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**Inequalities in the Commons:
Gender, Class and Caste in
Common Property Regimes.
A Case from Nepal**

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Abstract

Common property regimes have been shown to help alleviate inequalities within communities by providing all members access to common pool resources (Jodha 1990, Agarwal 1992, 1994: 22-24, 63, Shiva 1988). In addition, many common property regimes have managed specific resources over long periods of time without degrading the resource base (Beck 1994, Berkes 1987, Exo 1990, Faust 1996, Gilmour and Fisher 1991, Jodha 1990, Ostrom 1992, Shiva 1988). These two qualities have led to increasing recognition that common property regimes offer more sustainable alternatives compared to private property regimes. Environmental and social sustainability are interconnected given that environmental costs must be eventually paid, and environmental destruction often has the greatest impact on the poorest segments of society.

Common property regimes can promote the development of sustainable societies through resource sharing but the internal dynamics of these regimes must be examined. Common property regimes can be the site of gender, class and caste struggles. These struggles can lead to unequal power sharing in management decisions, even when all stake holders participate in the decision making process. The unequal nature of this process can lead to non-compliance. Both the scale and the ecological impact of non-compliance need further systematic investigation. The success of common property regimes may be related to their ability to tolerate some non-compliance but social and ecological limits to that flexibility exist. This paper presents a case study from northwestern Nepal to illustrate these issues and to ask questions that arise from the examples. Understanding these inequalities and how they structure both the common property regime and the management decisions made within the regime are critical if one is interested in promoting similar institutions in other parts of the world or for other common pool resources.

Inequalities in the Commons: Gender, Class and Caste in Common Property Regimes. A Case from Nepal

Andrea Nightingale

Introduction

Common pool resources are defined as resources owned by a limited group of people sharing use-rights to those resources. Resources managed as common property are generally subtractive, indicating that when one person utilizes the resource, less is left for everyone else (Berkes and Farvar 1989: 7, Faust 1996, Ostrom 1992: 293, 295-296). Common property regimes are the institutional structures that manage common pool resources and generally are composed of people in the user-group. Ideally, all people who have an interest in the common pool resource are represented in the regime. Common property regimes are prevalent in many Third World countries and have been widely studied. Interest in them has focused on first demonstrating that institutions exist to manage the commons and second to show that these institutions can prevent long-term degradation of common pool resources (Agarwal 1994, Beck 1994, Berkes 1987, Berkes and Farvar 1989, Exo 1990, Faust 1996, Jodha 1990, Metz 1990, Ostrom 1992, Shiva 1988, Zurich 1990). Few studies, however, examine the inner workings of common property regimes and the way that gender and class struggles can be manifest within them. Tony Beck (1994) examined class issues in relation to West Bengal common property regimes, but his study focused on the importance of access to common pool resources by the poor. He did not examine the way that class, caste and gender struggles can influence the design and operations of common property regimes, whose management priorities are considered, and how compliance is related to the first two issues.

This paper examines the internal dynamics of common property regimes and the degree to which all members of the user-group have an equal voice in the management process. The objective is to understand whether or not common property regimes have the potential to mitigate class, gender and caste hierarchies within societies and successfully manage biological natural resources. Inherent inequalities in the process can lead to non-compliance but non-compliance is not always ecologically destructive. Common property regimes can contribute to sustainability by allowing all community members a voice in management decisions and ensuring long term protection of common pool resources. Case study examples from Mugu District in northwestern Nepal illustrate how common property regimes complement the private ownership of land. Finally, class, caste and gender struggles inherent in these regimes are examined.

Class, gender and caste struggles do not always imply conflict. There are cases where cooperation leads to more equitable access to income, although the potential for ecological degradation may increase. In other cases, conflict is evident as women, low class and low-caste people deliberately break common property regime rules as an act of resistance (see also Raheja and Gold 1994, Scott 1985). These internal dynamics can potentially undermine the long-

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term sustainability of common property institutions and the resource itself. In addition, if one is interested in transferring alternative models of property management to other resources or other parts of the world, it is critical to understand these internal dynamics. Class, caste and gender hierarchies within a community do not disappear simply because all members of the community have access to a commonly held resource. I conclude by raising questions for further investigation suggested by the case study examples.

Sustainability and The Commons

The characteristics of a "sustainable society" continue to be debated. In my mind, a sustainable society needs to be founded on principles of equality. It is critical to establish a process that ensures all citizens have an equal voice in deciding how natural resources are used and that fosters an equitable distribution of income. Not all citizens may have access to all resources all the time but the process needs to ensure equal power sharing among all stake holders (see Kapuscinski 1996). In addition, eliminating gender, class, and race/(caste) inequalities is important for maintaining an equitable decision making process. Finally, access to resources must be regulated in ways that will not compromise the long term sustainability of the ecosphere. Thus, I am using "sustainability" to refer to both social and ecological sustainability. I believe the two cannot be separated. At some point societies will have to cope with the environmental costs of over-exploitation of resources. People may argue that technology will overcome the problems of environmental degradation, but in this paper I am assuming that technology does not provide all the answers, and that environmental problems will not be solved quickly.¹

Social sustainability is critical as the over-exploitation of resources is often done at the expense of marginal groups. In South Asia, over-exploitation of forest resources has seriously reduced the standard of living of the poorest segments of the population (Agarwal 1986, 1994, Beck 1994, Jodha 1990, Shiva 1988). The United States is currently attempting to find a permanent dumping site for nuclear waste and the land under consideration is often on Native American tribal lands or near other impoverished/marginalized groups. One doesn't hear of a dumping site near the wealthy suburbs of Minneapolis. The development of a more equitable and just society is thus dependent on the sustainability of the environment.

Common property regimes have been examined as viable and more equitable alternatives to private property regimes. Several authors have discussed the possibility that common property regimes can help minimize income differentials in agricultural communities by giving all members access to critical resources complementary to private land holdings. Poorer groups tend to rely most on commonly held land compared to wealthier groups, but the net result is a leveling of household incomes² within a community (Agarwal 1992, 1994: 22-23, Jodha 1990, Quiggin 1993, Swaney 1990).

