cope with "...climatic and geomorphic hazards, relative unpredictability, low primary productivity

and high environmental fragility..." (Stevens 1993:57). The biophysical constraints make it difficult to intensify agricultural productivity as they limit the return to labor and capital investment (Galaty and Johnson 1990). In spite of the biophysical constraints three or four vegetative zones may be found in a single valley or on a single slope (Brush 1976). As a human population cannot survive access to only one these zones, much of the work in cultural ecology has been the study of how human groups obtain access to different zones within mountain regions (Brush 1976; Steven 1993).

The verticality concept has been the predominate theory to explain the ability of humans to survive in mountain environments. Although the theory is first credited to Murra (1972), the origins of this theory can be found in the ideas emerging from mountain landscape ecology and the recognition of different vertical zones with the ability to produce different agricultural products, first proposed by Troll (1966; 1988). Murra's work was based on an examination of how the Inca empire was able to support itself given that it was located on a highland plateau which produced relatively few products. What Murra found was that the Inca empire not only controlled products from the highland plateau but also from other vertical vegetative zones. He called this the 'vertical archipelago' strategy whereby a group would obtain access to the products of different vegetative zones through the direct exploitation of those zones, including sending colonists to produce crops in those zones. Since Murra (1972), the 'verticality concept' has been expanded by other authors.

After Murra the next major work on the verticality concept was done by Rhoades and Thompson (1975). Rhoades and Thompson identified two strategies which they termed a generalized strategy and a specialized strategy. The generalized strategy is pursued by "... a single population, which, through agro-pastoral transhumance, directly exploits a series of microniches or ecozones at several altitudinal levels" (Rhoades and Thompson 1975:549). A specialized strategy is pursued by groups who are "locked" into one environmental zone and produce the products of that zone. In order to obtain products from other zones it is necessary to establish complex trade networks with other specialized groups or have reciprocal exchange relations with a group that focuses on other products. Rhoades and Thompson extended the 'verticality concept' to include

cultural strategies based on trade and reciprocal relations in addition to the strategies of conquest and control.

The next author to develop the 'verticality concept' was Brush (1976; 1987) who further expanded and defined different types of vertical strategies. Brush (1987:273) suggests that the concept of "...verticality described the use of multiple altitude belts and the social means whereby access to different altitude zones was guaranteed to individual households and communities." Brush (1987) points out that when Murra (1972) first presented the idea of 'verticality' he was specifically describing the strategy pursued by pre-conquest Andean empires.

Although the verticality concept was first applied to the study of pre-conquest Andean societies it has since been applied to other colonial and contemporary mountain societies (Murra 1985). Brush (1987) pulls together these different studies into a more general description of verticality. As he sees it there are two ways in which verticality has acted to structure Andean culture and behaviour. The first is that vertical zonation acts as "...a template for the division of productive activity into different zones" and creates "...opportunities for a diverse system of crop and animal production while constraining the area that can be devoted to any one activity" (Brush 1987:273). The second point made by Brush draws upon the idea of production zones first proposed by Mayer (1985).

Mayer proposed that production zones should be superimposed upon the natural variation in mountain environments to emphasize that production systems are made by people, and not vice versa. This was an attempt to deal with criticism that much of the vertical zone concept, which emerged from landscape ecology and cultural ecology, was a form of environmental determinism (Hewitt 1988). The verticality concept is presently utilized to study how people, through culture, take advantage of the opportunities presented through vertical diversity and are influenced by mountain hazards, while emphasizing that people are not shaped by these factors (Brush 1987).

The study of 'verticality' and mountain production zones has resulted in three general characteristics which are utilized to characterize mountain subsistence systems. The first is that mountain systems are characterized by diversity across regional subsistence system and within specific components. For example, within one production

system there are a number of crops grown at different elevations, and within each crop type there is a number of different varieties. The second is that the agroecosystem is organized into specific production zones with different inventories of crops and animals, different levels of land use intensity, and different types of control. Finally, various land tenure and land-use practices have developed which combine community and households as important actors in the management of the agroecosystem (Brush 1987). Since each zone is not able to produce all the products needed by a group of people they must then gain access to these different zones through socio-political organizations and/or trade.

Brush (1977) has refined the classification of the subsistence strategies of mountain peoples drawing upon the earlier typologies derived by Murra (1972) and Rhoades and Thompson (1975). Brush outlines three types of subsistence strategies, namely, compressed, extended, and archipelago. The compressed strategy is similar to the generalized strategy of Rhoades and Thompson (1975), whereby the strategy of a group of people is based upon the direct control of different altitudinal zones. The extended strategy is parallel to the specialized strategy of Rhoades and Thompson (1975) as a group will specialize in producing certain products through agriculture or pastoralism within one production zone and rely on trade to obtain products from other zones. The third type is that identified by Murra as the 'archipelago vertical' (Murra 1972), which Brush terms the archipelago strategy (Brush 1987). This strategy is an extension of the compressed strategy as a group will directly exploit several different zones although these zones may be at a great distance from the 'home' zone, and controlled through the establishment of colonies within those zones.

Research carried out within the field of cultural ecology has emphasized that there can be no one mountain subsistence strategy defined by the environmental characteristics of mountains. Although three general strategies can be identified, these strategies have different characteristics when examined in comparative perspectives across many mountain cultures. In spite of mountain peoples sharing a similar environment, they face different socio-political and socio-economic realities which influence how they can gain access to different production zones, expressing their own cultural preferences or constructions of how access to those zones should be structured. However, while recognizing that great

diversity exists within mountain subsistence strategies, it is possible to note a set of general characteristics:

A set of general characteristics has often been noted (based more on Alpine and Andean examples than on Himalayan) including the practice of mixed mountain agriculture (with grain varieties related to altitude and with root crops increasingly important at high altitudes), agropastoral transhumance, scattered (and often multialtitudinal) land holdings, systems of land tenure and resource-use decision making that combine communal management of common-property pasture and forest resources (and sometimes also community influence in crop-production decisions) with private family land and livestock ownership, and economies that combine subsistence-orientated agropastoralism with other economic ventures such as trade with other regions having different environmental conditions and natural resources. (Stevens 1993:59).

ii Pastoral Subsistence Strategies

Although the verticality concept has largely been developed through the studies of the Andes mountain range, a number of authors have tried to extend this analysis to other mountain ranges such as the Alps and the Himalayas. The earliest attempt to extend this analysis was by Rhoades and Thompson (1975) who compared the Andes to the Alps and the Himalayas. Although the verticality concept has not been as extensively developed for the Himalayas, the work of Barth (1956) predated the work of the Andeanists paralleling the ideas they have developed. Barth (1956) was one of the first authors to examine the ecological relationships between different groups within mountain environments. The basis of his analysis of ethnic groups in Swat, Pakistan was the concept of different vertical ecological zones which an ethnic group would attempt to occupy and control. One of his observations was that a group would try to exert direct control on as many ecological zones as possible. The zone of primary interest was the fertile valley bottom which provided the best agricultural production, and thus the best potential for a secure livelihood. The secondary area of importance were the grazing areas found in the high forest and alpine pastures. However, due to the distance of these areas from the main settlement, they were more difficult to control than the agricultural areas in the valley bottoms. If the ethnic group was not able to control both the agricultural areas and the grazing grounds, they would allow another ethnic group to utilize the grazing grounds in exchange for a tribute payment.

In Swat, Pakistan, Barth (1956) found that in areas with a steep environmental gradient, with many production zones within a small lateral area, dominant groups would utilize both agricultural and pastoral strategies. Where the environmental gradient was not steep, and grazing grounds found at a great distance from the main settlement, he found that agreements were made with other groups. One example provided by Barth describes the agreement made between the dominant ethnic group who practiced agriculture and Gujjars, who are nomadic water buffalo herders (Barth 1956). Gujjars were given rights to utilize distant grazing grounds in exchange for a tribute payment. In this fashion, the dominant group maintained control over, and access to, the products of different ecological zones. As Barth's early work predated the work in the Andes, he did not explicitly identify this as a 'verticality concept.' However, he did outline a similar concept for the Himalayas, describing the social organization and cultural strategies utilized to obtain products from a number of vertical production zones.

As noted by Barth (1956) and the Andean scholars who developed the idea of the verticality concept, an important component of mountain livelihood systems is the utilization of the high alpine meadows and tundra. In mountain regions it is difficult to expand agricultural production due to environmental constraints, however, it is possible to increase overall productivity through the conversion of non-edible vegetative products (grass) to edible products (milk, meat) through the raising of livestock (Galaty and Johnson 1990). As mountain agriculture is also risky, "...combining agriculture with pastoralism provides a broader subsistence base than either strategy pursued alone, thus compensating for possible failure in either" (Bishop 1989). The gaining of access to the products of the alpine pastures (meat, milk, wool) can be pursued utilizing either the compressed, extended or archipelago strategy. As such, a group may pursue any of the following strategies; control access to both agricultural land and alpine pasture found near main settlements, specialize in agriculture and trade with pastoralists, send out pastoralists to utilize distant pastures, or become involved in a combination of these strategies.

In order for a household or a village to pursue herding, they must have "...zootechnical expertise, access to pastures, access to livestock appropriate to available pasturage, and trade or market relationships for sale and barter of livestock products"

(Bishop 1989). Not every household or village, however, will possess the full complement of these factors; that is, not every household in a village will be able to pursue a pastoral livelihood, nor will every village in a region be able to pursue the compressed or archipelago subsistence strategy. However, in the Western Himalayas, Nepal and the Kharakorum, it has been found that villages practice a form of archipelago subsistence strategy with a pastoral component (Phillimore 1989). Although this is a form of the archipelago strategy it has been termed transhumant agropastoralism (Bishop 1989), or mixed agropastoralism (Stevens 1993), as it combines agricultural, wage labour and pastoralism within one village unit. As described by Stevens:

A group may, for example, tend to practice mixed agropastoralism, with virtually all households raising both crops and the livestock that furnishes manure to their fields. But the agropastoral strategies of different types of households may differ fundamentally. Some families may keep large herds for the purpose of selling dairy products, meat, and hides or wool and entrust them to herding specialists for transhumant shifts of pastures that cover considerable distances and reach areas remote from the main village. Other families may keep a single cow or a couple of goats which they care for themselves, live all year in the village, and let the livestock graze in the local environs and feed them fodder from nearby forests and fields. (Stevens 1993:61).

The mixed agropastoral strategy combines a number of subsistence strategies utilized by different households. Individual households will focus on either agriculture, wage labour or pastoralism but each household will also keep some animals and will produce some crops for home consumption (Bishop 1989; Stevens 1993). Therefore all households will contain a pastoral component, an agricultural component and most likely a wage labour component, as will the village as a whole. How then are distinctions to be made between those who are pastoralists and those who are agriculturists within a village practicing pastoral and agricultural livelihoods?

The distinction between pastoralist and agriculturist becomes a contentious one as shown by numerous debates within anthropology attempting to define pastoral peoples (see for example Chang and Koster 1994; L'Equipe Ecologie et Anthropologie des Societes Pastorales 1976; Galaty and Salzman 1981). Although interesting and important in its own right, this debate is not directly pertinent to this study. Other anthropologists

have noted that by utilizing a process of self identification, based on the ideas of Barth for ethnic groups (Barth 1969), it is possible to avoid the complications which arise when trying to define a group as pastoralists. Chang and Koster offer the following definition of pastoral peoples which will be adhered to in this study:

...the question of how pastoralism is to be defined. Pastoral studies in anthropology have long been plagued by heated debates over this definition. The result of these academic disagreements has been the creation of endless typological schemes describing nomadism, semisedentary pastoralism, and settled agropastoralism. We employ a very broad definition of pastoralists as 'those who keep herd animals and who define themselves and are defined by others as pastoralists'. (Chang and Koster 1994:8).

In the Western Himalayas, from the Kharakoum to Himachal Pradesh and into Nepal, it has been found that the dominant strategy is a mixed agropastoral strategy (Stevens 1993). Likewise the dominant form of subsistence economy of Pahari peoples of Western Himachal Pradesh has been the mixed agropastoral strategy. Moving east, however, into eastern Himachal Pradesh, Garhwal and Kumaon, Pahari peoples no longer practice transhumance mixed with settled agriculture, but focus on agriculture with the rearing of a limited number of domestic livestock (Phillimore 1989). The reason for this difference remains unknown as comparative studies have not been undertaken to examine the different subsistence strategies utilized by Pahari peoples (Phillimore 1989). The work of Berreman in the lower Himalayas describes a very different Pahari subsistence economy than that followed by the Pahari peoples of Western Himachal Pradesh and Nepal (Berreman 1963). Much of the pastoral research has focused on Africa, the Andes and the Middle East, leaving the details of the pastoral component of the mixed agropastoral strategy for Western Himachal Pradesh largely unstudied (Phillimore 1989).

Although the broad subsistence strategy of the Western Himalayas and Western Himachal Pradesh is a mixed agropastoral strategy, there are a number of pastoral groups which stand out. The most visible pastoral ethnic groups of Western Himachal Pradesh, and of the Western Himalayas in general, are the water buffalo herders (*Gujjars*) and the small livestock--goats and sheep--herders (*Gaddis*) (Phillimore 1989). The Gaddis are generally the best known of the pastoral groups of the Western Himalayas due to the work

of Phillimore (1984; 1989), and the popular writing of Noble (1987). Another group which has also appeared in the literature has been the Bakrwal of Jammu and Kashmir through the work of Casimir and Rao (1985). The transhumant activity of mixed agropastoral villages of the Western Himalaya remains largely unexplored within both the academic and popular literature, although Phillimore (1989) recognizes that the subsistence strategy of Pahari villages of Mandi and Kulu districts incorporate a transhumance component similar to the Gaddis.

The primary distinction between Gujjars/Gaddis and village pastoralists is that Gujjars and Gaddis are considered to be nomadic or semi-nomadic pastoralists whereas village pastoralists follow a transhumant pastoral strategy. The distinguishing feature of nomadism is that "...livestock is herded by a whole social group (e.g., a family) as owners on their permanent and periodic movement from range to range. Nomads live all year round in mobile tents, yurts, or huts, and rarely in permanent settlements" (Rinschede 1987:97). Semi-nomadism, a transitional stage, "...combines the seasonal movement of livestock with seasonal cultivation. On their seasonal migrations--largely with small livestock--the social group lives in mobile camps but also in permanent settlements" (Rinschede 1987:97). Gujjars and Gaddis were both nomadic people as the herding unit was the entire family (men, women and children), but are now considered to be semi-nomadic as they have obtained permanent settlements through national sedentarization programmes. Village pastoralists are distinguished from the Gujjars and Gaddis as they practice a transhumant pastoral strategy. Transhumance is a strategy "...in which the livestock is generally accompanied by hired men but also by owners and their relatives, but rarely by a whole family, on a long migration or transit between two seasonal ranges" (Rinschede 1987). The distinguishing feature between transhumance and nomadism is the composition of the herding unit. Transhumance utilizes a herding unit composed of hired shepherds or the men of a family, whereas the nomadic herding unit is composed of an entire family. Another way to distinguish between different types of pastoral activities is to focus less on the social organization of the activity, and focus more on the actual grazing strategy.

Stevens attempts to distinguish between different types of grazing activities occurring in the Himalayas by looking at the different grazing strategies of households within a region (Stevens 1993). The framework developed by Stevens is shown in Figure 3, and focuses on the movement of herding activity from the main settlement. This framework is useful for distinguishing pastoral activities at the household level. Agricultural and wage labour households in Pahari villages mostly focus on two grazing strategies as identified by Stevens ; village vicinity and upper-lower slope herding (Stevens 1993).

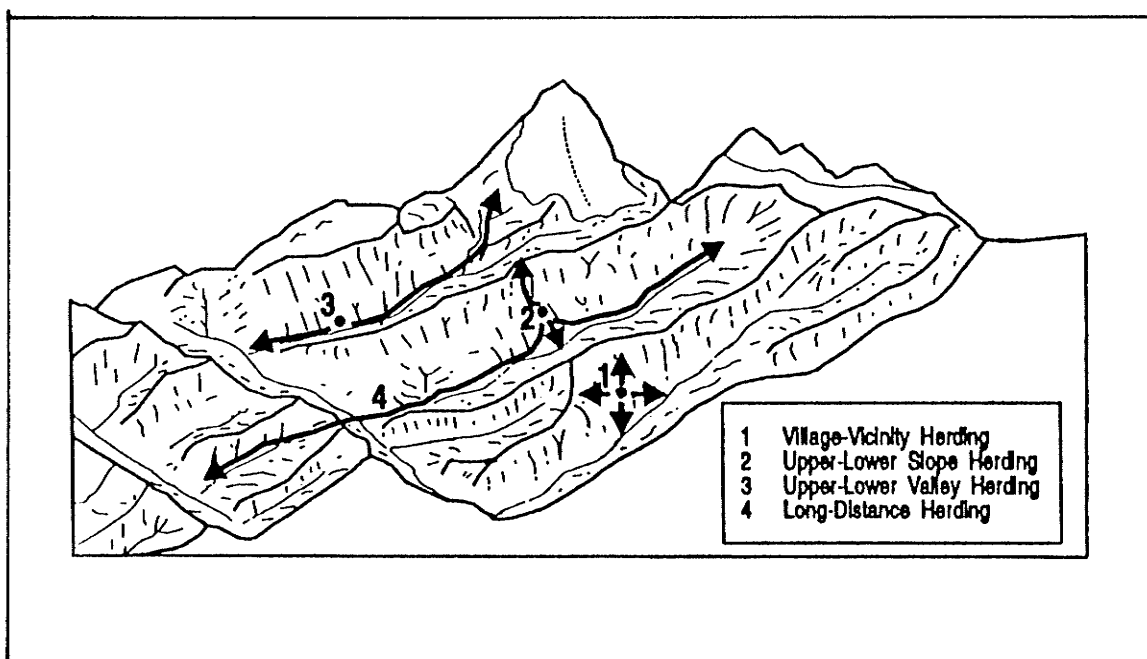


Figure 3. Grazing strategies of Himalayan, mixed agropastoral villages.
(Adapted from Stevens 1993)

Village vicinity grazing depends upon the pasture which surrounds a village and is utilized for dairy or draft animals that are kept within the household. The feed for these animals is supplemented by cutting and storing hay for winter and by utilizing upper-lower slope grazing. Upper-lower slope grazing is based upon the exploitation of different production zones found in mountain environments, but which are close to the main settlement. At the household level, the subsistence strategy of agriculturists and wage

labourers could be considered a generalized strategy as they make use of different ecozones controlled by the village. Agriculturists focus on agriculture, while wage labourers focus on wage work, yet both utilizing alpine pastures and high forest meadows to supplement the feed for their draft animals and/or non-producing dairy cows (dry cows, heifers). In summer months when the animals are not needed, they are taken to high forest pastures and alpine meadows and tundra to graze. In the winter, and when the animals are needed in the village at periods during the summer, animals are stabled in the household, fed cut grass, stored hay and grazed on village pastures. Pastoralists would also utilize village vicinity and upper-lower slope grazing strategies for dairy and draft animals. However, the focus of their activity is long-distance or upper-lower valley herding.

Participation in long-distance herding and upper-lower valley herding are what distinguish pastoral households from agricultural and wage labour households in the Himalayan region. Long-distance herding can be undertaken by either nomadic, semi-nomadic or transhumant pastoralists. Whereas the distinguishing feature between nomadism, semi-nomadism and transhumance is on the social organization of the activity, grazing strategies focuses on the use of the grazing resources. Both Gaddis and village pastoralists participate in long-distance herding, making use of seasonal movements and crossing of mountain ranges to utilize high alpine pastures in the summer and lower forest pastures in the winter. Gujjars are distinguished in this case from Gaddis and village pastoralists, as they practice upper-lower valley herding which does not cross a major mountain range, but is located within one mountain valley. In both cases, pastoralists establish camps in summer grazing grounds while some may also establish camps in winter grazing grounds, depending on the location of the main settlement. Pastoral households are distinguished from agricultural and wage labour households as they focus their labour and time on the pastoral activity and utilize a larger range of grazing areas.

iii Summary

The study of mountain environments led to an early recognition that vegetative and productive zones were established on a vertical rather than a latitudinal basis. As the study of human-environment interactions developed, it was noted that it was necessary to

obtain the products of more than one production zone in order to survive. This led to the inquiry of how human groups organized their productive activities to obtain needed products from a number of production zones. As well a number of different strategies were noted suggesting that it was either necessary to control a number of different zones directly, establish reciprocal relations with occupants of different zones, or participate in trade in order to obtain the necessary products for survival. It has also been observed that many factors influence how different societies structure their social organization in order to accomplish this end, and that it was not simply determined by the environmental factors of mountain regions.

One of the production zones, high alpine pastures, is utilized by groups who focus on pastoral activities. Pastoral activities are based upon many different forms of social organization. In some areas there are groups who specialize only in the production of pastoral products (milk, meat, wool) and trade with groups specialized in the production of agricultural goods. These groups are often those considered to be nomadic as they have no permanent settlement, and the whole family moves on a seasonal migration from low, winter pastures to high, summer pastures. They are also dependent on relationships with agricultural groups for access to the winter pastures in the lower, predominately agricultural areas. Although nomadic peoples focus on livestock production they may also produce agricultural goods in winter and summer grazing areas.

Another strategy is the direct control of the grazing areas by the main settlement through herding households which are socially connected to agricultural and wage labour households. This strategy is widely practiced in the Western Himalayas, and is known as a mixed-agropastoral strategy. The pastoral component of this strategy is focused on transhumance. Pastoralists are part of a settled village and their families maintain residence in that village undertaking some agriculture activities to supplement pastoral activities. Only men, or hired shepherds, are sent with the herds as they utilize the high alpine summer pastures and the low winter pastures. This is similar to the generalized, or archipelago strategy, as shepherd 'colonists' are sent out to control the grazing resources located at a large distance from the main settlement. The village, or ethnic group, as a whole expands its productive activity as it controls grazing resources in addition to its

agricultural resources. As agriculturalists cannot contribute their time and labour to both agricultural and pastoral activities, specialization occurs within the village as some households focus on agriculture while others focus on livestock raising. In addition, other households focus on wage labour or trade, which further increases village access to resources. In addition to controlling distant grazing resources, the village also controls forest meadows and alpine pastures located on the valley slope where the village is located. These grazing areas are utilized by both pastoralists and the other village households for animals kept in the village. The different actors, agriculturalists, pastoralists and wage labourers, maintain residency within one village and are part of a single ethnic group linked by reciprocal exchange and other social relations, allowing them to obtain access to different production zones and activities.

3.4 *Summary of the Literature Review*

The literature reviewed in this Chapter focuses on three broad areas: political economy of common property resources; state hegemony over natural resources in India; and mountain cultural ecology and pastoral subsistence strategies. The first section examined the many issues which surround village management of common property resources. It was found that the underlying debate within natural resources management literature emanates from the 'tragedy of the commons' theory first proposed by Hardin (1968). Recently, a substantive body of literature has been produced by 'collective management' theorists who refute Hardin on the basis of economic and biological arguments. It is also argued that Hardin can be placed within a broader political economy analysis of the commons. In this analysis, it is a moot point whether a private or a collective right to resources leads to sustainable use of resources. The underlying conflict identified within this analysis is that different resource management systems, such as the commons systems, come into conflict with the capitalist system through colonial expansion. Commons systems are seen as an impediment to capital accumulation which favours private and state systems of natural resources management. As the state appropriates local resources, conflict ensues between state imposed resource law and customary rights and resource management systems. The second section examined how

this process occurred in India. State control over resources was established in India through forest settlement undertaken by the British colonial government in the late 1800's. Whereas revenue settlements established a private right in land for agricultural land, forest settlements established a state right in land for all land not settled under the revenue settlement.

The basis of mountain livelihoods, the focus of the third section, is predicated upon the ability to gain access to the products of multiple vertical production zones. Complex systems of social organization allow mountain cultures to obtain access to products needed for survival. One such production zone depends upon the use of animals to convert alpine grasses into usable products such as milk, meat and wool. However, due to severe winters, pastoralists also have to negotiate access to winter grazing grounds. Many different pastoral strategies thus emerge, even in a small area such as Himachal Pradesh. Some pastoral groups focus mainly on livestock production, obtaining agricultural products through trade or social relations with agricultural groups. These groups at present are the nomadic Gaddis and Gujjars. Other ethnic groups contain agricultural, pastoral and wage labourers. They focus on using both grazing near the village, and sending pastoralists to distant summer and winter grazing grounds. In either case, the productive possibilities of the mountain region are increased by following agriculture, livestock raising, wage labour and trade.

It needs to be emphasized that change is a constant process among these cultural groups and pastoral peoples are not immutably locked in pastoral livelihoods. This is evident in the changes occurring among Gaddi and Gujjar groups as they become settled. Likewise, a pastoral household today may be agriculturally based tomorrow, and vice versa, or a family may have both agricultural land and livestock. One brother may chose agriculture while the other may chose to become a herder. However, a group of people does not adopt a pastoral livelihood overnight. It is necessary to have access to livestock, access to grazing areas (permits), technical knowledge about how to manage a herd, knowledge about migration routes, and negotiating skills to deal with government officials and other villages. It is the possession of knowledge, institutions, social organization and

a religious worldview which allows a group to sustainably pursue a pastoral livelihood (Rai and Thapa 1993).

The next two Chapters, Chapters 4 and 5, present the results of fieldwork undertaken in the Kulu Valley. Chapter 4 presents emic categorizations of land-use types in the study villages, and the interplay between law and custom. This provides a general overview of the state law framework over natural resources, and how local villagers reformulate areas of natural resources use on the basis of customary social relations. In addition, Chapter 4 looks at two village institutions which play a role in managing village resources. Chapter 5 specifically looks at the use of one land-use type, the grazing resource, and how one user-group, village pastoralists manage this resource. Chapter 5 provides evidence of a complex system of commons management by village pastoralists. It also examines how social relations of the commons can be changed by the establishment of a commercial economy.



Plate 1. Example of land use patterns of Goshal. Orchard, irrigated agricultural land, non-irrigated agricultural land, village-vicinity grazing, *kuth* and *fath* land types all occur within land seen in this photo.



Plate 2. Example of irrigated agricultural land being converted to orchard.

Chapter 4

Land Use and Property Rights in the Kulu Valley: Village Perspectives

4.1 *Types of Land Use and Property Rights*

i Overview

Table 2 provides an overview of the types of land use found in the study villages and the property rights held by villages in law (*de jure*) and custom (*de facto*). The division of land use into categories in Table 2 is an arbitrary reduction in order to clarify the property rights analysis. Agricultural, forest and grazing lands are an integrated system of mountain land use by villages that defy easy reduction into categories (Moench 1989). The simplest reduction, on the basis of law, is into privately held agricultural land and state forest created by the revenue and Forest Departments' settlement reports. In the Kulu district, within which the study villages are located, state forest accounts for 89% of the total land area while private agricultural land makes up approximately 7% (ODA 1994). However, interviews with villagers and government officials did not reveal a clear categorization of land into private, state, commons or open-access.

The land use types in the study villages are not easily classified on the basis of *de jure* property rights alone. The "fuzzy" boundaries between land use categories is a result of the interplay between custom and law, the articulation of local collective interests within a framework of law determined by state interests, and the influence of the market in changing production strategies and resource interests. The specifics of each land use type presented in Table 2 are explained in more detail below. Initial interviews with consultants were undertaken in Goshal and corroborated in Chachogga, although Table 2 presents the results from Goshal. Where differences exist between the two villages they have been noted in the text. The types of property found in the study villages include private, *natour*, *kuth*, *fath*, *thach* and *theli*, undemarcated protected forest, demarcated protected forest, and reserved forest.

Table 2. Types of Land use and property rights regimes in Goshal Village according to law and custom.

<u>Land Use⁴</u>	<u>Local Name</u>	<u>Village Rights to Resources⁵</u>			
		<u>Access⁶</u>	<u>Exclusion</u>	<u>Management</u>	<u>Alienation</u>
Irrigated agricultural land	Ropa	√	√	√	√
Non-Irrigated agricultural land	Chait	√	√	√	√
Redistributed land	Natour	√	√	√	√
Lineage based grazing land	Kuth ⁷	√	<i>De facto</i>	<i>De facto</i>	<i>De facto</i>
Lineage based haying areas ⁸	Fath	√	<i>De facto</i>	<i>De facto</i>	--
Forest grazing	Thach	√	<i>De facto</i>	<i>De facto</i>	--
Alpine grazing	Theli	√	<i>De facto</i>	<i>De facto</i>	--
Undemarcated Protected Forest		√	<i>De facto</i>	<i>De facto</i>	--
Demarcated Protected Forest		√	<i>De facto</i>	<i>De facto</i>	--
Reserved Forest		√ ⁹	--	--	--

⁴ Land which is considered private may be held by an individual, nuclear family, joint family or kin group.

⁵ Classification of rights is taken from Schlager and Ostrom (1993). Holders of the full set of property rights are considered to be owners of private property. When the property rights are distributed between different parties such as the state and village it is often a type of common property. The first step in an analysis of village common property management requires a classification of the rights a village holds. The symbol (√) denotes that a village holds *de jure* (in law) rights for that land type. *De facto* rights, although unrecognized by law, are rights that have been acquired by the community and recognized by other resource users and are considered to be held in custom.

⁶ Right of access to a resource also includes the right to withdraw the resource.

⁷ Kuth is a local land type surrounded by either undemarcated or demarcated forest. Its classification as private is unclear on the part of both local villagers and the local forest department.

⁸ Rights to cut grass are held by a kin group.

⁹ Some limited gathering rights (eg. deadwood) apply to Reserved Forests.

ii Private property

The revenue settlement clearly defined agricultural land (irrigated - *ropa*; non-irrigated - *chait*) as private. The full bundle of property rights were vested in the head of the household using the land at the time of the settlement report and were heritable. In the past, the transfer of land from one generation to the next was mediated by the formation of joint households which provided for the growth of the family and prevented the immediate division of land into small plots. The rights to the unit of 'private' land were then mediated by the joint family on the basis of customs developed within Pahari culture. Consultants in the village, however, noted that the holding of land by a joint family has decreased since The 1974 Himachal Pradesh Common Land Vesting and Utilisation Act (HPCLVU Act). Redistributed land was given to an individual who owned less than 5 *bigha*¹⁰ of land, therefore joint families divided up their land among individuals in order to qualify. The result was the diminishment of the institution of joint families. However, some consultants pointed out that during the time of land redistribution it was possible to divide the land on paper but continue to hold land as a joint family. Private land provides a clear land use category in law. This study demonstrates that at the village level, even private land is not exempt from a dynamic process of local institutional reconfiguration in response to, and within, the framework of law.

iii *Natour* Land

The HPCLVU Act (1974), also known as the *Natour* Lands Act, was enacted to redistribute land to the landless or land poor, but was discontinued by 1980. The redistributed land was granted from land classified by the revenue department as 'wastelands'. Consultants categorized this land differently from privately held irrigated and non-irrigated land because it carried a number of restrictions on its use. *Natour* land must be cultivated by the grantee and cannot be sold for 15 years. After the 15 year period it is considered to be the same as other agricultural land.

¹⁰ Bigha is the local unit of land measurement. 12 bigha = 1 hectare

iv *Kuth*

Kuth was identified by consultants as distinct from agricultural land and presently exists in Goshal. Although recognized by consultants in Chachoga as a land use, *kuth* does not exist in Chachoga. The customary property rights for *kuth*, as shown in Table 2, are mainly *de facto*. *Kuth* is held by a collective, Goshal lineages, and each lineage pays taxes to the revenue department for their *kuth* land. A focus group interview with village elders of Goshal revealed the following explanation of *kuth* land. In the past, when the local population was greater, forest land at a higher elevation than agricultural land was cleared and utilized as cultivated land. That land was known as *kuth*. The story told to the consultants by their grandfathers was that disease and a large earthquake greatly reduced the village population and it was no longer necessary to cultivate *kuth* land. The land was allowed to revert to pasture and trees, but was recorded as land belonging to individual land holders at the time of the revenue settlement. It is interesting to note that *kuth* is the name of a root crop grown as a cash crop in the past and was utilized by the British in the tanning industry. This crop was mostly produced in Lahul and Spiti which are at a higher elevation than Goshal. It is possible that land was cleared at higher elevations in Goshal to produce the cash crop. When the market demand for *kuth* declined the land may have been allowed to revert to pasture and trees since it was no longer a viable cash crop.

The emergence of *kuth* as an identifiable land type is linked to social and economic forces external to the village but created by fluid and dynamic property rights within village lands. The development of property rights for *kuth* could have followed the pattern used for irrigated and non-irrigated land. The difference is that agricultural land is split among the descendants of the person in whom the right in land was originally vested. As *kuth* ceased to be cultivated, it was retained by the lineage and not split among descendants. Lineages became responsible for setting the rules on exclusion, management and alienation, access having been determined by the original settlement report.

In custom, *kuth* became the common property of a collective defined as a patrilineal descent group. This is, however, changing as orchards become established in Goshal. Some lineages now divide the land among all the male descendants so that each

can plant orchard on their share of the land. Land which was previously held in common by lineages is now undergoing a process of conversion to private land. As the property rights in law are not clear, the process is occurring within the village and among villagers. It is not clear how the Forest Department would rule on the ownership of *kuth*. Some consultants mentioned that they can not sell this land because the Forest Department plans to turn this land into demarcated forest. Other consultants felt that they do have the right to sell the land and plan to sell it to hotel developers. *Kuth* provides an example of the dynamic and fluid nature of customary property rights working within a static framework of law.

v *Fath*

As described by village consultants, *fath* is an area of land over which members of a lineage hold rights to cut grass for fodder, commonly known in English as hay. The village rights for haying lands parallel the rights held to *kuth* as the right to cut grass is also held by a lineage. Haying lands are different from *kuth* as *kuth* is a right in land as settled under the revenue settlement, whereas *fath* was settled under the forest settlement as an individual usufruct right to cut grass on forest lands where a customary right previously existed. The haying right was recorded as an individual right in the 1800's but has become a collective right as the lineage increased in number.

Whereas the emergence of orchards is leading to the re-emergence of private property rights for *kuth*, the orchard economy is resulting in a diminishment in the use of haying areas. People with large orchards are able to meet their hay needs from their orchards instead of the haying areas. In the past, consultants suggested that the haying areas were strictly managed by the lineages and the village. The village would set an opening date for grass cutting, while lineages would determine how the grass was to be shared among the lineage members. Since people now collect grass from their orchards, the village consultants feel that it is no longer necessary to manage the haying areas. *Kuth* moved from private to common and now back to private, while *fath* has changed from private right, to lineage right and at present a village right of access and use. Both

demonstrate the active participation of villagers in determining how land is used and managed.

vi *Thach and Theli*

Two types of grazing lands were identified by shepherds of both Goshal and Chachoga. *Thach* refers to a forest meadow, or a clearing in a forest, which is used for grazing and acts as a campsite for shepherds. *Theli* refers to grazing areas which technically are considered to be two separate vegetative zones; alpine meadows and alpine tundra.¹¹ As consultants did not divide alpine grazing areas into alpine meadows and alpine tundra it should be noted that the terms alpine meadows and alpine pastures are used liberally in this document as a rough approximation for *theli* and not in the technical sense. The right to graze in the forest and on alpine meadows was recorded as an individual usufruct right under the forest settlement. Although the grazing right was recorded as one of the 'great rights,' village consultants said that at present the right is limited and extinguishable. The original right holder was given the right to graze a fixed number of sheep in the village forest, in a summer grazing area, and in a winter grazing area based upon a pre-colonial practice of such a right. This right was then split among the descendants of the original rights holder and the present right holders are descendants of that person. The permit is extinguishable once the shepherding family stops grazing sheep. These two factors have led to a situation where property rights over grazing lands are presently more dynamic than any of the previously mentioned land use types.

Pastoral families feel that it is better to manage the permit as a collective and not as private households. When a permit is split among the descendants of a right holder, the name is changed on the permit record and each new permit allows for a smaller number of sheep to be grazed. Since the permits are extinguishable, if one of the descendants decides to quit the pastoral livelihood the number of sheep grazed under that permit is lost to the extended lineage groups as it is impossible to change the name on the permit. Therefore, instead of recording names with the Forest Department, the pastoral families feel that it is better to leave the permit intact and decide as a collective how the permit should be

¹¹ Personal Communication, Dr. J.G. Gardner.

utilized. The property rights for grazing areas are often held by an individual on paper but managed by a lineage. Interviews with shepherds revealed that although the *de jure* rights are presently curtailed, shepherds and villages do try to exercise some of these rights and influence the management of the grazing lands. The results of pastoral management of grazing areas are described in greater detail in Chapter 5.

vii Undemarcated Protected Forest (UPF)

Previous to The HPCLVU Act (1974), 'wastelands', as classified by the revenue department, were considered as *shamlat* land or village commons by the village. This land was not utilized for agriculture because it was of poor quality and was best suited for grazing village animals and collecting firewood from the scrub forest. The same land was considered as UPF (Class III) by the Forest Department after The HPCLVU Act (1974). Under The Act, *shamlat* land was classified as allotable land to be given to the landless, or non-allotable land to be given to the Forest Department. Non-allotable land was land "...on which tree growth is thick..." (ODA 1994). This process was not completed so ownership remains vested in the revenue department for those lands not allocated to the landless. UPF or 'wasteland' is now partially privatized and partially open-access as neither the village, Forest Department nor revenue department have clear rights to the land.