In addition, in the South Asian context, Bina Agarwal has argued for the importance of land over other assets for providing security against poverty (Agarwal 1994: 2). She further argued that common property regimes can facilitate control over the resource by the owners. Individuals, particularly vulnerable people such as widows, have difficulty retaining control over land that they do own. A collective, by virtue of numbers, has a better bargaining position against others who would attempt to control their land (Agarwal 1994: 69).

Finally, there is evidence to suggest that some common property regimes have successfully preserved sustainable harvests where "scientific" management has decimated a similar resource (Berkes 1987, 1989, Bromley and Cernea 1989). An examination of Cree fisheries revealed that their historical beliefs about fishing practices have preserved the viability of the fishery over time. Berkes contrasts this example with the maximum sustained yield management of the Peruvian anchovy fishery that led to its total collapse (Berkes 1987: 84-87). There are numerous examples from throughout South Asia and especially Nepal, of the ecologically sound management of commonly held property by village communities (Bromley and Cernea 1989, Brower 1991, Daniggelis 1994b, Exo 1990, Gilmour and Fisher 1991: 39-56, Metz 1990, Shiva 1988, Stevens 1993, Wade 1988, Zurich 1990).

Conceptualizing Common Property Regimes

Despite the ample literature critiquing Garrett Hardin's (1968) Tragedy of the Commons thesis, I feel obliged to briefly review the fundamental problems with his ideas. Hardin (1968) proposed that common property inevitably led to environmental degradation because it was in each person's best interest to exploit as much of the resource as possible before others did. The critical mistake that Hardin makes is in lumping common property together with open access resources. Common property is not open to "everyone," but rather is owned and managed by a defined group of people who have use rights to the resource. Open access resources, in contrast, are open to anyone who gets to them first. The primary difference between open access and common property is the existence of a management regime for common property. The absence of such an institution creates an open access situation and in that case Hardin's thesis would often hold true (Bromley and Cernea 1989: 6-7, 14-15, 20-21, Faust 1996, Jodha 1990, Ostrom 1992: 297-298, Quiggin 1993: 1123, Shiva 1988: 83-86, Swaney 1990: 451-452).

It is important to recognize, therefore, that common property regimes refer to the institutions that govern communally owned and/or managed resources, not to the resources themselves (Berkes and Farvar 1989: 9, Faust 1996, Ostrom 1992: 293). The distinction is an important one to make for several reasons. First, a given resource can be managed under several different property arrangements, including a combination of private and common property regimes (Berkes and Farvar 1989:9, Bromley and Cernea 1989: 15, Faust 1996). For example, commonly owned agricultural land is frequently cultivated individually, giving the cultivators sole rights to the produce (Bourque and Warren 1981: 115-116, Agarwal 1994: 487). Similarly, privately owned cows graze on common pasture lands. How these regimes interact can have significant ecological and social consequences.

Second, the inner workings of a common property regime may hold clues for creating more sustainable environmental conditions for the common pool resource. Disputes between members of the regime over management decisions may lead to non-compliance, potentially degrading environmental conditions (see also Nightingale 1996a). Understanding these power sharing dynamics can lead to solutions that will reduce non-compliance and ensure the sustainability of both the common property regime and the resource.

Many authors have examined the effects of external forces that can lead to the demise of local common property regimes (Agarwal 1994: 21-24, Bromley and Cernea 1989, Exo 1990, Faust 1996, Gilmour and Fisher 1991: 181-193, Jodha 1990, Ostrom 1992, Quiggin 1993, Seabright 1993, Shiva 1988: 55-217). The development of commodity markets for resources that can be obtained or grown on common lands often causes the break down of common property regimes. Either members cease to follow community set rules or the more powerful members attempt to privatize land (Exo 1990, Jodha 1990, Shiva 1988: 77-82). For example the privatization of the English commons was largely driven by the development of commodity markets for wool (Swaney 1990:453). In South Asia, commonly held lands have declined rapidly in both total area and in productivity with the commercialization of the rural economy. The development of commodity markets in India is positively correlated with a decline in the area of common property (Jodha 1990: A-73).

In addition, the State in both India and Nepal has acquired large portions of common lands. The nationalization of Nepal's forests in 1957 led to the rapid degradation of forests that were previously village common lands. Villagers from all over Nepal believed their resources had been taken from them and they responded by attempting to harvest as much as possible (Bromley and Cernea 1989: 9-10, Gilmour and Fisher 1991: 11-12).³ In India, the State actively encouraged commercial use of forest lands by granting timber contracts to commercial harvesters. These policies began under the British colonial regime, but have continued after independence (Bromley and Cernea 1989: 9, Jodha 1990, Shiva 1988: 62-65). In addition, land reform measures aimed at granting land to the poorest segments of the population divided common lands into private parcels. These parcels were often obtained by wealthier families at the time of redistribution, or later when poor farmers fell into debt and were forced to sell their land (Jodha 1990, Agarwal 1994: 22-24).

Bina Agarwal (1994: 24) has argued that the commercialization of the rural economy and the corresponding decline in common property regimes and resources have contributed to gender and class stratification within the peasantry.

The process of privatization has been accompanied by an increasing concentration of previously communal land in the hands of the male members of relatively few households. Poor households have thus lost out collectively while gaining little individually. Within poor households, women's loss has exceeded men's due to women's greater dependence on communal resources, given their little control over private resources (Agarwal 1991). In effect this has deepened both class and gender differentiation among the peasantry (Agarwal 1994: 24).

The poorest segments of the population rely most heavily on common pool resources for daily sustenance, and thus when these resources are degraded or privatized they suffer the most (Agarwal 1994: 23-24, Beck 1994, Jodha 1990).

Gender and class struggles are also critical to examine within the context of common property regimes. People who are most dependent on common property for daily sustenance are also the same people who are likely to have the least amount of power within the village (Beck 1994, Jodha 1990). In the South Asian context, poor, low caste people, low class people (of all castes) and women are the most vulnerable groups. The precise demographic make-up of those considered "marginalized" varies in different localities, but caste, in some cases ethnicity, gender and class are the four main determinants of who holds political power. People with the least political power might not have an equal voice in a common property regime, and therefore they may not agree with management decisions. In this sense common property regimes can be a site of gender, caste and class struggles. The examples below will detail how these struggles can manifest themselves within common property regimes and will show their contradictory effects. The sustainability of the resource may or may not be undermined, yet the process of community decision making holds the promise of more equal power sharing by eroding hierarchies of class, caste, ethnicity and gender.