Consultants in Goshal did mention two areas, however, which are still managed by the village and which form part of the UPF lands. In Goshal there are currently five sacred trees which are not to be utilized by villagers, and there is also a grove of trees along the river which is retained for village uses, such as building a temple or fixing a bridge. Grazing on UPF land is regulated through the practice of moving all cattle except milk cows to higher grazing grounds in the summer. The government effectively created a situation of open-access upon heavily used land, and at the same time limited the ability of the village to regulate the use of UPF land through The HPCLVU Act. In spite of this, customary village property rights over sacred trees, village groves, and grazing still allow the village to implement some management practices and prevent the total degradation of UPF lands.

viii Demarcated Protected Forest (DPF)

The rights of villagers in law for DPF products are similarly limited to a right of usufruct and held by the individual not the village for both Goshal and Chachoga. The specific rights of each village, and the DPF areas to which they correspond, are prescribed in the forest settlement report and vary between villages. Some of these rights, such as grass cutting and grazing are described above. Additional rights such as lopping of trees, collection of fodder, and collection of bedding are described in Table 1. Although these rights are limited in law, interviews and observation revealed a more complex picture. Two examples will suffice to demonstrate how *de facto* rights are being exercised at the village level.

The first example demonstrates how customary exclusion rights are established by villages in the Kulu Valley. Interviews with consultants revealed an area of village DPF to which the village holds rights under the settlement report but which is at the same time called by the name of a neighbouring village. Village consultants maintain that they hold rights to specified forest products from this DPF by permission of the neighbouring village and not by the settlement report. If the neighbouring village chooses to limit their rights, villagers would abide by those rules. Consultants of the same village also mentioned instances in which they allow other villages to exercise rights in their DPF area not prescribed in the settlement report. In both cases villages set exclusion rules apart from the forest settlement and claim a *de facto* right to exclude or include other villages in using their forest area.

The second example illustrates of how villages create customary village management rules for DPF lands in spite of the fact that the right is retained by the Forest Department in law. In most villages, green wood has to be cut for the winter but is not permitted by the Forest Department. The rule in one consultant's village is that four or five families can get together to cut a tree for winter fuel. Everyone in the community knows when winter fuel wood is being cut and attempts to hide it from the forest ranger. If the wood cutter is caught the fine is split among the families. If someone cuts wood to sell, or which is not needed for fuel, the forest ranger may be discreetly informed of this activity. Village rights in law are limited to a usufruct right, but villages are seen to be

engaged in a process of resistance and renegotiation of that definition of village DPF rights.

ix Reserved Forest

As neither Goshal nor Chachoga presently hold rights to a reserve forest, this land use type is not relevant to this study. Thus Table 2 only depicts the rights as determined for the region in general by the Anderson settlement report of 1886.

4.2 Neo-traditional Village Institutions

i Overview

As described in the previous section, most biological resources to which villagers have access (trees, pasture, hay) exist within a framework of customary use and rules. It is less clear, however, whether remnants of village institutions have survived colonial and nation state appropriation of resources in the Kulu Valley from local villages. The prominent village institution in Goshal and Chachoga is the *panchayat* (village council), but interviews with consultants suggested that the *panchayat* is not involved in the management of local resources. As explained by one *pradahn* (village headman), when the government took over the *shamlat* lands during the 1970's, they also took away any authority that the *panchayat* had in influencing how local resources were used. At a formal level villagers and village headmen do not feel that they have any authority to make rules about local resource use. As one village headman puts it "...the government does not allow us to take any action which will improve the grazing lands or the forest." On an informal level, an institution called village *mimbers* appears to have a role in setting some rules pertaining to village resources. Since there is no official *panchayat* role for the management of forest resources in Goshal or Chachoga, all resource management institutions or rules-in-use exist on an informal level. An exception is the *Mahila Mandal* which has begun to set rules informally and has been given limited recognition by the forest department to enforce those rules.

ii Village *Mimbers*

The institution of village *mimbers* exists in both the village of Goshal and Chachoga as reported by village consultants and is seen as distinct from the *panchayat*. The *panchayat* is considered to be a group of elected *pradahns* who are part of national politics and responsible to higher ranking politicians. The *mimbers* are chosen by the high caste village men during a religious celebration while the *pradahm* is elected through an electoral process. The *pradahm* is responsible for obtaining funding from politicians, while the *mimbers* are responsible for carrying out village works with this money, and see to the daily affairs of the village. The central difference, as described by the village consultants, is that the *pradahm* acts as a mediator or broker between the village and external agencies or individuals, whereas the *mimbers* are responsible for the internal affairs of the village and in mediating relations between villagers and villages.

In Goshal, nine *mimbers* are chosen whereas in Chachoga there are five. The central activities of the *mimbers*, as described during interviews, are village works such as building schools, repairing paths, ensuring water supply, and fixing bridges. The other main role is to settle household, and inter and intra village disputes. One example, provided by a consultant, is that *mimbers* determine the retribution to be paid when someone's cow eats someone else's crops. Other examples are the settling of boundary disputes with neighbouring villages, prevention of unauthorized use of village forest by non-village members, granting of grazing rights to non-villagers and collection of fees enforcement of rules for sacred trees and village groves, and in the past, the setting of opening dates for grass cutting in the forest and *faths*. *Mimbers* try to settle these matters internally, but turn to outside authorities when necessary. In spite of not being recognized by the government, village *mimbers* are an informal village institution which allows the village to act collectively in influencing the use of village resources.

iii *Mahila Mandal* (MM)

The emergence of the MM (women's organization) in Chachoga provides an example of the formation of a new institution which aims to undertake collective action in defense of village resources (For more detail on the *Mahila Mandal* see Davidson-Hunt

1995a,b). The MM began influencing how village resources were used by attempting to prevent the illegal felling of trees by villagers and outsiders. They have recently developed a new rule which prevents the cutting of green conifer branches for bedding, but allows the collection of fallen needles. This rule emerged as women of Chachoga became concerned about the increasing distance they had to travel to collect bedding. Now, by preventing the cutting of branches, fallen needles can be collected yearly, whereas once a branch is cut, that source of needles is gone forever. Last year the Forest Department began to support decisions made by the MM which protected forest resources. The emergence of a new institution, such as the *Mahila Mandal*, and the survival of a pre-colonial institution, the *mimbers*, suggests that villagers recognize the need to collectively manage village resources and attempt to do so through village institutions.

4.3 Summary

Local management of resources in the Kulu Valley occurs within a framework of property rights enshrined in state law. Law represents the colonial and nation state interest in, and vision of, management of resources in the Kulu Valley. The interests of the villages and villagers are seen in the continuance, or emergence of, customary property rights and village institutions which sometimes are in conflict with, and sometimes work in a complementary fashion, with state management of local resources. Simultaneously both law and custom are in a process of change and adaptation due to social, economic and ecological forces.

The tension between law and custom may be explained by the conflict of the traditional system with the simplified system of property rights established under the colonial government. The indigenous system manages the forest for many different products (timber, fuelwood, grass, bedding, ferns, crops) according to the need of local villagers and other user-groups. As demographic or market opportunities change, so too does the local management of the forest, as well as the social relations which regulate access to the forest. This is best demonstrated in this study by *Kuth* land.

The colonial and post-colonial governments in India manage for a simplified use of the ecosystem in order to obtain the maximum timber yield. This was achieved in the past

through the establishment of property rights over the forest during the colonial and post-colonial periods. Local people resist this simplification by exerting their own influence over the use of the forest resource and create a “fuzzy” and diverse use of the ecosystem. The ten land use types and *de jure* rights claimed by villagers is evidence of villagers trying to manage forests according to local needs. The following chapter examines in detail some of the issues raised in this chapter through a more detailed examination of: the role of pastoralists in creating a diverse use of a mountain ecosystem; the ability of pastoralists to manage the use of the grazing resource; and, the role of the market and the state in leading to simplified use of ecosystems.

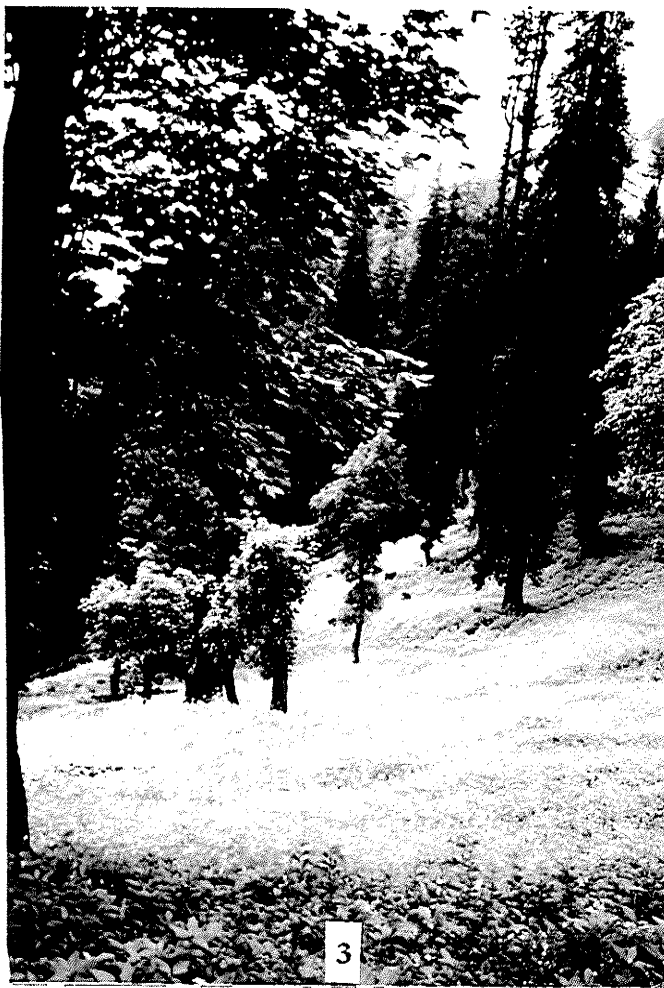


Plate 3. Lower forest meadow - lower *thach* - (about 2 300 m).



Plate 4. Key consultant (elder pastoralist) sitting on doorstep with grandchild after an interview.

Chapter 5

Contemporary Pastoralists of the Kulu Valley: A Case Study in Land-Use and Property Rights

5.1 Overview

Local management of resources within the Kulu Valley utilizes the spatial and temporal diversity and energy flows found in mountain ecosystems. Over time a diverse collective has emerged with sub-groups within the collective specializing in different products of the ecosystem resulting in villages composed of pastoralists, agriculturists and labourers. One of those groups, the pastoralists, focuses on utilizing the grazing areas, forest meadows found within the forests, and alpine pastures found at a higher elevation but contiguous to the forests of the region. The pastoralists form part of the village institution (*mimbers*) but management of the grazing resource also occurs through the customary rules and practices of pastoralists. Pastoral management of the grazing resource is based upon rules and practices which are encoded in cultural practice and which are not easily interpreted by the outside observer as cognizant management decisions. The ability of pastoralists to manage grazing areas is influenced by the framework of law set by the state, as described in Chapter 4 for forest management, and the negotiated balance between different forest interests within the village.

5.2 Grazing Strategies of the Kulu Valley

Grazing resources of the Kulu Valley are used by village agriculturists, village pastoralists, Gaddis¹² and Gujjars. Each group pursues a unique herding strategy which utilizes different parts of the temporal and spatial diversity of mountain grazing resources. These strategies are categorized according to a framework developed by Stevens (1993) for Himalayan pastoral strategies which is shown in Figure 3, and was discussed in more detail in Chapter 3.3(ii).

¹² Village pastoralists also considered themselves to be gaddis; that is, a small 'g' gaddi which generically referred to all shepherds, as opposed to large 'G' Gaddis which refers specifically to the tribal group. In order to avoid confusion the term village pastoralist is used to distinguish gaddis from Gaddis.

i Village Vicinity and Upper-lower Slope Herding

Village-vicinity and upper-lower slope herding is the predominate strategy of Goshal and Chachoga agriculturists. Village-vicinity herding depends upon pasture which surrounds the village and hay collected from fields and forests to feed family dairy cows, bullocks during plowing season and the odd sheep or goat which is kept around the house. Lower-upper slope herding is also practiced by village agriculturists as they utilize pasture areas near the village, hay during the winter, and pastures at a higher altitude during the summer. In the spring, after plowing has occurred, village agriculturists of Goshal and Chachoga move bullocks and heifers to the village's higher pastures. While the animals are in the high pastures a number of families combine their herds and share the duties of looking after the animals. The bullocks and heifers are brought back down to the village for the fall plowing and remain in the village area until the following spring.

ii Long-distance Herding

Village pastoralists and Gaddis both practice long-distance herding of sheep and goats. The difference between the two groups is that village pastoralists are considered to be transhumant herders while Gaddis are nomadic or semi-nomadic herders from the Kangra valley. The herding strategy of Goshal and Chachoga pastoralists is specifically intermediate stationed transhumance as their village of residence is located between the summer and winter grazing ranges. Gaddis are considered to be semi-nomadic, and not nomadic, because they now have permanent dwellings in the Kangra valley which they received through a government sedentarization programme. Although Gaddis now have permanent dwellings they are still considered semi-nomadic and not transhumant as the herding unit is composed of the entire family. Gaddis and village pastoralists are the two main groups who practice long-distance herding in the Kulu Valley.

iii Upper-lower Valley Herding

Gujjars are the main group which focuses on upper-lower valley herding. Gujjars were previously nomadic water buffalo herders but are now considered to be semi-nomadic as they also received permanent homes through the sedentarization programme

of the Indian government. The Gujjars currently move up the Beas river valley in the spring to graze in the village forest areas of the Kulu Valley and down to their villages in the fall where the water buffaloes are stall fed during the winter.

The long-distance or transhumant herding strategy of the village pastoralists form the focus of the present study as they are the major users of village forest areas. Gujjars are also included for comparative purposes, since they also use village grazing grounds during the summer months. Gaddis are not part of the study because they are not presently using Goshal or Chachoga grazing areas during the year of this study.

5.3 Characteristics of the Major Herding Groups

i Village Pastoralists

Village pastoralists form a sub-group within the village of Goshal and Chachoga. Out of approximately 130 families in Goshal seven are presently recognized by the pastoralists and other villagers as being pastoral families. Likewise, in Chachoga there are three pastoral families out of 80. Table 3 presents the data for the pastoral families of Goshal and Chachoga for the year 1994. Although pastoral families are a small segment in numeric terms they still form an important part of the village as can be seen in Table 3. Approximately half of the sheep which village pastoralists take to the summer grazing grounds belong to other village members or people from other villages in Mandi district. Village pastoralists undertake this service in return for a *nana* (fee).¹³ The economic value of the herd which village pastoralists take to summer grazing areas demonstrates the importance of pastoral families to the local economy.

Interviews with village pastoralists result in the following estimates. An average sheep (35 kg) is worth 800.00 Rupees (Rs)¹⁴ and an average goat (40 kg) is worth 1,000.00 Rs. In addition, sheep produce 3.5-4.0 kg of wool yearly, worth 50.00 Rs/kg, or 175.00-200.00 Rs/sheep/year. Based on these estimates, the standing stock value of the animals for Goshal is 1,763,000.00 Rs while it is 800,000.00 Rs for Chachoga. The value

¹³ The fee paid by Goshal villagers to Goshal pastoralists was 2 kg rice, 1 kg wheat and 1kg salt per sheep or goat. The fee paid by people from other villages was 5 Rupees per head to village *mimbers* and 25-30 Rupees per head to the Goshal shepherd plus 1 kg of salt.

¹⁴ In 1994, 22 Rupees (Rs) = 1 Canadian Dollar.

Table 3. Characteristics of transhumance herding families and groups, herd composition, summer and winter grazing permit areas of Goshal and Chachoga villages.

Group ¹	Pastoral Family and village residence ²	Family Owned ³		Other Goshal Family ⁴	Mandi Family ⁵	Flock Total	Area of Summer Permit ⁶	Area of Winter Permit
		Goat	Sheep	Sheep or Goat				
1	A (Goshal)	70	90	37	0	197	Lahul	Bilaspur
1	B (Goshal)	35	45	0	0	80	Lahul	Bilaspur
1	C (Goshal)	30	60	70	50	210	Lahul	Slapper
1	D (Goshal)	70	130	20	20	240	Lahul	Slapper
1	E (Goshal)	12	78	10	100	200	Lahul	Sainj
2	F (Goshal)	30	90	390	200	710	Lahul	Slapper
3	G (Goshal)	60	40	50	50	200	Lahul	Aut
3	H (Kulu)	40	60	90	80	270	Lahul	No permit
Total	Goshal	347	593	677	500	2107		
4	I (Chachoga)	90	60	200	0	350	Spiti	Mandi
4	J (Chachoga)	30	120	50	0	200	Spiti	Mandi
5	K (Chachoga)	120	70	100	100	390	Spiti	Mandi
Total	Chachoga	240	250	350	100	940		

¹ Families combine flocks into groups for grazing within village forest area and in area of summer permit.

² Family names are represented by letters to respect consultant confidentiality. Village of residence is denoted within brackets.

³ Numbers represent animals owned by the pastoral family.

⁴ Numbers represent the number of animals (sheep or goats) owned by other Goshal families but sent with village pastoralists for summer grazing.

⁵ Numbers represent the number of animals (sheep or goats) owned by villagers from Mandi district but sent with village pastoralists for summer grazing.

⁶ Permit areas are not specifically identified in order to respect consultant confidentiality.

of the wool per year from the village pastoralists' sheep is 102,725.00 Rs - 117, 400.00 Rs. The value of the pastoral activity for only Goshal and Chachoga is 2,563,000.00 Rs, making it an important part of the village economy in terms of capital directly held by villagers.

Generally, each pastoral family owns their own animals and herds as independent units. Pastoral families do form joint herding groups when the family herd is small in number, if one family does not own a grazing permit and has to work under another families permit, and during the summer and village grazing periods. Group numbers in Table 3 indicate those families which combine their animals into joint herds for the village and summer grazing periods. Group 3 is an example of two families who combine their herds because one family does not hold a winter permit. Village pastoralists form a subgroup, organized along family lines, but who work in cooperation with other village pastoralists and village agriculturists.

ii Gujjars

In Goshal there are presently eight Gujjar families who utilize village grazing areas. Table 4 shows the characteristics of the Gujjar herding families. Gujjars are also organized as independent family herding groups but sometimes join their animals into a joint herd, as shown by group 3. The Gujjars of Goshal are part of an extended family with seven out of eight families from Mandi district, and one from Kulu district. Some of the extended family stay in the home village to cultivate crops during the summer or they share the grazing duties so that each family can spend some time cultivating crops. The mainstay of the Gujjar herding economy is water buffalo milk which is sold in the villages surrounding Manali, although some of the families also keep goats, cows and bullocks as can be seen in Table 4.

As with village pastoralists, the value of Gujjar herding is an important addition to the regional economy. Averaging the production of milk by the best water buffalo with the worst gives an average of 12 kg of milk/day/water buffalo. The Gujjars, who utilize the grazing grounds of Goshal, graze 37 water buffalo (Table 4) which results in a total milk production of 444 kg of milk/day. Water buffalo are grazed in Goshal grazing

Table 4. Characteristics of *Gujjar* herding families.
Waterbuffalo herder families (*Gujjars*) and groups, herd composition, and wintering location. Families which have permission from Goshal to utilize village grazing areas, 1994.

Group ¹	Family ²	Water Buffalo	Cow	Bullock	Goats	Winter location ³
1	L	5	0	2	0	Kulu
2	M	4	0	0	0	Mandi
3	N	6	1	0	2	Mandi
3	O	5	0	2	4	Mandi
3	P	5	0	0	0	Mandi
4	Q	4	0	0	0	Mandi
5	R	8	1	2	25	Mandi
Total		37	2	6	31	

¹ In general, each waterbuffalo herder family is responsible to herd their own animals, however, three brothers had combined their animals and share the work of herding.

² Names have been replaced with letters to protect consultant confidentiality.

³ The waterbuffalo herders interviewed for this study are now settled and return to their homes during the winter.

grounds for approximately 150 days/year which results in a total production of milk during the summer grazing period of 66,600 kg of milk/summer. Milk is sold in Manali and other villages for eight Rs/kg. The value of the summer grazing to the Gujjars is estimated as 532 800.00 Rs/year. In Table 4 it can be seen that there are seven heads of households. Averaging the gross income from water buffalo milk among the seven heads of household the income for each is 76 114.29 Rs/year or 208.53 Rs/day. Contrasted with the average daily income of a wage labourer in India of 24 Rs/day, it is apparent that the loss of the grazing grounds to the Gujjars would result in a significant loss in income. However, profit from water buffalo herding is only realized during summer grazing. During the winter, the cost of fodder increases costs which only allows milk sales to meet the cost of animal maintenance. In addition, the village of Goshal collects a fee of 150.00 Rs/water buffalo/year for a total of 5,500.00 Rs, while the Forest Department collect 8.00 Rs/water buffalo/year for a total of 296.00 Rs. The grazing of water buffalo in village forests thus provides milk to the local villages, a modest income to the village, and an income for the water buffalo herders.

iii Transhumant Cycle of Village Pastoralists

The transhumant cycle of the pastoralists of Goshal and Chachoga provides an example of the ways in which management by pastoralists is encoded within their cultural practices. Customary rules, although less visible than formal institutions, do provide pastoralists with a set of rules which regulate the use of grazing commons. The details of the transhumant cycle are shown in Figures 4, 5 and 6.

The key to the transhumant cycle is the movement from areas of low elevation in the winter to areas of high elevation in the summer. This allows the pastoralists to take advantage of spatial differences, grazing resources of different ecological zones due to vertical differences (see Figures 4 and 5), temporal differences, and grazing resources at different times of the year (see Figure 6), thus maximizing the production of their animal stocks. Pastoralists utilize the spatial and temporal diversity found in mountain ecosystems to maximize production and to follow a rotational grazing system which allows the pasture a chance to rest and recover. The greatest vertical difference for the

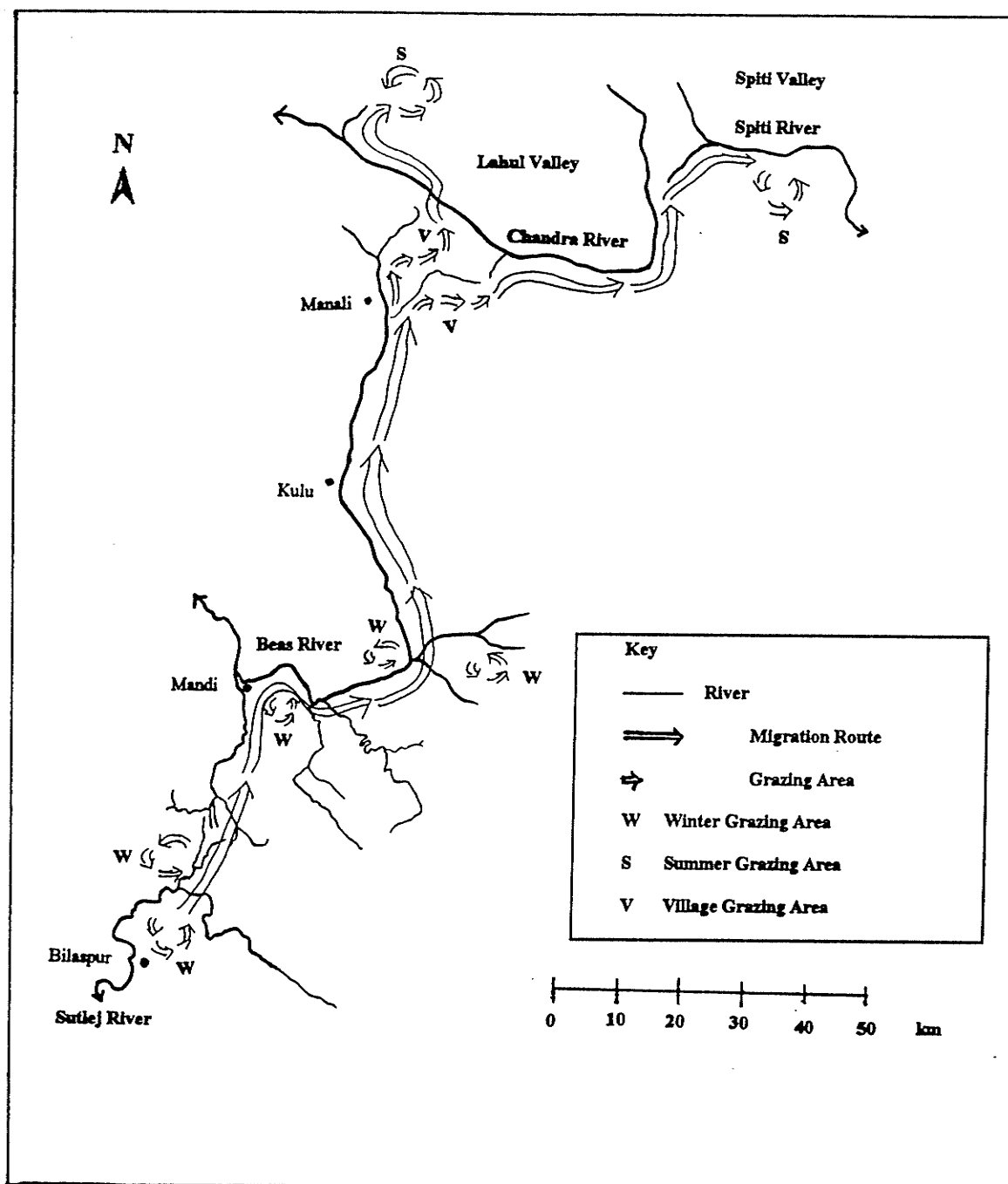


Figure 4. Transhumant migration route of Goshal and Chachoga sheep and goat pastoralists. The arrows show the direction of spring/summer migration. The fall migration retraces the same route. Based on interviews with pastoral families of Goshal and Chachoga.

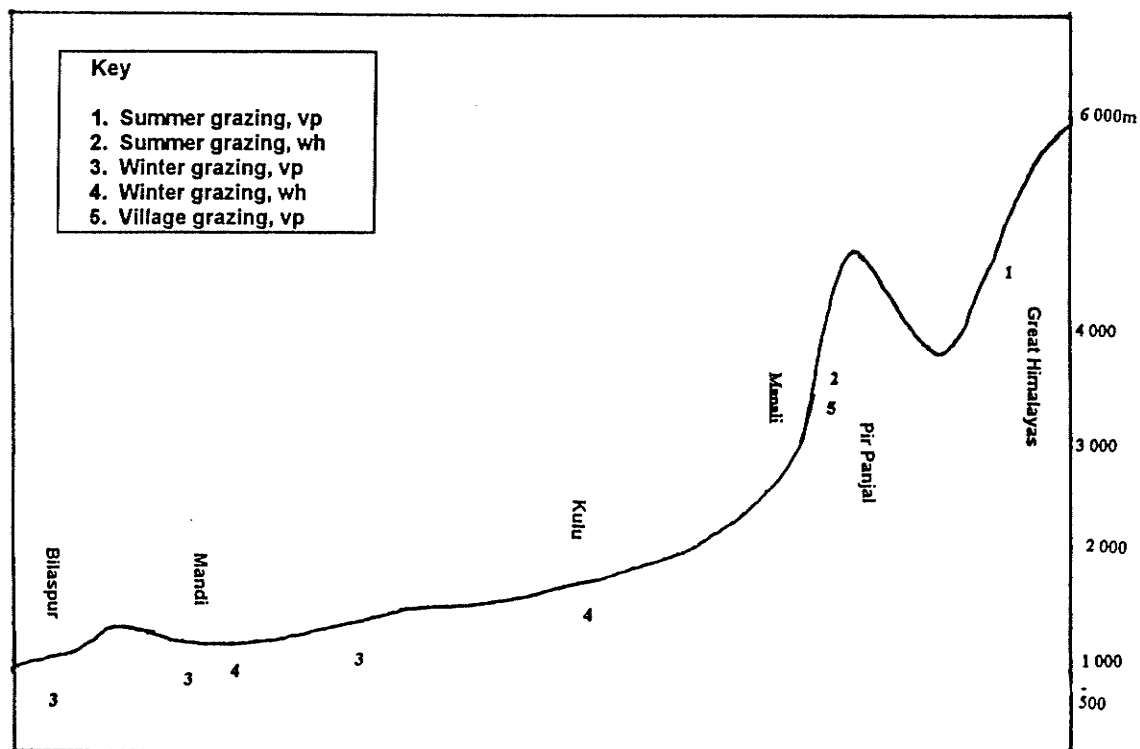


Figure 5. Altitudinal pattern of village pastoralists' (vp) and waterbuffalo herders' (wh) migration routes. The Figure displays the same seasonal cycles as in Figures 4 (vp) and 8 (wh).

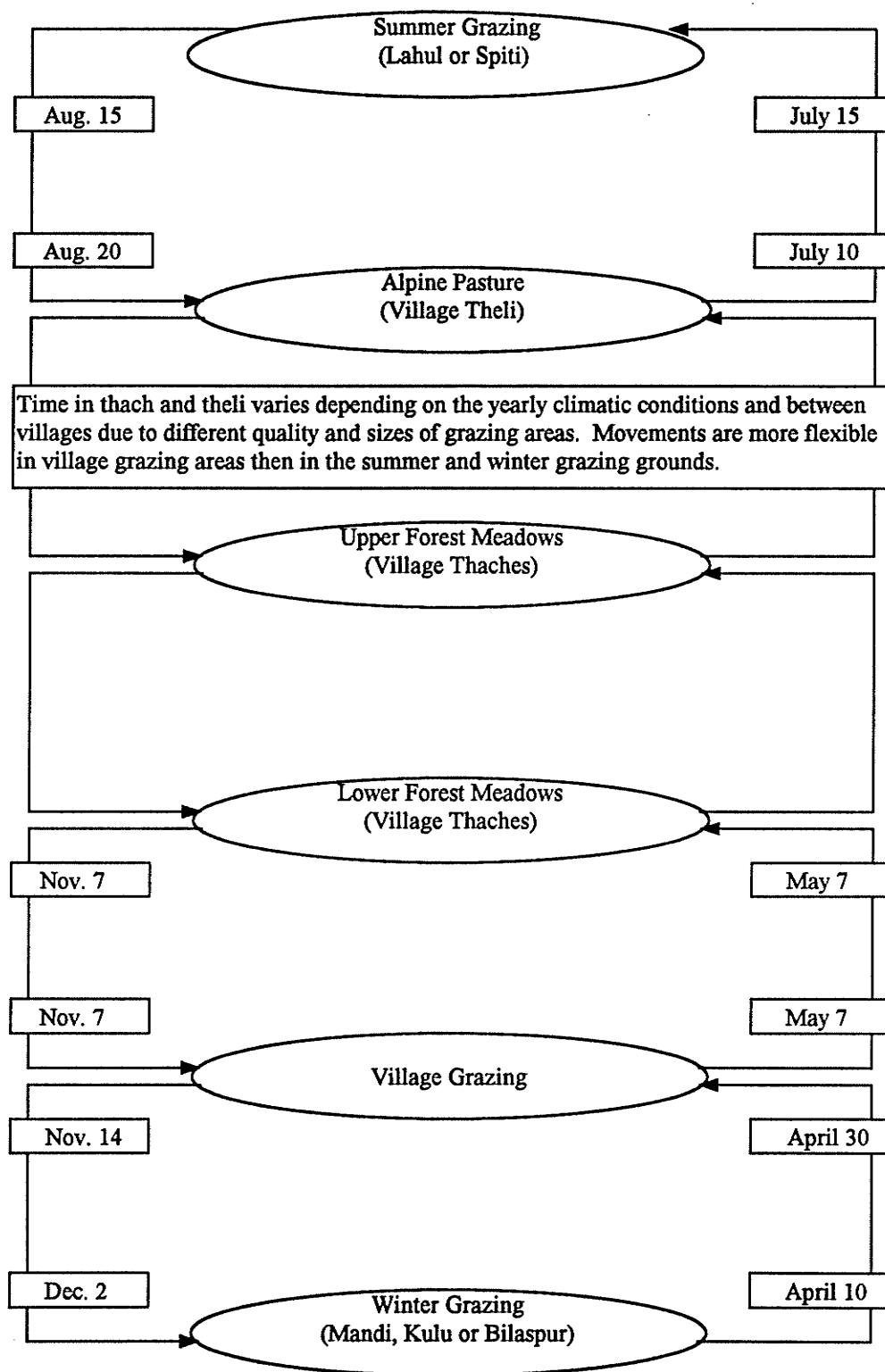


Figure 6 . An example of the transhumance cycle of village pastoralists. Based on movements made during the year of 1993-1994 of a Goshal Shephard. Other pastoral groups in Goshal and from other villages will have slightly different temporal cycles. Timing may differ from year to year.

pastoralists of Goshal and Chachoga is approximately 4 000 m (Figure 5) as the pastoralists move from the semi-tropical climatic zone of Bilaspur to the cold arid zone of Lahul. The basic cycle of all pastoralists, from both villages, is similar with the exception that Goshal has its summer grazing in Lahul while Chachoga has its in Spiti. This cycle was codified by the 1886 Anderson forest settlement report so that even today permit areas and timing of movement are specified. In addition to this macro-cycle, pastoralists also practice a micro-cycle of rotation within their village forest areas.

The micro-cycle of shepherds follows the same pattern as the macro-cycle in that it is a rotation which utilizes the vertical difference between lower forest grazing areas and higher alpine pastures. As shepherds move up from the winter grazing areas they usually travel rapidly until they reach their village area. Once at the village, the shepherds spend about five days around the village on the way up in the spring and on the way back down in the fall. This allows them time to do chores around the household and pick up sheep from other villagers. After they move from the village they use the lower forest meadows, then move up to the upper forest meadows, and finally move to the alpine pastures before moving the herds to Lahul or Spiti for part of the summer (Figure 6). Each village forest area contains a number of forest meadows and alpine pastures which are recognized by name as shown in Table 5 and Figure 7. This cycle is then reversed on the way back in the fall. Although the cycle is codified in law, the shepherds also consider other reasons which influence their decisions to move between these grazing areas, and which can be regarded as management decisions. Before considering grazing management decisions, the Gujjar cycle will be discussed to illustrate how most pastoral systems work from the same premise.

Table 5. Grazing areas in Goshal and Chachoga village forest areas as identified by pastoralists.

See Figure 7 for location of numbers as specified in column 1.

Number	Grazing Area ¹	Classification ²	Right Holder
1	Mohri Dugh	Lower Forest Meadow	Goshal
2	Jamu Dugh	Lower Forest Meadow	Goshal
3	Khorti Pandhe	Lower Forest Meadow	Goshal
4	Karmani Dugh	Upper Forest Meadow	Goshal
5	Thothi Pandhe	Upper Forest Meadow	Goshal
6	Bali Dugh	Upper Forest Meadow	Goshal
7	Nehra ³	Upper Forest Meadow	Goshal
8	Kanoro	Upper Forest Meadow	Goshal
9	Mondrage	Upper Forest Meadow	Goshal
10	Rai Thache	Upper Forest Meadow	Goshal
11	Shedagal Dugh	Upper Forest Meadow	Goshal
12	Gogalage	Alpine Meadow	Goshal
13	Bada Thache	Alpine Meadow	Goshal
14	Gora Pandhe	Alpine Meadow	Goshal
15	Monzue Tapri	Alpine Meadow	Goshal
16	Siandhar	Alpine Meadow	Goshal
17	Thaltu	Alpine Meadow	Goshal
18	Nala Thach	Alpine Meadow	Goshal
19	Monzu Thel	Alpine Meadow	Goshal
20	Rai	Lower Forest Meadow	Chachoga
21	Dudlu	Upper Forest Meadow	Chachoga
22	Dar	Alpine Meadow	Chachoga
23	Gogle	Alpine Meadow	Chachoga

¹ Names of grazing areas are those used by pastoralists to identify an area. Usually refers to an open meadow area in the forest or an area on the alpine meadow where pastoralists will camp or have a hut. Spelling represents a phonetic approximation to English and should not be taken as a transliteration from Pahari to English.

² Classified on the basis of position of use in the transhumance cycle and altitude. Technically, many of the "alpine meadows" are "alpine tundra" but some, such as No. 16 and 19 have some trees.

³ Areas 7, 8, 10 and 17, 18, 19 are used by waterbuffalos; the rest are used by village pastoralists' sheep and goats.