A Case from Mugu District in Northwestern Nepal

The following case study descriptions are drawn from the six months I spent living in a small village in northwestern Nepal in 1993-1994. The village is located in Mugu District in the northern part of the Karnali Zone (see Maps 1 and 2). The discussion below first describes the different types of common property regimes in the village and the way they interact with private property regimes. In addition, the class, caste and gender struggles inherent within the common property regimes will be discussed to the extent possible with my limited field data.

The community consists of three villages that share common pool resources. The villages were initially in one location, but sometime early in this century the Untouchable⁷ and Chetri castes moved to two separate sites, both of which are closer to the forest and approximately 1500 feet above the older village (see Figure 1 and Map 2). The main village remains in its original location and is populated with households from two unrelated Thakuri (high) castes and one Chetri household.⁸ The village is positioned in the middle of the irrigated fields where most Thakuri and Chetri households own some land. Households from all three villages share the forest as a common pool resource and many have fields just below the forest. I will refer to all three villages as "Mugu gaon," which technically means "Mugu village," and the individual villages I will identify by name.⁹ The Thakuri village is named Chaina, the Chetri village, Hernikanth, and the low-caste village, Sankhola. The distinction is somewhat confusing, but residents still consider themselves part of one village despite their spatial separation. A short distance away is a small bazaar (market town), Gumgadhi, with government offices and at least twenty commercial establishments, many of which are run by people migrating from other parts of the Karnali Zone.

Common Property Regimes and Class, Caste and Gender Struggles ***Privately Owned Fields as Common Pool Resources***

There are several different types of common property regimes in Mugu gaon, many of which govern resource use on private property. Privately owned fields become open for harvesting some resources at specific times of the year. For example, after the harvest of a crop and before the next crop is planted, people are allowed to graze their animals on the remaining stubble, including anyone traveling through the area with animals. The system is beneficial for the land owners because the grazing animals will leave dung on the fields, adding critical nutrients to the poor, mountain soils (Land Capability Map 1982, Land Systems Map 1982). Once a field has been plowed in preparation for the next planting, it is no longer open to grazing.

Irrigated crop fields provide another community resource during the winter months. The fields are planted in wheat and barley (*Triticum aestivum* L. and *Hordeum hexastichon*)⁷ in the late fall and harvested in late spring (see also Bishop 1990: 212-214).⁸ Weeds from the fields are collected and provide one of the only sources of fresh vegetables in the winter months. People from the bazaar and neighboring villages are allowed to harvest these weeds from any of the fields as often as they wish. Again, allowing others to use private land in this way has benefits for the land owner. The wealthier land owners would not be able to keep all their fields weeded without hiring labor, but because the weeds are edible, others are willing to do this tedious task for only the benefit of keeping the weeds. It is a cooperative arrangement that has advantages for both sides. This common pool resource is critical for the survival of all villagers during the winter months.⁹ Grain supplies do not generally run short until the spring, but fresh fruits and vegetables are almost non-existent.

A crisis in this system erupted while I was in residence and illustrates the way these community resources in fact are carefully controlled. Someone had cut grain along with weeds in the early spring when the grain was beginning to ripen. The next morning men from Chaina and Hernikanth, in addition to men from neighboring villages (primarily Chetri and Thakuri), gathered to discuss the problem. No low-caste men were present. It was decided that someone should be hired to watch the fields and from then on people would be allowed into only their own fields. This decision did not take long to reach, but another hour of discussion was spent on who should be hired. A very poor, high-caste man argued strongly that his son should be hired because the community needed to support its poor. Many of the low-caste people are far poorer than any of the high-caste people, but, as the spontaneous committee was composed primarily of high caste land owners, they decided to hire the high-caste (yet near landless) man's son (see Gilmour and Fisher 1991: 186-189 for a discussion of caste and patron-client relationships).

This spontaneous committee that was formed to protect the wheat and barley fields from illegal grain cutting illustrates gender, class and caste issues. Two points are significant in this example. First, the community had the ability to quickly form an institution that can resolve a problem that affects most of them and cuts across caste and class lines. I believe this type of rapid response is possible because the community has experience managing other common pool resources and understands the need to form alliances to effectively protect these resources. Second, it is evident that not all community members have an equal voice in the decision making process. A high-caste man who owned very little land was able to exert a great deal of influence at the meeting. He was able to argue for the need to hire his son over several other possibilities, in part because of his caste status; he also has a strong personality, which I believe contributed to his persuasiveness. Low-caste people were not present at the meeting and were thus unable to voice their concerns. Finally, the fact that the committee consisted solely of men is significant. Women do most of the harvesting of weeds, yet they were not included when resolving this conflict. They may have had a very different perspective on the problem but were not able to voice their opinions in a public forum (see Nightingale 1996a for a discussion of women's influence in community decisions).

Water Powered Grain Mills

Water powered grain mills are another common pool resource that are a combination of common property and private property. The water mills are built along the banks of streams from wood and stones found locally in the rivers and stream beds. Appropriate stones are shaped into large, flat circles with a hole cut in the middle. Two stones, turned by a wooden fly wheel placed in the water, grind the flour. Most mills divert the water along a wooden canal above the mill, a short distance from the stream bed, to regulate the supply of water to the fly wheel. All members of the community that have use rights to the land along the river or stream, can build a mill (all people in the area, including passing travelers, have use rights to the stream, however). Near Chaina a water mill had been built by several of the families from that village. The mill is open to anyone who gets there first, but people using the mill must give a portion of the ground grain to the families who built the mill. (Families who invested in the mill are not required to give anything.) The exact amount given was difficult to ascertain, but the proportions were not overly burdensome; they were approximately 5-10% of the ground flour.

This common property regime benefited the investing families most, and served in many ways to perpetuate income inequalities instead of mitigating them. Water powered mills were heavily used. Grinding grain with a hand powered mill is the only other alternative. Women in other parts of Nepal spend huge amounts of time grinding grain by hand (Acharya and Bennett 1981, Bennett 1983). Households which could not afford to build a mill¹⁰ generally also did not have large amounts of land or other sources of income and, everytime they used the mill, they were required to relinquish some of their harvest to the wealthier households.