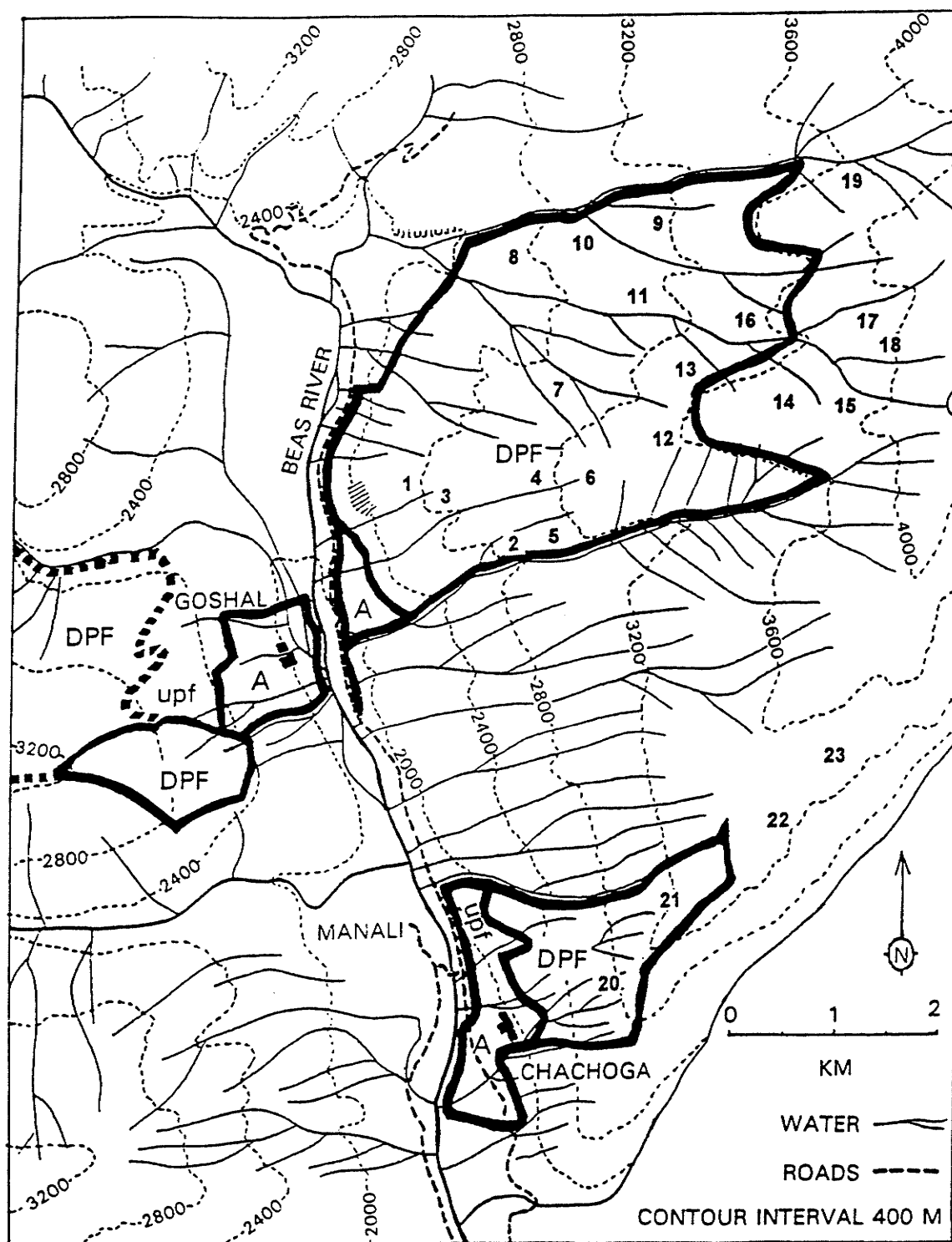


Figure 7. Village use areas of Goshal and Chachoga showing agricultural areas ('A'), demarcated protected forest areas ('DPF'), and undemarcated protected forest areas ('upf'). (Source: Berkes et al., 1995). The numbers denote approximate location of forest meadows and alpine pastures utilized by Goshal and Chachoga pastoralists. (See Table 5)

iv Gujjar Herding Cycle

The Gujjar herding cycle, as shown in Figures 5, 8 and 9 is essentially the same cycle that the village pastoralists follow, but at a compressed scale. The Gujjars also utilize the spatial and temporal differences of mountain grazing resources to maximize their production of water buffalo milk. The major difference is that Gujjars do not have permits or customary grazing rights in any forest areas of the Kulu Valley. They are dependent upon negotiating grazing rights from other villages. Villages, such as Goshal and Chachoga, appear to have more grazing areas in their forests than they are able to utilize, so they allow Gujjars to graze in certain forest meadows and alpine pasture areas. This allows the Gujjars to move up to higher grazing areas in the summer. This is advantageous as the water buffalo suffer from the heat and are less productive at lower elevations in the summer. Once in the village forest they follow a similar micro-cycle as the village pastoralists as shown in Figure 9. The major difference between village pastoralists and Gujjars is that Gujjars stall feed their water buffalo in the winter. As grazing resources in the winter grazing areas are in short supply, it is impossible for the Gujjars to negotiate grazing rights with any of the customary right holders. The grazing cycle of the Gujjars is thus a unidirectional cycle, up to summer grazing areas in the upper Kulu Valley village forest areas, and back to their homes in the southern portion of the Kulu Valley the in the fall.

v Grazing Management Decisions

The primary decisions which pastoralists make revolve around decisions on how to move the herd from one grazing area to another in a way which protects the condition of the grazing resource yet allowing maximization of animal production. The most intensive pasture management, in terms of time and labour investment, occurs in winter grazing areas. While in winter grazing areas pastoralists utilize rotational grazing. Rotational grazing is not preferred by pastoralists because it requires a greater investment in labour and time. The herd is watched constantly and kept to a defined grazing area and once that

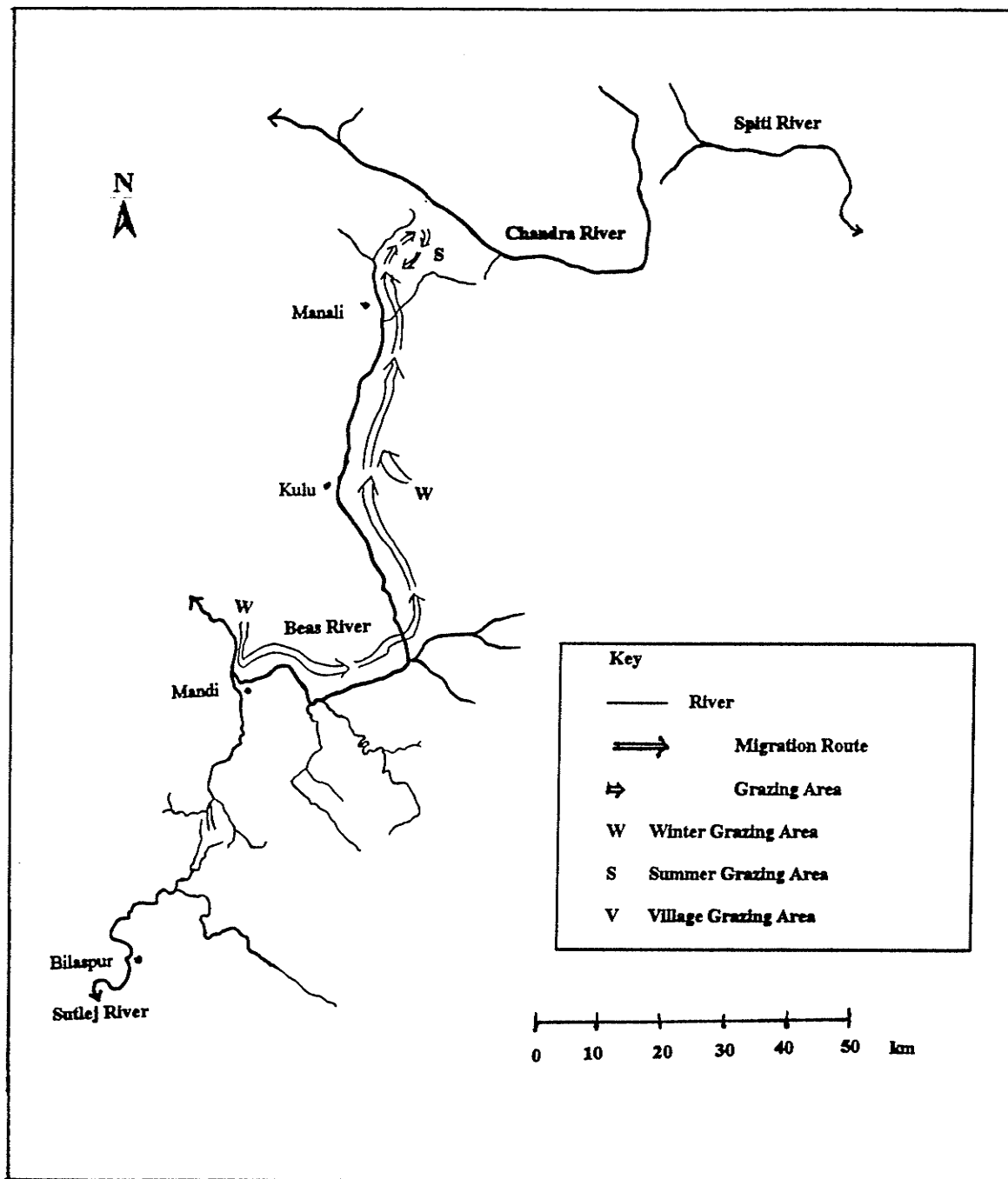


Figure 8. Semi-nomadic migration route of Gujjars (waterbuffalo herders). Based on interviews with Gujjars utilizing Goshal's village grazing areas. For altitudinal pattern see Figure 5.

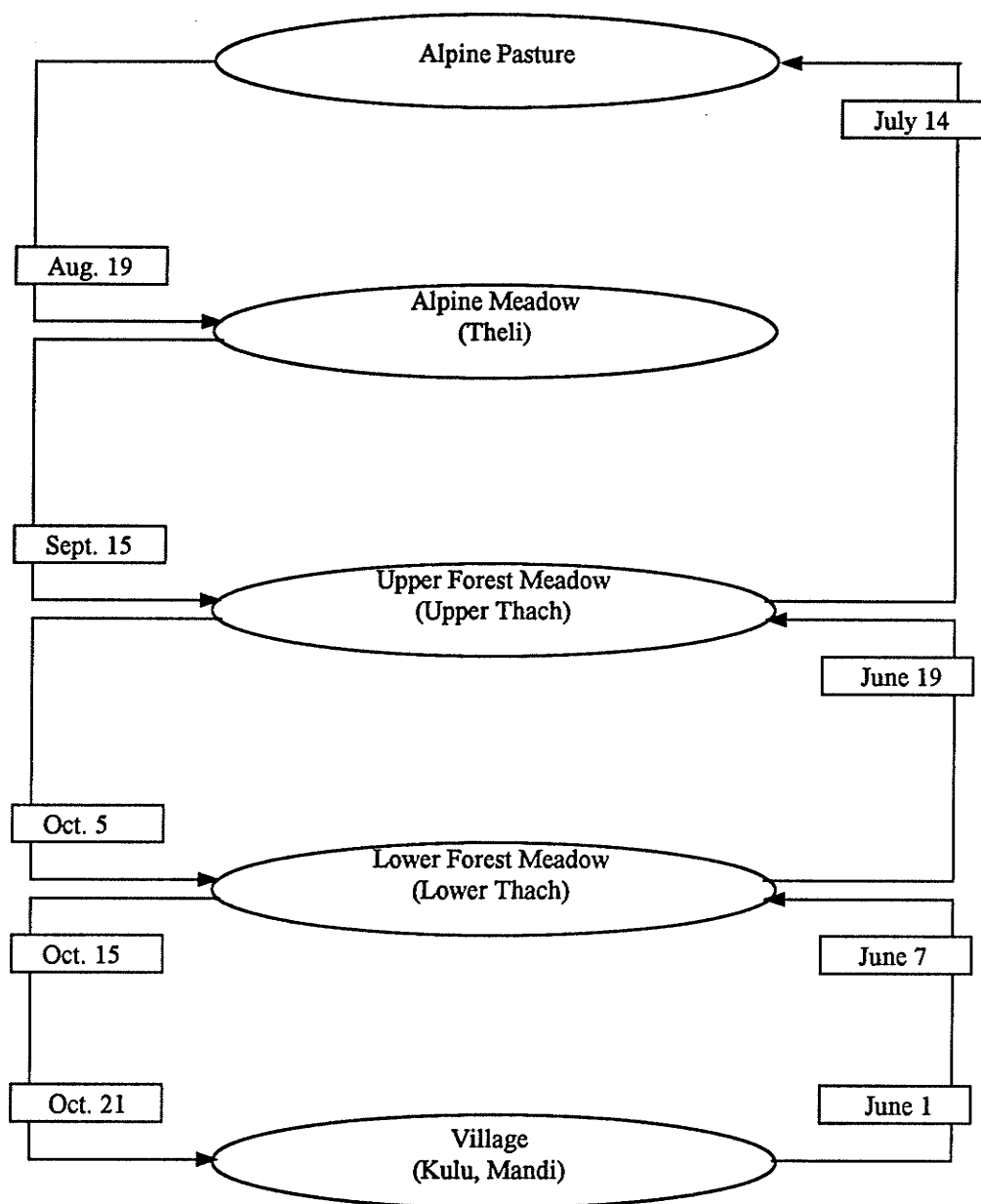


Figure 9. Temporal Cycle of Gujar (Water Buffalo) Herders utilizing Goshal grazing grounds. Based on movements made by Gujjars during cycle of 1993-1994. Gujjars in other village grazing grounds may have a slightly different cycle and timing may vary from year to year.

area is grazed it is moved to another. Consultants feel that this maximizes the utilization of pasture as it decreases trampling and prevents the animals from grazing selectively.

By comparison, free range grazing is utilized in both the village and summer grazing areas as pasture is considered abundant. The other management practice which shepherds follow in winter grazing areas is the cutting of branches to feed the sheep. This is done through an agreement with a village right holder in the winter grazing area whereby sheep are penned in a field and fed branches in return for the sheep manure. Both of these intensive management practices are followed by village pastoralists in an attempt to maximize the amount of animals they can keep in the winter area so that they can fully utilize the grazing resources of the village and summer grazing areas. As noted by the pastoral consultants, there is a shortage of pasture in the winter grazing areas while there is more pasture than their animals can use in the village and summer pasture areas. However, it is not possible to keep more animals than the extent of feed in the winter grazing areas as the animals will not survive the winter. Therefore pastoralists utilize intensive management to try and increase the productivity of the grazing resource, while in the village and summer grazing areas, free range grazing is practiced as the number of animals do not require an intensive management regime. Due to the shortage in the winter grazing areas, the pressure is to move from these areas as soon as possible.

The primary constraint, reported by consultants, in moving the herd from the winter pastures to the village pastures is snow cover. It is impossible to move the herd to a higher pasture area while the grass is covered with snow. It is also not considered a good idea to move the herd too quickly after the snow melts for a number of reasons. Some reasons given suggested that if a herd is moved before the grass has a chance to grow there will not be enough pasture and the herd will wander, when a herd wanders it increases the effort required on the part of shepherds and increases sheep losses, and bloating and diarrhea will occur if the sheep graze fresh grass. These constraints, in effect, protect the pasture resource as it prevents sheep from tearing up wet pastures which would allow unwanted plants to invade and decrease the quality of the pasture.

Pastoralists are also conscious of changing their grazing practices depending on the quality of a particular grazing area. Consultants hold an extensive knowledge of the plants of the forest and of plants which are good for grazing. Table 6 presents a list of plants, which village pastoralists and Gujjars, recognize by name and which are good pasturage for animals. In addition to good plants, pastoralists also recognize plants which cause harm to their animals. One such plant, *loshri*, causes *trenigidi*, which is a disease causing sheep to pant due to blood filling the lungs. The lungs then turn black and the sheep will die. When these plants appear in a grazing area the pastoralists will not graze those areas, allowing the good plants to reestablish.

The timing of movement within the herding cycle matches the timing of the agricultural cycle, as for example, the timing between sheep grazing of forest meadows and grass cutting. Sheep graze the lower forest meadows in May, while grass is cut in August. Sheep graze the early growth of grass, the grass then regrows and is cut for hay as it is going to seed. The sheep then return to graze the same grass in November after it has a chance to regrow in September and October, but before the snow falls. The integration of the herding and agricultural cycle allows for three cuts of grass and allows both pastoralists and agriculturists to meet their needs from the same resource.

The final management decision, which is presented in this study, is the decision to take sheep and goats to Lahul and Spiti for 1-2 months of grazing in the summer. The reason that the effort is made to travel to Lahul and Spiti is on account of *Nehru* grass. This grass is noted by pastoralists as the 'strongest' grass for sheep and goats and the one which makes the animals 'healthy.' As goats are sold during the return trip and sheep are sheared, the weight gain and wool growth are reported to more than compensate for the travel effort. The major constraints, which limit the time spent in the summer grazing grounds are high pass closure from snow and snow on the high pastures. The return trip has to be made before snow closes the high pass as this would leave the pastoralists, with their herds, stranded. This limits grazing in the summer pastures to a maximum of one to two months. In spite of the risks and short available grazing period, the trip to Lahul and Spiti is seen as a way to maximize animal production and an important part of the grazing cycle for village pastoralists.

Table 6. List of plants recognized by village pastoralists and Gujjars.
List specifically includes plants edible for animals¹, as recognized by village pastoralists and waterbuffalo herders.

	Cultivated Land ²	Forest ³		Alpine Meadows	
Transhumance Pastoralists	Chalata ⁴	Baza	Bodga	Masha	Narat
	Dratha	Soal	Tolda	Budhu	Nehru
	Pra	Talaba	Kathi	Molara	Leberi
	Srka	Karash	Shati	Jokdi	Kuri
	Mishen	Kuva	Kath	Nrahi	Dunu
	Bhat kuth	Peply gah	Shambli	Dudu	Losar
	Shongt	Namalugah	Bhakli	Dothele	Gadahri
	Che	Pophara	Kosh	Choda	Mingua
	Bura	Bastu	Rai	Min	Bodhi
		Chemnu	Tos	Chode	Shein
		Bandha	Kati		
		Molara	Buj		
		Mander	Panther		
Waterbuffalo herders		Holie ⁵	Chiera	Nehru	
		Masha	Kata	Chuna	
		Mashalin	Anjudi		
		Chana	Surma		

¹ These are plants which are grazed by sheep, goats and waterbuffalo. The list was generated by an elder pastoralist during an interview. Estimates on the number of plants utilized for fodder, human food, fibre or fuel varied between 150-300 plants and a list 80 such plants was generated by another elder pastoralist. Although these do not represent systematically collected, comprehensive lists, it nevertheless reveals that a diversity of plants are known and utilized by local villagers and that their knowledge cannot be easily dismissed. The ability to name plants and identify uses is an indication of an in-depth knowledge of an ecosystem. Uses of plants are not given in this document in respect of the intellectual property rights of local knowledge holders.

² Refers to plants which grow in the fields or on the field margins and which are not sown or planted in some fashion.

³ Includes leaves from trees which are used as fodder.

⁴ These are phonetic approximations of English and should not be taken as transliteration from Pahari to English.

⁵ These are phonetic approximations of English and should not be taken as transliteration from Gujjarati to English. Names for the same plant may vary between Pahari and Gujjarati.

The grazing cycle and the decisions embedded within the cycle represents knowledge built up over generations of herding sheep, goats and water buffalo in the Kulu Valley. The culturally encoded management decisions are not arbitrary, but made on the basis of maximizing the production of animals while protecting the grazing resource.

vi Informal Rules

The management of grazing commons of the Kulu Valley occurs within a formal system of property rights, permits and rules which determine who is allowed to graze sheep, where they can graze them, how many they can graze, and when they can move from one grazing area to another. A more direct form of management which the Forest Department utilizes is the closing of certain grazing permit areas in order to establish a forest plantation. Parallel to this government regulated system is a set of informal rules followed by pastoralists as they negotiate access to different grazing areas from agriculturists, government officials and other pastoralists. Three examples are presented to demonstrate the types of customary rules that are emerging in the Kulu Valley and, due to the restructuring of access, influence the management of the pastoral commons.

The heaviest fines a shepherd faces occur when the sheep or goats stray unto an agriculturist's private property, such as an orchard or crop land, and damage the plants. When this occurs it is understood by the pastoralists that the owner can confiscate the animals and demand compensation. A bargaining process then ensues between the shepherd and the agriculturist. When this occurs the agriculturist might demand as much as 500.00 Rs in compensation from the shepherd but will often settle for 250.00 Rs. Neither the shepherd or the property owner want to involve the police or *panchayat* leaders due to the hassle and propensity of having to give them a cut of the compensation. In order to avoid official involvement, agriculturists and shepherds attempt to settle these problems between themselves.

Pastoralists also face other situations when it is necessary to negotiate directly with government enforcement officials and avoid formal bureaucracy. Shepherds sometimes find it necessary to graze their sheep in a closed forest. It is possible to ask the Forest Department to enter a closed forest for temporary grazing, although this is a time

consuming endeavor, and permission is not guaranteed. To illustrate this point, one pastoralist recounted a story from his past experience when he entered a closed forest with 70 goats and 230 sheep. As he was leaving the forest he was approached by the forest guard. The official fine was five Rs/animal but the pastoralist and the enforcement officer negotiated a direct fine of 250 Rs. Currently, it appears that this general practice is still in operation which allows pastoralists to negotiate solutions to problems and influence management practices in concert with local enforcement officials.

Within the village forest there are presently both customary rules which exclude outsiders and those which create exclusive grazing grounds for groups of village pastoralists. Village pastoralists do not consider all grazing areas, or *thaches*, of equal quality. The best *thach* is the one in the middle of the village forest, surrounded by open forest and close to firewood and water. Each group of village pastoralists prefer to have access to the highest ranked *thach*. In order to reduce possible conflict between groups, there is a set of customary rules followed by village pastoralists which determines exclusive use for a *thach* by a pastoral group for a given grazing period. The customary rule of access for *thaches* is first comer's rights. The group which arrives at the *thach* first claims it for the grazing period. The timing of movement requires detailed knowledge on the condition of the grazing resource. If a group moves too early, and there is not enough pasture for the herd, the herd begins to wander and the group is required to move back down to the previous grazing area. The timing of the move has to be such as to beat the other groups, but at the same time the pastoralists have to be sure that there is enough pasture for the herd. Oftentimes a group will move at night to try and beat the other groups. The use of first comer's rights allows village pastoralists to turn village grazing areas into temporally exclusive grazing areas for each grazing period.

5.4 The Diminishing Herding Economy

The most visible sign of change in the productive strategies of village economies is the emergence of orchards on dryland and irrigated agricultural land, and onto unprotected demarcated forest land. Initial interviews were undertaken with village consultants during the field season and revealed that villagers themselves recognized this

change towards an orchard economy. Consultants also noted that a concurrent decrease in the herding economy was taking place. In order to document the change from herding, and the concurrent change towards orcharding, two surveys were undertaken. The first survey was undertaken during a focus group session with village elders in Goshal and Chachoga, the results of which were corroborated in interviews with the village headmen of each village.

The results of this survey, shown in Table 7, represents the view of village elders on the change which they see occurring in their villages. Through observation it is evident that there has been substantial increase in new orchards in both of the study villages. The results of the survey (Table 7) also support this observation as the number of households who now have at least some orchard has increased from zero per cent to 70 percent of the total households in Goshal, while in Chachoga a similar increase is noted from 19 per cent to 100 per cent. Paralleling this increase is a decrease in the number of large herds in the village. In Goshal, the number of households holding large herds (greater than 100 animals) has decreased from 17 per cent of the total households to 1.5 per cent. Likewise in Chachoga the decrease has been from 17 per cent to 3.8 per cent. A similar decrease in small and medium herds of sheep and goats, and in cattle ownership, can also be seen in Table 7. Overall, it appears that as orchards have increased, herding has decreased. A possible explanation for this pattern will be presented following a discussion of subsequent results.

A detailed household survey was also undertaken in the village of Goshal with 23% (7/30) of Scheduled caste and 16% (12/75) of Rajput households interviewed (see Appendix B for the survey schedule). The results of the household survey are presented in Figures 10, 11 and 12 (see also Appendix C for a summary of survey results). Figures 10 and 11 provide support for the claim that orcharding has increased while herding has decreased. In Figure 10 a distinction is made between irrigated and non-irrigated land with no trees and orchard. Land which is irrigated or non-irrigated, but has had trees planted on it even within the last month, was classified as orchard. On the basis of the results of this survey, the shift to orchard is dramatic. From 1962 to 1994 the irrigated land held by all interviewed households had decreased from 51 to 22 *bigha*, non-irrigated

Table 7. An overview of economic change in Goshal and Chachoga.
The change in the number of households which use different kinds of land, animal ownership and orchard ownership from 1962 to 1994.

<u>Year</u>	<u>Goshal Village</u>		<u>Chachoga Village</u>	
	<u>1962</u>	<u>1994</u>	<u>1962</u>	<u>1994</u>
Total No. of households	60	130	60	80
Irrigated agricultural land	60	20	40	22
Non-irrigated agricultural land	60	130	60	80
Kinship based haying land	45	90	none	none
Kinship based grazing land	45	30	20	25
Redistributed common land	0	90	0	60
Orchard	0	90-100	15	80
Cattle	60	90	60	76
> 1 sheep or goat	60	40	60	20
> 20 sheep or goats	30	16	60	10
>100 sheep or goats	10	2	10	3

Note: Based on information obtained during a focus group with village elders and cross-checked during interviews with village headmen. The numbers represent the local 'best estimates' and not official data. The war of 1962 was used as a 'marker' in interviews to summarize long-term changes.

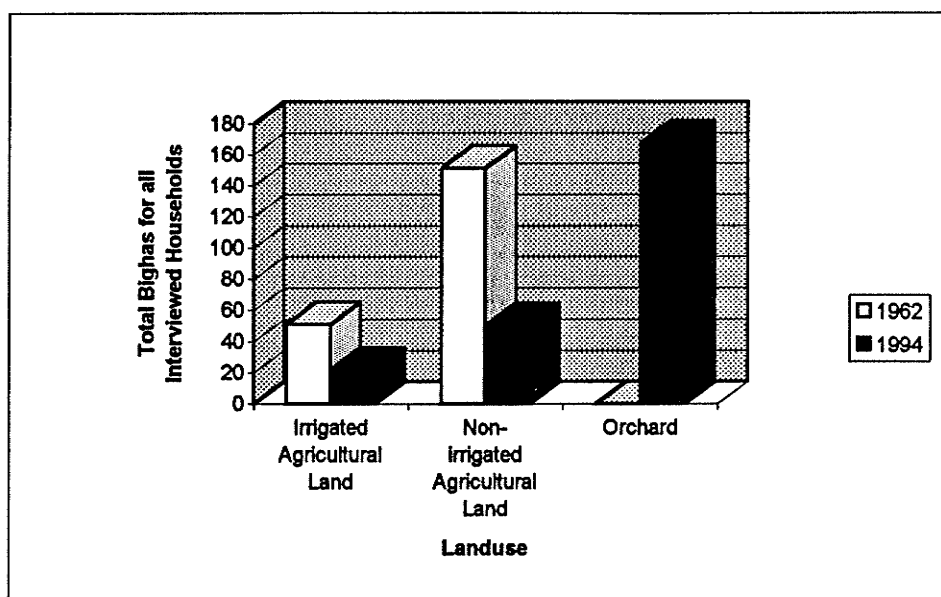


Figure 10. Change in landuse between 1962 and 1994, Goshal. Total represents the summation of the amount held by all interviewed households in 1962 and 1994. n=19. (Source: Household interviews)

Note: 12 bigha=1ha.

Land classed as orchard may still be used for growing crops until orchard canopy closes.

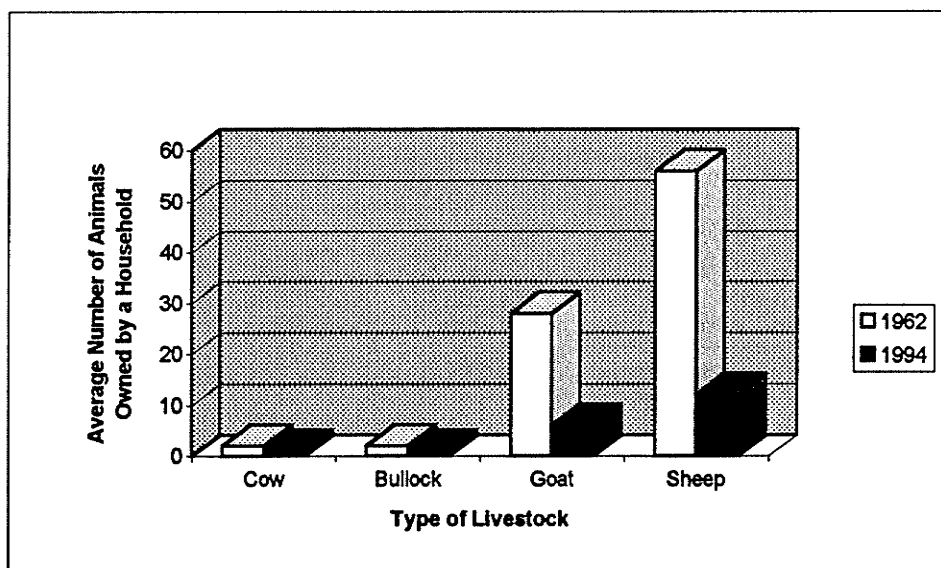


Figure 11. Change in animal ownership between 1962 and 1994, Goshal. Total represents the average held by all interviewed households in 1962 and 1994. n=19. (Source: Household interviews)

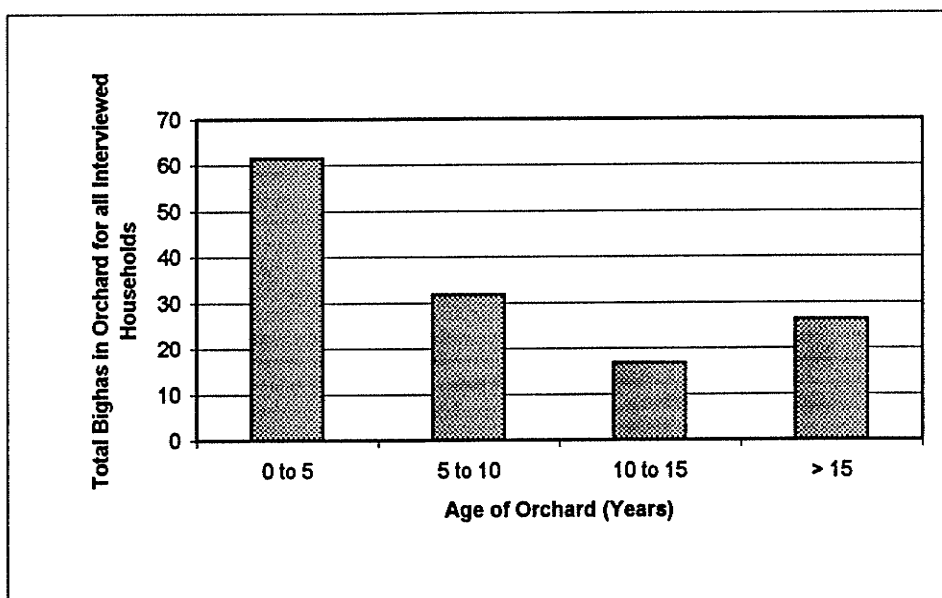


Figure 12. Age distribution of orchards, Goshal. Total represents the summation of the amount held by all interviewed households in 1994. n=19. (Source: Household Interviews)

Note: 12 bigha = 1 ha.

Land classed as orchard may still be used for growing crops until orchard canopy closes.

land has decreased from 151 to 50 *bigha*, while the orchard has increased from zero to 167 *bigha*.

One qualifier should be made for these figures. Once irrigated land is planted to orchard it can no longer be irrigated and therefore cannot produce rice, however, on non-irrigated land planted with orchards, it is still possible to produce the majority of subsistence crops (corn, barley, wheat, millets, beans). Figure 12 indicates that the shift to orchards is a relatively recent activity as the majority of the orchards have been established within the last 5 years, except for orchard established on *natour* land received in the early 1970's. This land was often of poor quality, therefore households converted this land directly into orchards. Overall, a great deal of land is being converted to orchard, but since the majority of the orchards are young the land is still being utilized to grow subsistence crops.

At the same time, as noted in the general survey, the number of animals owned by a household in the village has been decreasing as is shown in Figure 11. On average, a Goshal household presently (1994) owns 1 cow and bullock as compared to 2 in 1962, while the ownership of goats has decrease from 27 to 6, and decreased from 55 to 11 sheep per household. The overall pattern revealed in the household surveys is an increase in the establishment of orchards, especially in the last 5 years, and a decrease in the number of animals owned by Goshal households. The observed change in the number of new orchards, the survey with village elders and headmen, and a the detailed household survey, all suggest that the local economy is in a process of change from a mixed agropastoral economy toward a horticultural economy based predominately on apple orchards.

In order to understand the decrease in the number of pastoral households and numbers of animals, consultants were asked why they felt that less households were engaged in the herding economy. The answers, summarized in Appendix C, reveal a number of different factors that make it difficult to pursue a herding livelihood in the Kulu Valley. The primary factors are the loss of grazing land due to The *Natour* Lands Act, and the lack of grazing land in the winter due to Forest Department closure of winter grazing permits in order to establish plantations. An equally important reason for leaving

herding, however, can be attributed to the impression by consultants that orcharding is less work and provides a better livelihood. Another important reason why some pastoralists quit herding is due to personal emergencies. In one case the father became sick and the household was required to sell all its animals to pay the hospital bills. The decrease in herding is, therefore, on account of a number of different reasons. However, as it becomes more difficult to pursue a herding livelihood, and more attractive to engage in orcharding, pastoralists convert their capital in animals into orchards. They feel that this will provide a more secure future for their children as they only see herding becoming more and more difficult in the future. As more households change from herding to orcharding, this changes the interests of villages in the forest resource and the social relations which influence how the forest resource is shared between pastoralists and agriculturists.

As orcharding increases in the Kulu Valley the orchards move onto land previously used for grazing during the migration cycle of pastoralists. In the past, when pastoralists moved their herds from winter to summer grazing areas, and vice versa, they utilized grazing lands which surrounded villages in exchange for providing manure for the agricultural fields. As all villages contained a pastoral component, and at some point in their migration cycle depended upon another village, there were social relations of exchange which solidified pastoral access to grazing lands while in transit. Currently, as villages abandon transhumance pastoralism in favour of horticulture, they are able to break the social relations of exchange which previously existed. A village which no longer contains a significant pastoral component is no longer obligated to allow pastoralists to graze sheep in their village grazing areas. As orchards move onto undemarcated protected forest land and are established on agricultural land, the damage to the trees from sheep and goats becomes more costly to the villagers pursuing a horticultural economy. The interest of the emergent horticultural villages thus becomes the exclusion of sheep and goats from their village lands and forests to protect their orchards and to favour the establishment of tree plantations. This is pursued in conjunction with the Forest Department as villages will ask the Forest Department to establish tree plantations within their village forest areas and exclude pastoralists from those lands.

As the village economy changes from mixed agropastoral to horticultural economy, it changes the interests of the village in forest lands. When the number of pastoral families in a village decreases, it reduces the pastoral interest and social obligations of a village to other village pastoralists. The new horticultural and forest interests of a village are established by extending their property rights over forest areas in conjunction with the Forest Department which results in a decrease in available grazing land. The Forest Department is able to establish a plantation and close a grazing area in a relatively short period of time. A pastoralist has to sell a herd and establish an orchard which may take up to ten years. In the short term, as pastoralists adjust to the changing regional economy, the remaining grazing lands are experiencing heavy grazing pressure and degradation. This brings pastoralists into a conflict with both the horticultural villages and the Forest Department. The outcome of changing village interests, and their translation into property rights, is a decrease in the number of village households which pursue a pastoral livelihood in the Kulu Valley.

5.5 Summary

There are a number of different groups who utilize the grazing area of the study villages and who can be considered as contemporary pastoralists of the Kulu Valley. Although village agriculturists raise livestock they are not considered pastoralists as they do not focus on livestock production. The predominate village group who specializes in livestock production and utilizes village grazing areas are village pastoralists. The other pastoral group utilizing village grazing areas is the Gujjars. While Gaddis have utilized the village grazing areas in the past, they did not pass through the study area during the year of the study and are, for that reason, not included in this study.

The pastoral groups utilize a seasonal migration to fully utilize the regional grazing areas and to allow the pastures a period of rest. They also follow a number of management rules which allow them to gain access to a grazing resource and exclude other users. The pastoral management system contains both knowledge about biological management and social arrangements by which access to the grazing areas are regulated. The number of animals kept by herders is limited by the lack of feed available in the winter

grazing areas. In general, pastoralists feel that the village and summer grazing areas are under-utilized while the winter area is over-utilized. The winter grazing areas are also shrinking as villages encroach onto forest land to establish orchards, and as the Forest Department closes forest areas to establish timber plantations. The effect of these multiple changes is a reduction in the number of village pastoralists.

Chapter 6 begins by discussing how pastoralists interact with the state and village agriculturists. It emphasizes how conflicts occur over natural resources, how pastoralists can resist action taken by the state which limits their access to the grazing areas, and finally, how pastoralists have attempted to adapt to new realities. The final chapter concludes with a summary of the literature, and results, and an examination of how the objectives of the study are met as well as some recommendations for natural resources management policy which emerge from this study.



Plate 5. Village pastoralist's herd of sheep and goats crossing Rohtang pass from Beas river valley to Lahul (4 000 m).



Plate 6. Gujar encampment in upper forest meadow -upper *thach* - (about 2 000 m)

Chapter 6

"Getting a Living": Interactions in the Management of the Kulu Valley Commons

They clap in gaol, with threats most cruel,
Poor folk who gather wood for fuel;
But let rich loggers go scot free
Who fell and steal the living tree¹⁵

6.1 Overview

This chapter begins with a discussion of the interactions which occurred between user-groups of the study and user-groups and the state. The main interactions between the different actors are conflict and resistance as each tries to maintain access to resources. In addition, as pastoralists lose access to grazing resources through the restructuring of social relations over the grazing commons, pastoralists are forced to change their pastoral management system. After a general discussion of interactions, the chapter will directly discuss how this study meets the objectives outlined in Chapter 1. The chapter concludes with recommendations derived from the study for sustainable natural resources management policy.