In Chaina, the water level in the stream was too low during the spring to use the mill, so that everyone was forced to use a mill belonging to another village. Thus, during certain times of the year all households had to relinquish part of their harvest through the grinding "tax" to people outside the village. It is important to point out, however, that this tax is more burdensome to poorer households, as many of them do not produce a surplus of grain and are dependent on income from wage labor and government low-cost rice to meet their sustenance needs.

Irrigation Common Property Regimes

Irrigated fields are governed by one of the most finely tuned and also one of the most invisible, common property regimes in Mugu gaon. Owners of the irrigated fields are allowed a day in the spring to let the water run into their fields and saturate them just prior to transplanting rice seedlings. There is a relatively limited area where irrigation is possible, given the amount of water flowing down into the valley and the gravity-driven system that is in place.¹¹ These fields are owned by people from all three Mugu gaon villages as well as people from neighboring villages.¹² Villagers told me that each household has a turn for irrigation water, on one day they fill their fields with water, and the next day the low-caste people come to plant. Every year the families have their turn on the same day of the rice planting month, a sequence that has its roots in historical land tenure. From what I was told, it seems the turns were decided several generations ago. One woman told me, "Our grandfather's grandfather decided the turns, we still follow that system." Households that are closely related, like those of two brothers, often have to share a turn. According to Chaina men and women, during the winter months when irrigation water is not in high demand, there is no system governing its use.

The system is coordinated with the labor exchange (jajmani) system as well. Low-caste people from a neighboring village (interestingly, not people from Sankhola) plow and plant the rice fields of the high-caste households (Thakuri and Chetri).¹³ In exchange they are given rice after the harvest and again in the spring when the rice germination process has started. The spring gifts of rice are particularly critical for poor households, as the rice germination occurs at the time of greatest food scarcity. The same people plant most of the fields, and therefore, the timing of irrigation water and the availability of labor must be coordinated.

A crisis also occurred in this system while I was in residence. A relatively wealthy and influential high caste household violated the irrigation rules by refusing to relinquish its turn. Water levels were very low that spring and the household was not able to saturate its fields in one

day. Household members kept the water running into their fields for three days until they had gotten enough water. The other villagers were angry and heatedly discussed the issue, but seemed to have no recourse. One woman shrugged her shoulders and said, "They are like that, what can we do?" when I asked her what would happen.

The crisis in the irrigation system also illustrates the importance of caste and class status within common property regimes. The most powerful household in the village decided to violate the rules so no one dared to challenge it. If a less powerful household had attempted the same thing, it is likely that others would have stopped it. There are two possible interpretations of this event. One is that wealth and status can interfere with the degree to which a common property regime successfully allows all members a voice in decisions and equal power sharing. Another interpretation is that common property regimes can tolerate some level of non-compliance without the whole system breaking down. Common property regimes can be inherently flexible, giving them the ability to adapt to changing circumstances. Further research is needed to determine which interpretation is more accurate. I suspect they may both be true at different times and in different contexts.

The Community Forestry Regime

The most visible common property regime is the state sponsored community forestry program that manages a large area of forest adjacent to Hernikanth and Sankhola. The government's District Forestry Office (DFO) initiated the program by providing technical support. The community was first required to show documents proving historical claims to the land. Subsequently, the DFO working with villagers, drafted a five year community forest management plan and formed a management committee.

As mentioned above, Nepal's forests were nationalized several decades ago, essentially giving the King of Nepal ownership over all common land (the government continues to officially own all natural resources that do not occur on private—individually held—land). Two Thakuri women told me, "Our grandfather went to Kathmandu to register our land. He was a smart man, now we can show that we owned that land and they will give it back to us. The other villages that did not register their land are not able to have a community forest like ours."

I am not certain if demonstrating historical rights to the land was an absolute requirement for obtaining use rights to community forest land, but it did allow residents of Mugu gaon to regain control over a large portion of their former land.¹⁴ The community forestry program allows residents of Mugu gaon to exclude people from neighboring villages from gathering any forest products within their forest. This is particularly important for successful management of the forest ecosystem, as several villages occupy the valley and forest land is relatively scarce. One woman told me, "It is better now that we have our own forest. We care about our forest, we own it, and we can keep people from Karkibara and Toma [other villages in the valley] from using our forest. We can now protect it from being totally cut down."¹⁵

The forestry committee manages a number of resources that are available in the forest. The four most important resources for the daily needs of villagers are firewood, pine needles, fodder and grazing land. Firewood is the only source of fuel for cooking and is the resource that is extracted in the largest quantities. The forest is always open to collecting dead wood but the cutting of green wood is prohibited. Pine needles are used for stable bedding. The manure-pine needle mixture is later composted and spread on fields as fertilizer. The only fodder that can be taken out of the forest are branches that can be broken by hand; all other fodder cutting is restricted in the five year plan. Grazing is allowed most of the year, although in practice people graze in the forest only during the early summer months. They need to allow manure to collect on fields adjacent to the forest. In addition, other sources of fodder are usually depleted by that time of year. Stall feeding of animals at other times of the year ensures a supply of compost for fields close to the village.¹⁶ Restrictions on the use of these resources is adjusted as needed.

For example, while I was in residence, the harvesting of pine needles was limited to one, five day period, every six months. Previously, pine needles were harvested at all times of the year and the DFO was concerned that the loss of the litter layer could have negative affects on the

regeneration of tree seedlings. The measure was designed to allow time for the resource to recover and to limit the overall consumption of pine needles. The restrictions would allow pine needles to collect on the forest floor creating a more "normal" Utter layer.

Other resources harvested from the forest are timber, clay for plastering floors, and bamboo for making baskets, tools and fences. Timber is carefully controlled, and people are required to pay for it. Bamboo and clay are not regulated. In addition, people gather a variety of berries, nuts and medicinal herbs from the forest. Berries and nuts are primarily gathered by women and children while they are out collecting other things such as firewood or fodder and are usually consumed on the spot. If anything is brought back to the village, it is shared with friends and other family members as a snack, and not incorporated into the main meal (see also Daniggelis 1994a).