6.2 *Interactions in the Kulu Valley Commons*

The Kulu Valley commons is a nexus of competing and complementary interests between the state and local interests and between different local user-groups. The intersection of complementary interests leads to alliances while competing interests lead to conflict and resistance. These conflicts and alliances are not static but are dynamic and reconfigured as outside influences, such as the market, change the interests held by the state and local collectives. Interests in grazing resources are translated into claims through property rights and institutions. The interest of the state in managing and appropriating the benefits of forest resources, including grazing areas, was instigated in law through the process of forest settlement in the 19th century. The interests of local collectives are translated through a system of customary property rights, social relations and institutions. Conflict between law and custom occurs at the local level due to

¹⁵ Robert Chambers as cited in Peluso (1992:17)

different interests of collectives in forest resources. The interests of village sub-groups are made into law through the formation of alliances with the state and the subsequent emergence of new property rights arrangements. Village pastoralists, with an identifiable interest in forest and grazing resources, are in relationships of conflict with the state and agriculturists, resistance against the state, and, are in a process of change as the market continually transforms production strategies of the Kulu Valley.

i Conflict

At the village and regional level, the predominant conflict is between pastoralists and agriculturists. Pastoralists prefer an open forest while agriculturists favour a "dark," or closed forest. An open forest is characterized as a mosaic of open canopy forest, which allows light to penetrate the forest and grass to grow creating forest meadows. A closed forest favours the production of trees and tree products. Although different interests are represented by agriculturists and pastoralists, customary institutions, such as the *mimbers*, give both groups a voice in village negotiations and in influencing how forest lands are to be utilized. Agricultural and pastoral livelihoods are also complementary at points, binding agriculturists and pastoralists in a web of social relations within the village and between different villages.

An interesting customary practice, revealing the intertwined interests of agriculturists and pastoralists, is the lopping of the conifer trees for bedding (*rakti*). The lopping of conifer trees opens the forest and allows grass to grow, but also permits a high tree count per unit area. Lopping allows a tree to grow, albeit at a reduced rate, builds up the long term wood stock, creates forest meadows and supplies firewood. This form of forest management meets the agriculturists' needs of bedding and fertilizer for the fields, produces a wood stock necessary for all villagers, and opens up the forest which meets the pasture need of village pastoralists. Village management of forest resources, through customary institutions and practices, allows different interests a voice in negotiation and resolves conflict through compromise on wood productivity and a mixed use of village forest lands.

The other major conflict is between the pastoralists and the state, represented by the Forest Department. The source of this conflict is similar to conflict between pastoralists and agriculturists where different interests in forest resources exist. Interests of the pastoralists has been described above. The primary interest of the state is the maximum sustainable production of timber. The Forest Department is responsible to manage the forest in a way which maximizes timber production. The interests of the Forest Department and pastoralists are thus diametrically opposed. One local forest official describes a *thach* as a place "...where nothing grows, well at least no trees grow." This conflict is particularly bitter from the pastoralists point of view as they feel they have no say in Forest Department decisions. The Forest Department can decide to establish tree plantations and close grazing areas without consulting pastoralists. Pastoralists understandably feel they are in conflict with the Forest Department, as there is no mechanism which allows them to negotiate with the Forest Department. Pastoralists have no voice in state institutions which close their grazing areas, in effect cutting off a livelihood pursuit which their families have followed for generations.

ii Resistance

Action taken by pastoralists contravening state regulations is often taken as proof that pastoralists cannot manage grazing commons. However, this study recognizes that such actions may represent customary forms of forest management, conflicts between customary and state systems of forest management, or direct challenges to the authority of the state to regulate village resources. As the state tries to translate its interests in forest resources—through property rights, alliances with village sub-groups, and a system of state management—agriculturists and pastoralists alike are resisting state appropriation of and the right to manage these resources. Resistance against state management of forest resources can take a myriad of forms.

One of the most innovative examples of resistance is against the regulation in the settlement report which denies pastoralists any ability to maintain forest meadows through the use of fire or cutting of shrubs. As the number of sheep declines, and the pressure on a grazing area is reduced, shrubs, and eventually trees, become established. Since

pastoralists are not permitted to cut the shrubs, they are forced to find other means. Two strategies for clearing or maintaining a forest meadow without burning or cutting, have been mentioned by pastoralists. If shrubs become established in a forest meadow it is possible to clear the shrubs by allowing goats to overgraze the meadow. Overgrazing kills the shrubs and allows grass to become reestablished. A forest meadow, no longer utilized by village pastoralists can also be maintained by renting it to other pastoralists, such as Gujjars. This allows the village to maintain grazing areas within the forest without ceding their customary grazing right. The forest settlement of the 19th Century attempted to limit the ability of pastoralists and villages to manage grass lands within the forest by restricting the use of fire and cutting of shrub. Pastoralists and villagers have now found ways to resist this regulation through the use of goats and by renting the grasslands to other pastoralists. Actions, taken by villagers and pastoralists, are not always due to an inability to manage grazing resources but represent a different vision of management for, and interests in, forest and grazing commons.

iii Change

The use of the pastoral commons in the Kulu Valley is one strategy utilized by the villages which complements the agricultural activities of other villagers and provides a significant source of capital and income for the region. Management of grazing commons is based upon a seasonal grazing cycle which is culturally encoded in management decisions and customary rules attempting to maximize animal productivity while minimizing damage to the grazing resource. While the government officially manages the grazing resource, pastoralists have developed a parallel system of customary rules which also influences the management of the Kulu Valley grazing commons. The emergence of a horticultural economy changes village interests in forest and grazing resources, as well as the customary set of social relations and property rights. This is reflected in the visibly changing landscape of the Kulu Valley, and surveys undertaken with village elders and households demonstrate that the number of pastoral families has decreased while the number of families with orchards has increased. As it becomes harder to pursue a pastoral livelihood, pastoralists convert their capital in animals into orchards, resulting in a positive

feedback loop which favours a horticultural economy over a pastoral economy. As pastoralists of Goshal and Chachoga confront the changing property rights regimes in law and custom, and the changing set of social relations, their actions are evidence not of a transition from the traditional to modern, but of a process of negotiation. The response of village pastoralists to the emerging horticultural economy, and the continued effort by the state to control forest resources, contains elements of conflict, resistance and change as they seek a way in which to continue their pastoral livelihood in the Kulu Valley.

6.3 Conclusions

The overall purpose of this study is to document the ability of a local collective (village) to influence the management of the Kulu Valley commons within a framework of state ownership and law in the State of Himachal Pradesh, India. In order to do this, four objectives were delineated to provide the structure of this practicum. This section is structured around the first four objectives, while the final objective pertaining to recommendations based on the research is presented in section 6.4.

i Property Rights Regimes in Law and Custom

The first objective of this study is to identify the property rights regimes in law (*de jure* rights) and custom (*de facto* rights), if any, under which natural resources are presently held in a sub-watershed of the Beas River. The system of law and its formulation, according to written documents, is presented in section 3.2 while the results from the fieldwork is presented in Chapter 4.

The literature indicates that the system of law was developed during the colonial period when the British government undertook both revenue and forest settlements. The revenue settlement established a private right (*res privata*) in land for agricultural land and a crown right (*res publica*) in land for forests. The colonial system of property rights in India was part of a larger process which began with the enclosure movement in England and carried abroad during the formation of a world economy through colonialism. This process weakened the commons systems of natural resources management historically based upon local control of resources, reciprocal exchange relationships among villagers

and between villages, and access to indigenous institutions which negotiated how resources would be managed. Enclosure restricted local access to resources through the formation of private rights in land, restructuring the social relations over land to a system based upon individual accumulation, and by limiting access to the resource institutions to landholders (private property) and state bureaucracies, such as the Forest Department (state property). The result of the enclosure movement in India was the shifting of control over resource management from local villages to the state. The result was the appropriation by colonial and national elites of both the resource, as well as the ability of local user-groups to negotiate among and between themselves about how a resource was to be managed.

Research carried out during fieldwork in the summer of 1994 reveals that property rights at the local level are more complex than those written in law. Indigenous systems of resources management depend upon flexible and "fuzzy" property rights which emerge from an examination of the emic categories of land-use. In the villages of the study ten emic land-use categories have been identified: irrigated agricultural land; non-irrigated agricultural land; redistributed agricultural land; lineage based grazing land; lineage based haying areas; forest grazing; alpine grazing; undemarcated protected forest; demarcated protected forest; reserved forest. Agricultural land, as expected, was considered to be private, as an individual or family held the full bundle of property rights. Forest lands in general are state lands managed by the Forest Department. However, there are customary rights over the resources of forest lands which do not always correspond with the usufructuary rights as established in law by the forest settlement.

In law, all rights to forest resources are usufructuary rights of access while the forest department maintains the rights of exclusion, management and alienation. Forest rights are individual usufructuary rights which may be practiced in a demarcated village forest area. The extent of these rights are determined by the forest settlement which recorded rights on the basis of customary use of the forest. In order to hold an individual usufructuary right to a village forest area, it is necessary to own land in the village as forest rights are appended to land ownership. As the rights are individual, the village as a whole is denied the ability to regulate the use of the forest area as the responsibility for

regulation was transferred to the Forest Department. Although the ability of the village to manage a village forest area is limited, this research indicates that villages do indeed claim customary rights of exclusion and management which influence the management of non-timber resources in the forest area.

The ability of a user-group to manage resources depends upon the existence of institutions by which collective negotiations can occur to determine the rules of use, rules of access as well as management decisions. In the study villages there are four institutions which influence how village resources are utilized; the family or lineage group, *mimbers*, the *Mahila Mandal*, and the *Panchayat*.

The family is most influential in determining how private agricultural lands are managed. In the past the joint family was the predominate institution which managed agricultural land and distributed it across generations. Land was held by joint families in an effort to reduce the fragmentation of agricultural land into small plots. This practice is no longer prevalent in the study villages due to The Natour Lands Act which redistributed 'wastelands' (UPF lands) to landless or land poor families. In order to take advantage of this process, some joint families distributed their land among individuals within the family in order to qualify for land redistribution.

The other land-use categories over which the family has influence are lineage based grazing (*kuth*) and haying (*fath*) lands. Both of these land types are managed by a lineage group and the descendants of the original right holder at the time of settlement. Unlike agricultural land, this land was not divided and has continued in the ownership of the kin group. The lineage as a group determines the rules of use for *kuth* and *fath*. In the past, however, *fath* was also managed under a set of village level rules which determined the opening date for grass cutting. The tenure arrangements for both of these land-use types is now in a process of change. *Kuth* land is now being divided amongst individuals of the lineage and planted to apple trees. *Fath* land is presently less regulated than in the past as people are obtaining grass from *chait* land converted to orchard and the pressure for grass from *fath* land has declined. This demonstrates that the use of resources and the property rights structure in custom is negotiable within the family institution. This provides flexibility in order that land may be held under tenure arrangements which suit the present

circumstances within which the members of the family find themselves. At times it makes sense for resources to be held as common property, while at other times private property makes more sense. In custom, the important factor is that individuals have access to the institution through which these decisions are made.

The *mimbers* and *Mahila Mandal* are institutions which provide a structure for decisions to be made at the village level. The *mimbers* are an indigenous village institution which derives its authority from the people of the village, unlike the formal village structure of the *panchayat* which derives its authority from the state. The *mimbers* are made up of nine village men, chosen during a religious festival which occurs at the same time as when village pastoralists travel through the village on route to the high pastures and during the return trip. Over the years, the authority of the *mimbers* to manage forest and pasture resources was greatly curtailed due to the forest settlement which vested forest management in the Forest Department. Although the *mimbers* have been weakened, they have not completely given up all responsibility for resource management. Presently, the greatest influence of the *mimbers* in forest management is the decision-making power they hold over determining access to village forest resources. *Mimbers* will negotiate with other villages for access to another village's forest resources and are approached for permission to allow other villages access to their own village resources. For example, when *Gujjars* would like to utilize the village forest areas for grazing their water buffalo, it is a *mimber* who undertakes the negotiations.

The *Mahila Mandal* is a non-indigenous women's organization originally organized by the state. Although its original purpose was not the management of resources, women have begun to take on this role in order to stop the poaching of village trees (see for example Davidson-Hunt 1995a,b). The *Mahila Mandal* also began to set rules which prevent the cutting of tree branches for bedding within a certain distance of the village. As women become more active in policing these rules, the Forest Department has promised limited support in enforcing their decisions and actions. Although the ability of village institutions to manage forest resources was severely curtailed by the forest settlement, the *mimbers* and *Mahila Mandal* are evidence of the ability of villages to take collective action in the management of village resources in spite of state law.

ii Resource Users of a Village Area

The second objective of the study is to identify the users of selected common property resources in a village area. Prior to the fieldwork, it had been anticipated that the common property resources to be studied would be irrigation systems, village commons made up of grazing land and scrub forest, and village forests. The original intention was to describe the common property system for the village forest. However, after gaining an understanding of the property rights in law and custom, it became apparent that village forest lands are made up of a multitude of different user-groups. Some of these user-groups are village women, village pastoralists, village herbalists, nomadic herb gatherers, the Forest Department, and poachers. Most of these user-groups have a complex system of access and use which is integrated with other user-groups. In addition, most groups do not meet all their needs from a spatially bounded common property resource. Rather, access to resources is distributed both spatially and temporally among a number of different user-groups. One of the resources, grazing resources, and its user-groups, pastoralists, was chosen as a case study for this research. Pastoralism is an interesting case study as it is a traditional land use which adds to the cultural diversity and the economic opportunities of the region, at a time when the local economic emphasis is shifting to non-traditional activities such as orchards.

The pastoral commons is constructed by a number of different spatially bounded common property resources spread across both village forest lands and the larger region. Within village lands, the pastoral commons includes lower forest meadows, upper forest meadows and alpine pastures. Within the region there are winter grazing grounds found in the area of Bilaspur and summer grazing grounds in the areas of Lahul and Spiti. The main organizing factor for utilizing these grazing areas is the change in elevation resulting in various resources being available throughout the year within different vertical zones. The main user-groups of these grazing grounds are village pastoralists, households which practice transhumance and maintain a residence in the village; Gujjars, semi-nomadic water buffalo herders; and, in some years Gaddis, semi-nomadic sheep and goat herders. In addition, forest meadows and alpine pastures contain medicinal herbs and spices which

are utilized by village medical specialists, villagers, and nomadic herb and essence gatherers.

It is apparent that the forest commons is utilized by a number of different collectives. Although access can be restricted to non-village residents, the commons system allows for other user-groups to have access to resources not utilized by the villagers in return for payments. Access to resources can be restricted both spatially and temporally. A user-group from outside the village may be given permission to utilize a resource in a particular area or during a particular time period. However, access must be negotiated by outside user-groups with the village. Although a commons may contain a number of different user-groups, it is not open-access as the use of the resource is managed by a complex system of rules.

iii Collective Management of the Grazing Commons

The third objective of the study is to describe the collective management of a common property resource, specifically the grazing commons, the results of which are presented in Chapter 5.

Management of the grazing commons is achieved by limiting access to grazing grounds and through rotational grazing. Although grazing grounds are not physically fenced they are socially enforced for fixed periods of times. Village pastoralists return to the same winter, summer and village grazing areas over the course of their annual migration. Once they arrive at the grazing area, it is understood through custom that they have the right to exclude other pastoral groups unless an alternative arrangement is negotiated. Within the village grazing areas, village pastoralists are divided into a number of different herding groups. Forest and alpine pastures are also divided into a number of named grazing areas. Herding groups compete between each other to obtain access to the best grazing areas, but access is determined on the basis of first comer's rights. The group which arrives first is allowed to exclude the other herding groups for the remainder of that grazing period.

Although grazing commons are not owned by any pastoral group, neither can they be considered an open-access resource. Rather, grazing commons represent an alternative

notion of possession bound by a complex web of use rights which limit the access to a bounded resource to specific user-groups during specified time periods. Neither are grazing commons private, as the right to exclude only pertains to the grazing period and a variety of different user-groups hold a right to use the resources of an area. For example, the village grazing area is closed to grass cutting in the spring before the pastoralists arrive. After the pastoralists leave, and before they return in the fall, there are two grass cutting periods during which all villagers hold the right to cut grass. The grazing commons is thus distributed among various user-groups of the village and is arranged by distributing rights temporally as well as spatially. The shepherds follow a set of formal rules laid out in the forest settlement report and are regulated by permits which limit the number of animals they can keep, determine the general dates of when they can move their herds, and specify where they hold rights to graze their herds. They also follow a set of informal rules which are utilized to determine when the herd should be moved between grazing areas, rules of access to grazing grounds, and the number of sheep which can be kept on a grazing area. The forest and grazing resources are managed both by the formal state system and the informal system of management which determines access and herd size and which operates within the system of law established by the state, but largely unknown to the state. Unsustainable resource management may be the result of the conflict between these two systems and the shortage of winter grazing areas and not due to the inherent unsustainability of either.

The rotational management of grazing grounds is based upon the seasonal migration of village pastoralists and other pastoral groups such as water buffalo herders. The seasonal migration of pastoralists serves the function of resting the grazing grounds as well as allowing other user-groups to utilize the resources of forest meadows and alpine pastures. The migration is necessary because it is difficult to keep sheep on the high alpine pastures during the winter, and therefore pastoralists move their herds to lower grazing lands for the winter. The timing of movement is based upon a number of conditions. The major constraint to herd movement is snow. Snow delays the movement to the high pastures in the spring and summer and hastens the return in the fall. Even when the pasture is clear of snow, it is necessary to wait for the pasture to dry out so that the

animals do not turn the pasture into mud, as well as prevent animals from overeating the spring vegetative flush which can cause bloating. It is also necessary to time the return from the high alpine pastures in Lahual or Spiti before the high passes are closed with snow.

The other major management decision is whether to invest time and labour into rotational grazing or to allow the animals to free range. Village pastoralists only invest time and labour into rotational grazing when there is a shortage of pasture, such as occurs in the winter grazing grounds. The reason given by the village pastoralists for this decision is that there is more pasture than needed in the village and summer grazing areas, therefore it is possible to utilize less shepherds by allowing the animals to free range. Due to the abundance of pasture free range grazing does not degrade the pasture. In the winter grazing ground, however, there is a shortage of pasture. By utilizing more time and labour through increasing the number of shepherds, it is possible to keep more sheep than would be possible in free range grazing. Pastoralists also make decisions when to rest certain pasture areas by noting the plant composition of the pasture. Decisions made by the shepherds of this study relating to herd composition, herd size, type of grazing, and provision of supplementary forage from trees, are management decisions regularly made to obtain maximum animal production and sustainable use of grazing resources.

In conclusion, the pastoral management system appears to contain a number of characteristics of a sustainable land use activity. In the village and summer grazing areas, pasture lands do not seem to be overgrazed. In addition, the system makes ecological sense on a regional scale as pastoralists are one of the few user-groups of the alpine pasture vegetative zone. Economically, the system appears sustainable and contributes to the regional economy. However, until a detailed economic study is undertaken, it is not possible to say with confidence that the pastoral system is economically sustainable. The pastoral system is also socially sustainable. It is the preferred way of life for some, and provides villagers, especially Rajputs, with a sense of cultural identity, pride, and male bonding. It is difficult to estimate the value of this feeling of being herders or descendents of herders and of belonging to a place and to a way of life. This "sense of place" or of

being "rooted" is an important element of social sustainability according to village consultants.