The forest committee is officially composed of people from all three villages, including several women members. Low-caste people and women of all castes are under-represented at committee meetings, however. The women who are present are "team leaders" who are responsible for passing on the information to other women in their village, yet often even the team leaders are not present. The meetings are held at the temple in the middle of Chaina, and as a result, men from that village tend to dominate the meetings. Chaina is a good hour walk (and 2000 foot elevation change) from Sankhola, and forty-five minutes from Hernikanth, making it more difficult logistically for Chetri and low-caste men and women to attend meetings.

Meetings are held monthly and conflicts are resolved by consensus and majority rule (if a consensus cannot be reached, the majority wins). All users officially have a voice at committee meetings, and most people did speak up at the meetings I attended. Whether or not everyone's opinion is considered when decisions are made, however, is not as straight forward.

The forestry committee is a good example of caste, class and gender struggles within common property regimes, in part because the institution is so visible and ostensibly everyone has an equal voice. The decision to restrict the harvesting of pine needles to five days every six months was strongly opposed by the women from Chaina. When the proposal was brought up at the committee meeting, they protested loudly. One woman recruited more women from the village to come to the meeting and strengthen their cause. The women objected that they could not gather enough pine needles for six months in a five day period. The gathering of pine needles is done by women only—I never saw a man or boy carrying pine needles—although there are no normative restrictions prohibiting men from doing the task. They simply don't.

The women argued, "What will we do if the mother is sick or the daughter-in-law is menstruating or pregnant? If the daughter-in-law is having a baby we could not gather pine needles at all in those five days!"¹⁷ Pine needles are a critical component of their agricultural system and households would have to buy them if they were not able to gather enough in the allotted time (see also Bishop 1990: 212-218). The Chaina women in particular were opposed to the restriction as they are substantially farther from the forest than the Chetri or low-caste women, although all the women present protested the measure. (The Chetri and low-caste villages already gathered most of their pine needles within a week or two and stored them in large piles in the village). The women from the upper villages could gather several loads a day, in contrast to the Thakuri women who could gather only one load a day.

The measure passed despite the women's protests, indicating that the women do not have an "equal" voice in committee decisions. The ecological benefits that the measure was intended to create are potentially undermined by the gender division within the user-group. Poor women (high and low-caste) will break the rule if they are not able to gather enough pine needles in the allotted time, sneaking out at night to gather them. Wealthier households can afford to buy pine needles, but when I asked who would sell pine needles, a friend of mine answered ironically, "the low-caste people, and they will get them from the forest." Her response highlights the closed nature of the system. The pine needles inevitably will be from the same place, whether they are obtained legally or illegally. If the committee is to successfully protect the resource from degradation, rules need to be followed by most users. The concerns of the women over the increase in their work

load was not considered and therefore is likely to generate resistance to the measure instead of compliance (see also Nightingale 1996a).

Women frequently broke the rules about cutting green firewood, and I have argued elsewhere that this is a form of resistance to the work that is expected of them on a daily basis (Nightingale 1996a). Young women, in particular, who live with their in-laws are expected to do the vast majority of the heavy work for the household, and as a result are often too tired to look for dry firewood. They cut green firewood, not out of ignorance, but because they do not have the energy and motivation to walk another 500-1000 feet up into the forest in search of dry wood.

Similar to the pine needle debate, gender inequalities within the community undermine the successful operation of a common property regime. Promoting more equal sharing of work loads would help to decrease resistance to work expectations and to increase compliance with the regime. In this way, social and ecological sustainability are integrally linked. The presence of women on the forestry committee does not signal equality. Rather the internal dynamics of that committee must be examined to understand how successful it is at providing for power sharing among community members.

Class and caste inequalities similarly can undermine the success of a common property regime. The forest plan specifically prohibits the sale of resources to people who are not in the user-group. Thakuri households occasionally buy firewood from Sankhola men who bring it down to the main village and sell it. The wood comes from the community forest, but the sale of it is allowed because both parties are in the user-group. One day while I was in the bazaar with a friend, however, we saw a Sankhola man selling firewood. We stopped to talk with him for a while, and I was surprised that she didn't say anything about the firewood. When he left, I asked her, "Isn't it illegal to sell firewood from 'our' forest?" She replied, "Yes, you are right, it is illegal, but what are they to do? They are poor and they must eat somehow." The wealthier, high caste people are willing to look the other way when poor, low-caste people break forestry committee rules in an explicit understanding of their sustenance needs.

It is interesting to note, however, that poor Thakuris (high-caste) would never try to sell firewood. I am not certain I understand all the factors that are at work, but Thakuri men consider it below their caste status to do heavy manual work for wages. Historically they have been well educated (all Thakuri men in the village are literate and many of them were taught at home), and many hold government office jobs in the bazaar. The high-caste men consider it below their status to do a manual task such as collecting firewood for money. Caste and class intersect in ways that are extremely complex. It is not possible to go into too much detail here, however, it is critical to understand that these social divisions are at work within common property regimes.

Gender, caste and class struggles are often manifest as differences in management priorities. It is easy for high-caste men who hold office jobs to advocate for maximum conservation as they are not the ones responsible for gathering forest resources. The idea of restricting pine needle harvesting to promote long-term conservation was not disputed by anyone in the community. Everyone understands the value of such a strategy, but the people who will be directly affected by the measure have legitimate concerns over the feasibility of following such a strategy. Similarly, the need to harvest resources and sell them for money creates different priorities for low-caste men and women as opposed to high-caste men and women. Women in general do not control cash resources within a household and therefore men would benefit most from selling resources (see also Agarwal 1994: 58-59). The history of patron-client interdependencies in Mugu gaon promote attitudes such as "they are poor, they must eat somehow." These attitudes create inherent flexibility within common property regimes and may be one of the keys to their success. Rules are created, but are not strictly followed in all cases. The sustainability of the resource may suffer depending on the scale of non-compliance. Yet when one considers that the alternatives are open access resources, state-owned or private property (which would be controlled by high-caste, high class land owners), the flexibility of common property regimes may more effectively protect the resource over the long term. Open access resources would suffer from the "tragedy of the commons" syndrome. Private property does not ensure

protection from degradation and leaves limited possibilities for an equitable distribution of income within the community.