The weak link in the sustainability of the pastoral system is in the overwintering areas. It is in this area where the most conflict occurs and the pastoral system is stressed. It is interesting to note that the system contains a cultural adaptation which reduces the number of animals before the herds move to the overwintering areas. In the fall, during the return migration, the festival of *Dani Deo* (god of the shepherds) is held when the pastoralists pass through the village. During this festival, all the Rajput men gather at a sacred area in the high forest, discuss village matters, chose new *mimbers* as necessary, and slaughter sheep and goats for local consumption. As well the herds are culled, and the sheep and goats are sold on the market. This is the best time to sell the animals as they are in their peak condition after summer grazing. *Dani Deo* is thought to provide for the ritual protection of the herd for the coming year. The ecological significance of *Dani Deo* is that the herds are reduced to near the carrying capacity of the winter grazing areas. Thus the festival provides a link between the social and ecological systems (Berkes and Folke 1994), and a means for adjusting the herd size.

iv Interactions over Resource Use in the Kulu Valley

The fourth objective of the study is to identify interactions over resource use among collectives, and between collectives and the state; it is addressed in the discussion found in section 6.2. There are many interactions occurring over resource use; in the present study, the discussion is restricted to the examination of one group of interactions--how pastoralists interact with agriculturists and with the state. These interactions have been classified on the basis of conflict, resistance and change.

The arena of most conflict and resistance occurs around winter grazing lands where pasture is most limited. This is an area of conflict as villages which hold rights to these forest lands are dependent upon orcharding as the main production activity. As the number of pastoralists in these villages decreases, reciprocal relations between pastoralists of different villages become less important to maintain. At the same time, however, shepherds also hold grazing rights to these same lands under the forest settlement report.

The only way this right can be restricted is by closing a forest through the establishment of a new plantation. A new relationship between the Forest Department and orcharding villages is emerging whereby it is seen to be in both the interests of the Forest Department and village orcharding factions to establish plantations, and therefore close the grazing lands to village pastoralists.

This enclosure of grazing lands to village pastoralists generates a number of different responses by pastoralists of the study villages. Some of these, such as directing goats into new plantations in order to destroy the plantation could be characterized as acts of resistance. Others, such as buying land in villages where winter grazing is important in order to obtain villager rights to these forests, are not so easily classified. These different actions do, however, represent an important point about indigenous systems of resource management. The structure of the shepherd cycle was based upon a spatial and temporal diversity of resources found at different elevations within the mountain environment. Bounded units of land were distributed spatially and temporally between a number of different groups. There was, then, an integrated system of use rights spread across both space and time. As the commercial operation of apple orchards becomes established within winter grazing areas, village interests in the forest resources of this area change. Although winter grazing land only represents a portion of the village pastoralist cycle, without this segment the whole cycle becomes less tenable, resulting in a decrease in the number of pastoral families. When the Forest Department responds to the interests of the orcharding villages and establishes plantations, it changes the structure of forest rights. By limiting winter grazing it diminishes the ability of village pastoralists to pursue pastoral livelihoods. The establishment, by the Forest Department, of clear village rights for one village, and one specific interest within the village, orchards, transforms the structure of social relations over forest resources between villages and between groups within villages.

The findings of this study suggest that a clear definition of village rights may be a simplistic solution for what is an exceedingly complex system of use rights in the Kulu Valley. The indigenous system of resource management is based on social relations between a number of different groups for spatially bounded forest resources. The use of forests by these different groups is organized both spatially and temporally. The essence

of the commons is a system of reciprocal social relations allowing for a diversity of interests to negotiate access to forest resources while maintaining access to a means of production. When village pastoralists were an integral social and economic component of all villages, they had access to the institutions in which negotiations over resources occurred which maintained their access to the grazing land of the forest. As the commercial system of orchards became established in some villages, it began to break down the set of reciprocal social relations between villages and between agriculturists and pastoralists. The position of the Forest Department is in favour of the commercial enterprise of orchards and opposed to the traditional agropastoral system. This is a form of enclosure as access to the commons is restricted to a certain group of villagers with commercial interests in orchards, as well as access given to the Forest Department with its commercial interests in timber.

In this case study, clearer village property rights have not been found to lead directly to the maintenance of indigenous systems of resources management. Part of the difficulty is that indigenous systems of management often utilize spatial and temporal diversity but are not confined to spatially defined boundaries. Property rights in land, established on the basis of spatial boundaries, may not be commensurable with commons systems of resources management. As shown in the study, there is a tension between law and custom. During the colonial period the state was engaged in a process of trying to simplify property rights. The rationale was that clear property rights led to more effective and efficient resource use. In spite of the forest and revenue settlements which occurred over one hundred years ago, a customary system of resource use rights has recreated a system of complex and "fuzzy" boundaries. That system is now changing due to the commercial system of apple production. The major finding from this study is that complex systems of resources use, based on a web of use rights and social relations, require more than the simple concept of private, state and village property rights. A rigid western system of property rights in land, be they defined in favour of the state, private, or village, all equally solve the collective management question. However, none of them are sufficient in creating the space and flexibility needed for indigenous common property systems of natural resources management.

6.4 Recommendations

The findings have implications for sustainable resource management, specifically as regards policy for local management of common property. The following recommendations for sustainable resource management are provided in response to the request by the Shastri Indo-Canadian Institute for projects to delineate the policy implications of their research.

1. Local/indigenous common property systems of resources management need to be based upon "fuzzy" and flexible property rights regimes. Western property rights regimes fix property rights in time and place. Therefore, property rights should not be codified in a manner that would interfere with the flexibility and adaptability inherent in indigenous resource management systems. Rather, management rights to resource areas should be spatially delimited for local villages allowing local control to evolve and to be fine tuned according to changing circumstances and priorities.
2. A process should be initiated by the Forest Department allowing customary resource user-groups of village forests a voice in the negotiations to rebuild a village forest management system. This system should emerge from negotiations, it should not be a system superimposed by the Forest Department, but be based upon power-sharing or a form of co-management.
3. A village resource management system should be established which allows village institutions to manage the forest and forest products. Local management rights should include the right to determine access and the right to have a say in the species composition of forest plantations.
4. This research has emphasized that common property systems emerge from the collective decisions people make on how to construct their social relations in regards to natural resources. However, local groups do not exist in isolation but are linked to the larger world economy and policies of nation states. This study suggests that further research should examine the role of commercialization and market forces in changing the individual incentive structures, and the structure of social relations which form the basis of many indigenous common property systems.

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APPENDICES

APPENDIX A

Tentative Summary of Questions to Investigate as Part of Common Property Analysis Framework. (Drawn from Berkes and Folke 1994)

General Objectives

- How does the local system manage ecosystem processes and species/population?
- How does the local system maintain ecosystem resilience in the face of perturbations?
- What are the viable combinations of property rights arrangements, institutions and knowledge systems which accomplishes the above?

Resource Users and their Technology

- Who are the users of a particular study area?
- What resources do they use?
- Can the users be characterized as user-groups or user-communities?
- What are the positions held?
- What are the characteristics of communities of users in terms of numbers, homogeneity, ethnicity and general socioeconomic conditions?
- What technologies are used and by whom?

Local Knowledge and Traditional Knowledge Systems

- What local knowledge do they possess in relation to the resource base?
- Is there much of culturally transmitted traditional knowledge?
- Are there traditional management systems?
- Do they have a distinct system of knowledge or worldview?

Property Rights

- What are the major resources and who holds the property rights to them?
- What is the nature of the land (or water) tenure and what rights are involved?
- What are the relevant rules for resource use, especially regarding access?
- Who makes the rules, especially regarding collective action?
- Who enforces the rules and how?
- Are there sanctions and how are they structured (graduated or not)?

APPENDIX B

Household Interview Schedule

A. General Information.

Village: _____ Date: _____

Name of Consultant: _____

Caste: _____ Male/Female: _____ Marital Status: _____

Land held by Joint or single family?: _____

If Joint, name of head of other family: _____

Family Composition (kinship chart of household):

B. Household Access to *Kuth* and *Fath*.

Land-Use Type	Name of <i>Kuth</i> / <i>Fath</i>	Current Use	Use at <i>Katbat</i> ¹
<i>Kuth</i>			
<i>Fath</i>			

¹ Katbat, 1962, was used as a 'marker' in interviews. This corresponded to the time of the Indo-China war which was an event remembered by people of the area.

C. Household Land Holdings

Land-use Type	Amount (<i>higha</i>)	Current Land-use	Land-use at <i>Katbat</i>
<i>Ropa</i>			
<i>Chait</i>			
Orchard			
<i>Natour</i>			

D. Household Animal Ownership

Animal Type	Current Amount	Amount at <i>Katbat</i>
Cow		
Bullock		
Calf		
Goat		
Sheep		
Horse		

E. Change and Forest Use.

1. If Consultant has orchard:

a) Do you plan to convert all your land to orchard?

b) How does the change to orchard effect your use of the forest?

2. If consultant has less animals than at *Katbat*:

a) Why have you reduced the number of sheep and goats you own?

b)How does a reduced number of sheep and goats effect forest use?

3. Do you buy more food products at the bazaar than at *Katbat*?

4. Do you plan to keep some land aside to produce your own food? Why?

APPENDIX C

Results of Household Survey - Goshal

A. General Household Information.

Household ²	Caste ³	F/M	Marital Status ⁴	Joint Family	Other head of Household	Family Composition ⁵
Devi Singh	R	M	M	Yes	Kurm Dut	w,sn,d,d,sn/sn, dl,gs,gd,gs,d,s,dl,s,d,m
Dolat Ram	R	M	M	No	n.a.	w,sn
Dina Nath	R	M	WM	No	n.a.	w,sn,d,d
Dile Ram	R	M	M	No	n.a.	w,sn,dl,gs,gs,gs,sn,sn,d,fb
Amar Chand	S	M	M	No	n.a.	w,d,d,d,sn
Rajesh	R	M	M	No	n.a.	w,sn,dl,gs,gd,d,sn
Chaman	R	M	M	No	n.a.	w,sn,d,sn,sn
Lal Chand	R	M	M	No	n.a.	w,sn,d,sn
Chuni Lal	R	M	M	No	n.a.	w,sn,dl,gs,gs,gs,sn,dl,d
Mehar Chand	S	M	M	No	n.a.	w,sn,d,sn,d,m
Chander Jet	S	M	M	No	n.a.	w,sn,dl,sn,d,sn,sn, sn
Tikum Ram	S	M	M	No	n.a.	w,d
Subash Chand	S	M	M	No	n.a.	w,d,d,sn,m
Narender	S	M	M	No	n.a.	w,sn,dl,gd,d,d,sn
Keshu	S	M	M	No	n.a.	w,sn,dl,gs,gd,gd,d, d,sn
Panalal	R	M	W	No	n.a.	n.a.
Mohan Lal	R	M	M	No	n.a.	w,sn,dl,gd,sn,d
Shyam Chand	R	M	M	No	n.a.	w,sn,dl,gd,gs,gd, sn,d,m
Ram Chand	R	M	M	No	n.a.	w,d,sn,d,f,m

² Name of head of household. Names have been changed to respect confidentiality of consultant

³ R=Rajput; S=Scheduled Caste

⁴ M=Married; S=Single; W=Widowed; WM=Widowed and Remarried.

⁵ Refers to the composition of the household which utilizes the land and animals as a unit. / indicates a joint family and separates the composition of each family. Head of household interviewed, male = ego; w=wife; m=mother; f=father; b=brother; s=sister; d=daughter; sn=son; gd=granddaughter; gs=grandson; bl=brother-in-law; sl=sister-in-law; dl=daughter-in-law; ml=mother-in-law; fb=father's brother.

B. Household Access to *Kuth* and *Fath*

Household	<i>Kuth</i>	Use at <i>Katbat</i>	Current Use	<i>Fath</i>	Use at <i>Katbat</i>	Current Use
Devi Singh	No	n.a.	n.a.	Y	Hay	Hay
Dolat Ram	Yes	Cultivate	Graze	Yes	Hay	Hay
Dina Nath	Yes	Cultivate	Trees, Graze	Yes	Hay	Hay
Dile Ram	Yes	Cultivate	Trees, Graze	Yes	Hay	Hay
Amar Chand	Yes	Cultivate	Orchard	No	n.a.	n.a.
Rajesh	Yes	Cultivate	Orchard	Yes	Hay	Hay
Chaman	Yes	Graze	Trees	Yes	Hay	Hay
Lal Chand	Yes	Cultivate	Graze	Yes	Hay	Orchard, Encroached
Chuni Lal	Yes	Trees	Trees	Yes	Hay	Hay
Mehar Chand	Yes	Cultivate	Orchard Cultivate	No	n.a.	n.a.
Chander Jet	Yes	Trees	Trees	No	n.a.	n.a.
Tikum Ram	Yes	Cultivate	Orchard Cultivate	No	n.a.	n.a.
Subash Chand	Yes	Trees Graze	Trees Graze	No	n.a.	n.a.
Narender	Yes	Trees	Trees	No	n.a.	n.a.
Keshu	Yes	Cultivate	Orchard	No	n.a.	n.a.
Panalal	Yes	Cultivate	Grazing	Yes	Hay	Hay
Mohan Lal	No	Sold	Sold	Yes	Hay	Hay
Shyam Chand	Yes	Trees	Trees	Yes	Hay	Does not use
Ram Chand	Yes	Trees Graze	Orchard	Yes	Hay	Hay

C. Household Land Holdings

Household	Irrigated Land- <i>Ropa</i> ⁶ (<i>bigha</i>) ⁷		Non-irrigated Land- <i>Chait</i> (<i>bigha</i>)		Orchard Land (<i>bigha</i>)		<i>Natour</i> Land (<i>bigha</i>)	
	1962	1994	1962	1994	1962	1994	1962	1994
Devi Singh	9	0	38	19	0	20	0	13.0
Dolat Ram	1	1	5	5	0	2.5	0	2.5
Dina Nath	3	3	8	2	0	13	0	7.0
Dile Ram	2.5	0	15	0	0	17.5	0	0
Amar Chand	1	1	2	2	0	0.75	0	15.0
Rajesh	2	1.5	9	0	0	9	0	0
Chaman	4.5	4.5	20	5	0	15	0	0
Lal Chand	2	0	2	0	0	4	0	0
Chuni Lal	5	0	4	0	0	14	0	5.0
Mehar Chand	3	2	10	7.5	0	11	0	5.0
Chander Jet	0	0	2.75	0	0	3	0	0.25
Tikum Ram	1	0	2	0	0	3.25	0	0.75
Subash Chand	2.5	0	4	0.5	0	7.5	0	15.0
Narender	1.5	1.5	2.5	2.5	0	5	0	5.0
Keshu	2.5	1	3	3	0	8.25	0	4.25
Panalal	1	1	4	2.5	0	1.5	0	0
Mohan Lal	1.5	0.5	6	0	0	14	0	7.0
Shyam Chand	5	5	9	0	0	11.25	0	2.25
Ram Chand	3	0	5	1	0	7	0	0
Total	51	22	151.25	50	0	167.5	0	82
Average (n=19)	2.68	1.16	7.96	2.63	0	8.8	0	4.32

⁶ Irrigated and Non-irrigated agricultural land contain no orchard trees. Irrigated or non-irrigated agricultural land, upon which orchard trees have been established, and which may still be utilized to grow dryland crops has been classified as orchard on the assumption that it will eventually become only orchard.

⁷ Bigha is the local unit for land measurement. 12 bigha = 1 ha.

D. Household Animal Holdings

Household	Cow		Bullock		Calf		Goat		Sheep		Horse	
	'62	'94	'62	'94	'62	'94	'62	'94	'62	'94	'62	'94
Devi Singh	4	3	2	2	1	1	40	0	30	9	3	0
Dolat Ram	2	1	1	1	1	1	30	0	80	8	2	0
Dina Nath	4	2	2	1	n.a.	1	0	0	25	1	0	0
Dile Ram	3	1	2	1	n.a.	1	80	40	60	35	0	0
Amar Chand	1	0	2	1	n.a.		0	0	12	0	0	0
Rajesh	5	2	2	1	n.a.	1	80	0	80	1	0	0
Chaman	3	2	2	1	n.a.	3	20	0	30	0	0	0
Lal Chand	2	0	2	0	n.a.	1	20	0	50	4	0	0
Chuni Lal	2	1	2	1	2	1	20	0	70	0	1	0
Mehar Chand	3	1	2	1	n.a.	1	0	0	15	0	0	0
Chander Jet	1	1	2	0	n.a.	1	0	0	16	16	0	0
Tikum Ram	1	1	1	0	2	1	0	0	10	0	0	0
Subash Chand		1	0	0	n.a.	2	100	0	250	4	0	0
Narender	2	2	2	0	n.a.	2	0	0	40	0	0	0
Keshu	3	1	2	2	1	0	0	0	8	2	0	0
Panalal	3	0	2	0	n.a.		20	0	60	10	0	0
Mohan Lal	3	1	2	1	n.a.	1	80	30	150	90	5	3
Shyam Chand	2	1	2	1	n.a.	3	20	8	50	30	0	0
Ram Chand	1	0	2	1	1		20	40	20	10	0	0
Total	45	21	34	15	n.a.	21	530	118	1056	220	9	3
Average (n=19)	2.37	1.11	1.79	0.79	n.a.	1.11	27.9	6.21	55.6	11.6	0.47	0.16

E. Change and Forest Use

1. If Consultant has orchard:

a) Do you plan to convert all your land to orchard?

Yes - 13

No - 6

-5/6 of those who were not planning to convert all land to orchard distinguished between *chait* and *ropa*.

-They were planning to convert all *chait* to orchard but keep aside *ropa* for rice.

b) How does the change to orchard effect your use of the forest?

Use forest less for:

- Fuelwood (use tree prunings) - 13
- Hay (collect from under trees)- 13
- Bedding (utilize fallen leaves) - 11

-All respondents emphasized that the forest was still necessary as they could not meet all their needs for these products from the orchard.

-The amount of land/orchard that the respondent owned influenced how much of their needs could be met by the orchard.

2. If consultant has less animals than at *Kathat*:

a) Why have you reduced the number of sheep and goats you own?

- Orchard less work than shepharding	4
- <i>Natour</i> land decreased available pasture lands	5
- Lost winter permit to forest closing	5
- Personal reasons	6
- Orchard better money than sheep and goats	3
- Too much conflict with orchard owners	2

b)How does a reduced number of sheep and goats effect forest use?

- Grass grows better	4
- Less damage to small trees	3
- Less dung to the forest	1
- No opinion	13

3. Do you buy more food products at the bazaar than at *Katbat*? Why?

Yes - 19

- Fields in Orchard instead of food crops 4
- Increase in population 3
- Did not like to go to the bazaar in past 1
- Prefer food from the bazaar 1
- Have money now to buy food 2
- No opinion 8

4. Do you plan to keep some land aside to produce your own food?

Yes - 7

No - 10

Unsure - 2