The gathering of fruits, nuts, and edible weeds is also a gendered process. Women are responsible for the nutritional needs of their families, and when access to edible weeds is restricted they are hard pressed to feed their families (Acharya and Bennett 1981, Bennett 1983, Daniggelis 1994a, Levine 1988). In addition, I can foresee conflicts over management of the forest if large scale planting is ever undertaken. Men would not value the importance of wild berries and nuts, as they rarely eat them. They can be a critical component of women's diets, however (Daniggelis 1994a). Large scale planting would likely favor timber and firewood, both products that potentially can be sold (Daniggelis 1994a, 1994b). Berry bushes would be considered weeds and not perpetuated or protected in planting schemes (see also Shiva 1988, Agarwal 1994: 58 for examples of these issues in India).

Conclusion

Three main conclusions emerge from the above examples. First, the community has the ability to act quickly when resources are threatened as in the grain stealing case. A formal mechanism did not exist for the regulation of weed collection but when a problem arose, landowners quickly initiated a mechanism. Whether a similarly rapid response could be generated for resources which are not on private land or which have longer regeneration times is not clear. Further research is needed to investigate how quickly villagers respond to crises in the community forest and whether their responses are resource specific. It is reasonable to suggest that villagers would aggressively protect resources seen as critical for daily survival such as firewood and fodder trees but they may be less protective of wild edible plants or clay resources. The regeneration time of the resource versus the degree of exploitation would determine the effectiveness of community responses to resource degradation.

The second conclusion that emerges is that the inclusion of women and low-caste people in common property management structures does not signal equal power sharing. The process itself must be examined carefully to understand the class, gender and caste struggles that are manifest within management decisions. Two critical questions must be asked about the importance of these struggles. How can the process of regulating common pool resources foster more equal power sharing among all stake holders? A thorough examination of the power dynamics within several common property regimes could reveal which types of management structures are more inclusive. In addition, other social influences such as education and migration may help to erode community power hierarchies or reinforce them depending on which segments of the population receive benefits from education or seasonal out-migration (see also Nightingale 1996a, 1996b). These influences must also be considered. More research is needed to understand how gender, class and caste hierarchies can be mitigated to promote equal power sharing within common property regimes and within the community at large. The second question is how are gender, class and caste struggles within common property regimes related to non-compliance? It seems clear that disputes over management decisions can lead to non-compliance but more research is needed to determine the extent of non-compliance.

Similarly, the final conclusion is that a certain degree of non-compliance can be tolerated by common property regimes without destroying the system. The question that requires more investigation is to what extent does non-compliance adversely impact the ecosystem? One would need to look at the ratio of biomass removed versus the regeneration time of the biological resource to determine whether or not non-compliance has a negative effect on the resource. The scale of non-compliance (how many people are breaking the rules) and the resulting amount of biomass removed, become the critical measures. The common property regimes discussed in this paper are inherently flexible but one must ask how flexible they can be before they cease to function effectively.

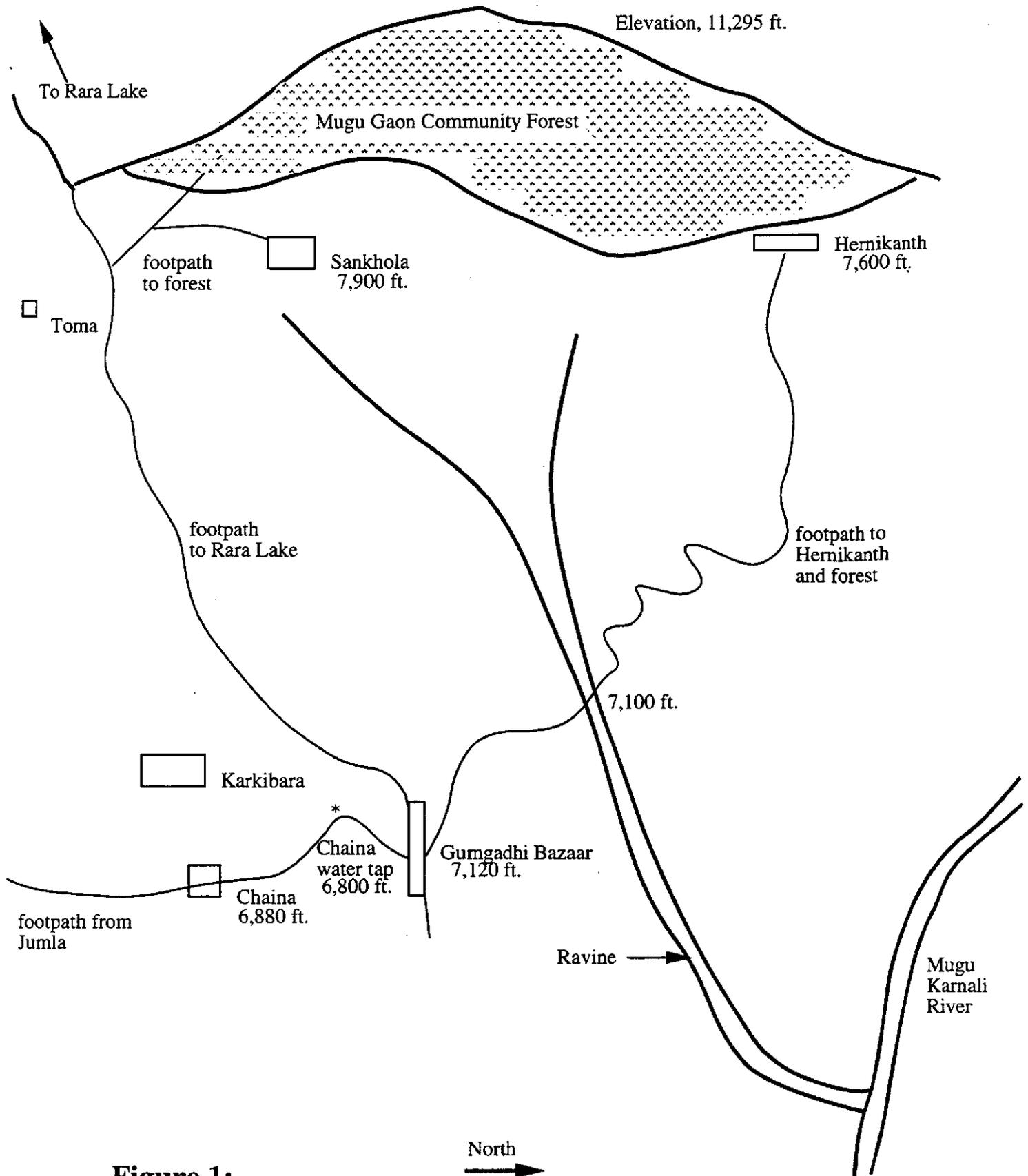
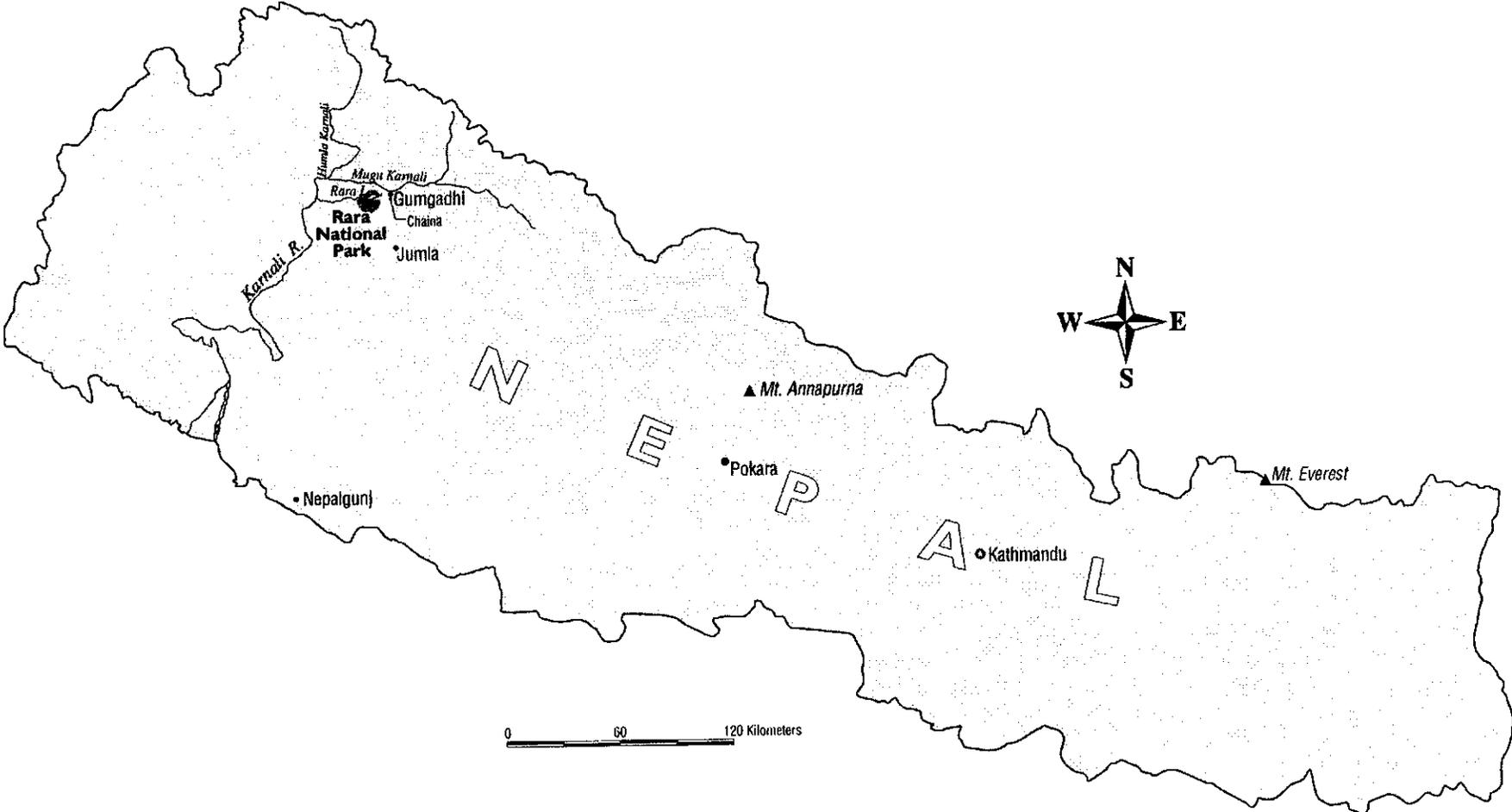


Figure 1:

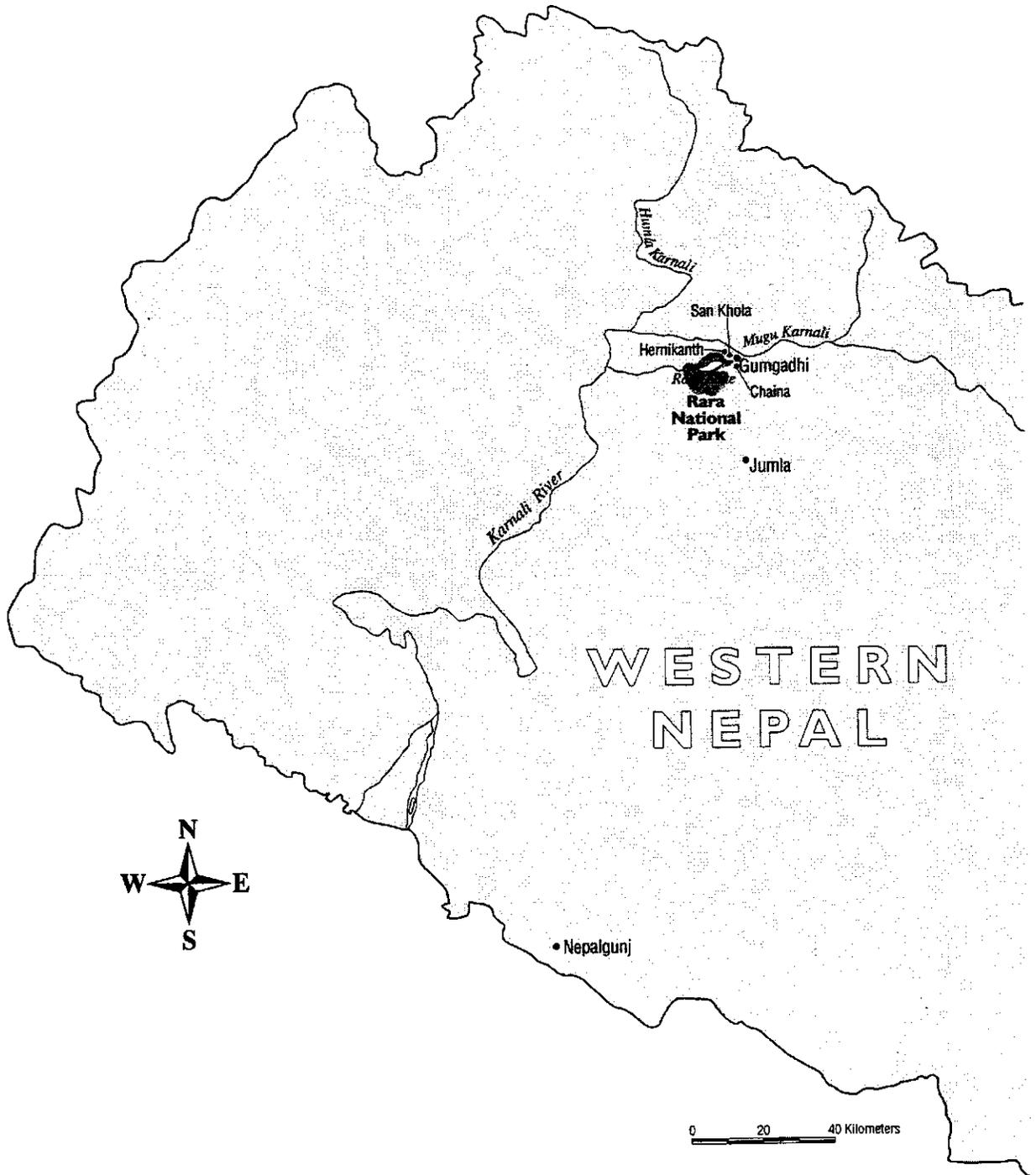
Chaina Village and Surrounding Valley

(not to scale)

Map 1: Nepal



Map 2: Western Nepal



Notes

1. The development of fertilizers and pesticides is often touted as an example of technology conquering the carrying capacity of an environment by insuring consistent high yields. Baker et. al (1993) discuss the role that a period of relatively "benign climate" played in creating consistent high yields in the American corn producing states from 1937-1973, exactly the period when fertilizers and pesticides were first developed for agriculture. They argue that consistent yields were primarily due to the mild climate during that time period and that when the climate reverted back to normal (for example the incidence of early frost, harsh winter, or other climatic events became more common), corn crop yields became far more unpredictable. Chemical inputs do increase overall yield for a time, but they can not overcome climatic events that influence crop yields.
2. See Jodha 1990: A-66 Table 2 for some of the criteria used to assess household "income" for small, peasant farmers in India. Obviously income is not measured in terms of cash resources only. The contribution of common property resources to off-season employment, sustenance, as well as physical products and resource conservation are included as "income."
3. Gilmour and Fisher (1991: 12) question whether or not villagers indeed reacted to the nationalization by cutting down forests as is widely believed in Nepal. They have oral history accounts that draw such an analysis into question. Where I worked in Western Nepal, villagers told me that once the *sarkar* (government) took control of the forests, they could no longer keep people out and a large tract of forest is now a grassland with some regenerating pines. The people from the *bazaar* (market town) began harvesting forest products and the forest soon disappeared. The bazaar town was growing at about the same time as the nationalization of the forests, so it is difficult to know if the historical common property regime could have coped with the influx of people and corresponding pressure on local resources.
4. The term "Untouchable" is a pejorative that refers to castes that high caste Hindus consider to be literally untouchable. Receiving food, water, or touching a member of an untouchable caste would ritually "pollute" a high caste person. I am at a bit of a loss for a better term to use, however. I will refer to these people as "low-caste" people in this paper.
5. Household is defined as members of a family who share a common hearth. It is common in Mugu for brothers to live in the same physical structure but to have separate hearths. Villagers define a household by who cooks together.
6. There is a Tibetan village several days walk from my field site called "Mugu gaon." The villages discussed here should not be confused with the Tibetan village. I chose "Mugu gaon" as a pseudonym because it is descriptive of the region where the villages lie.
7. Plant nomenclature is that of APROSC 1991.
8. Late fall is usually November or early December, the timing is dependent on rainfall, temperature and microclimate. I found the timing of plantings and harvests in Mugu and Jumla Districts varied by up to two months in different locations only a few hours walk apart.
9. Wild nettles are also eaten in large quantities. These grow prolifically along the trails and edges of fields. People are well aware of their nutritional properties. When I was sick they encouraged me to eat cooked nettles because they "would make me strong."
10. I am not certain, but I believe it requires time and a financial investment to build a mill. Financially, households would have to invest money or food for hired laborers. I never saw one built and it didn't occur to me to ask, although considering that high-caste people attempted to limit the amount of heavy manual labor they did, I suspect they may hire low-caste people when possible.

11. The only electricity is generated from a solar powered system located in the bazaar town. The electricity is used primarily for lights in the evening, I don't know if it generates enough power to run an electric irrigation pump; probably it does not.
12. Low-caste households have extremely small, if any, irrigated plots.
13. Women from high-caste households, particularly daughters-in-law, help plant the fields but the low caste people do the majority of the work.
14. Neighboring villages have use rights to very small tracts of forest, but I believe that their lack of land is due to the nearby National Park. Most of the villages surrounding the park lost most of their communal lands to the park and thus are now left with very small pieces that fell outside the park's borders.
15. See also Faust (1996) for a discussion of the importance of territoriality.
16. Stall feeding refers to the practice of confining animals in the stall and bringing them fodder. This practice allows manure to accumulate in the stable bedding. The manure-bedding mixture is then used for compost on the fields (see also Bishop 1990: 215-219).
17. Women are forbidden from coming inside the house or touching anything for six days while they are menstruating. Anything they do touch (their clothes, bedding, and dishes) they have to wash when they are finished menstruating. As a result women spend the six days in the stables or on roof tops and do very little work. The work they do is confined to specific tasks, and then only after the first three days.
18. For example, privately owned forest land in the western United States has been degraded by years of "scientific" forestry management.

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