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Resource Rights, Sustainable Livelihoods, Environmental Security and Conflict Mitigation in South Asia

Contents

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Photo: North-West Frontier Province, Pakistan. Sungi Development Foundation, Abbottabad, Pakistan.

Livelihoods, Security and Conflict

OVERVIEW

Patricia Moore

LIVELIHOODS, SECURITY AND CONFLICT: AN OVERVIEW

Accepting the 2006 Nobel Peace Prize, laureate Muhammad Yunus said: "Poverty is a threat to peace. The frustrations, hostility and anger generated by abject poverty cannot sustain peace in any society."[1]

This year's Nobel Peace Prize afforded global recognition to a concept that has evolved over the past quarter century, focusing the definition of 'security' on human security rather than the security of the nation state. Poverty has been identified as the causal link between environmental stress and conflict, leading to human insecurity.[2]

Nobel laureate Yunus, who is from Bangladesh, one of the four South Asian countries represented in this study, speaks from the context of a region described as the poorest, most deprived, most illiterate, and among the most militarised in the world.[3] Natural resource scarcities, and the inequities and processes that create them, have encouraged the outbreak of conflict in South Asian societies, especially among the poor whose livelihoods are natural resource-dependent. In many cases, these natural resource-based conflicts are triggered or aggravated by long-standing ethnic, communal and class-based rivalries.[4] The communities most vulnerable to these conflicts are invariably the poorest and most marginalised, for whom livelihood alternatives are non-existent or come at exorbitant cost.[5]

What are the rights roots of poverty? How can rights help to secure livelihoods? The starting premise underpinning the four South Asian studies presented here is that livelihood security is an essential component of human security, and that security of rights to natural resources is fundamental to livelihood security for rural people who depend on those resources. Livelihood security is one of the first steps on the path leading out of poverty and conflict. The objective of this study was to test the existence of links between the concept of environmental security, the impact of rights regimes governing natural resources in South Asia, and the degree to which rights to natural resources—or the lack of them—are a factor in generating and mitigating conflict.

BRIEF BACKGROUND ON ENVIRONMENTAL SECURITY

At the beginning of the second half of the 20th century, 'security' was defined in the context of the nation state, and emphasised securing borders from relatively easily identifiable, external military threats.[6] By the early 1980s, attention re-focused on the non-military aspects of security and began to be broadened to encompass the environmental aspects of security, including quality of life, within a state.[7]

The mid-1990s saw a shift in the debate over the links between environment and security, from the idea of nation-state security from interstate conflict to a society-centred focus on human insecurity as a trigger for civil strife.[8] A commentator making the connection between human insecurity and nation-state security noted that when a state's borders are secure, its citizens are not necessarily protected from the impacts of environmental degradation and that the resulting human insecurity can lead to

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1 *Bangkok Post*. 2006. Yunus, bank awarded. 11 December.
2 Najam, Adil. 2003(a). Environment and Security in South Asia: Lessons and Conclusions. In *Environment, Development and Human Security*. University Press of America, Inc. Lanham, Maryland, USA. p. 248.
3 Najam, Adil. 2003((b). Environment and Security: Exploring the Links. In *Environment, Development and Human Security*. University Press of America, Inc. Lanham, Maryland, USA. pp. 15, 18.
4 Zaidi, Asif Ali and Tahira Syed. 2000. The Nexus between Environmental Security and Livelihoods Security: A Case of North West Frontier Province of Pakistan. IUCN Pakistan, Islamabad. p. 8.
5 For the purposes of this study, the term 'livelihood' is interpreted broadly to include the capabilities, material, and social resources and activities required to earn a living that is able both to withstand and recover from stresses and shocks, and maintain or enhance these capabilities and resources. Infra., p.132.
6 Najam, 2003(b), *ibid*., p. 1.
7 *Ibid*., p. 6.
8 *Ibid*., p. 7. See also North Atlantic Treaty Organization. 1999. *Environment and Security in an International Context.*

instability at the state level.[9] One examination of conflict suggests that environmental degradation triggers conflict if social fault lines can be manipulated in the struggle for power, and that violence often results from the combination of a weak state, environmental discrimination and a pre-existing history of conflict.[10] This proposition is borne out by the four country studies that follow.

The late 20th century debate over the links between environment and security produced a substantial body of theoretical work and case studies, most of them from a developed world perspective. Considerable research focused on conflict as a result of competition for scarce environmental resources and on the characteristics of competing groups.[11]

The research making the links between environment and security has been thoroughly critiqued[12] and there is now theoretical and policy consensus that the links do exist.[13] A series of case studies on environment, security and sustainable development in South Asia, involving all of the countries taking part in this study and published in 2003, broadened the environment/security debate beyond the original focus on resource scarcity and degradation, linking security directly to livelihoods.[14] Drawing lessons from the case studies, the 2003 review concluded that the key to understanding the link between environment and security is not variables like scarcity or war, but more distantly related issues of institutions, institutional failure, and governance.[15] Equally important from a policy perspective is the conclusion that the ultimate effect of human insecurity and environmental degradation tends to be political instability,[16] which in turn sows the seeds for insecurity at the nation state level.

The four country studies presented here support the conclusions of the 2003 study. They indicate that for the natural resource-dependent poor, 'scarcity' of resources—the trigger for conflict posited in the environment and security literature in the 1980s-1990s—is as likely to be a result of institutional failure as of actual resource degradation.

CONCEPTUAL BACKGROUND FOR THESE STUDIES

In 1999, The World Conservation Union (IUCN) undertook a *State-of-the-Art Review of Environment, Security and Development Cooperation* for the Organisation for Economic Co-operation and Development (OECD) Development Assistance Committee (DAC).[17] This review synthesised the research and trends in the debate on environment and security and looked at the implications for development cooperation. Subsequently, IUCN and the International Institute for Sustainable Development (IISD) created a Task Force on Environment and Security whose mission was to make the case to the conservation community of the relevance of the links between environment and security for its work. The Task Force published its findings as *Conserving the Peace: Resources,*

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9 *Ibid*., pp. 11-12, citing Elliott, Lorraine. 2001. "Regional Environmental Insecurity: Pursuing a Non-traditional Approach". In *Non-traditional Security Issues in Southeast Asia*, A.T. Tan, J.D.K. Boutin (eds.). Select, Singapore. p. 449

10 *Infra*., p. 51.

11 Among them: Ohlsson, Leif. 1999. *Environment, Scarcity and Conflict: A Study of Malthusian Concerns*. University of Göteborg.
Stewart, Frances. 1998. The Root Causes of Conflict: Some Conclusions. *Working Paper Number 16, QEH Working Paper Series QEHWPS16*. Queen Elizabeth House, University of Oxford.
Homer-Dixon, Thomas F. 1995. The Ingenuity Gap: Can Poor Countries Adapt to Resource Scarcity? *Population and Development Review* 21, Number 3 (September): 587-612.
Homer-Dixon, T.F. 1994. Environmental Scarcities and Violent Conflict: Evidence from Cases. *International Security* 19, Number 1 (Summer): 5-40.

12 Najam, 2003(b), *ibid*.; infra, p. 51.

13 Najam, *ibid*., p. 10.

14 Najam, 2003(a), *ibid*. pp. 253, 250.

15 *Ibid*., p. 254.

16 p. 255.

17 Dabelko, Geoffrey, Steve Lonergan and Richard Matthew. 2000. *State of the Art Review on Environment, Security and Development Cooperation.* Paris and Geneva: OECD Development Assistance Committee/IUCN.

Livelihoods and Security,[18] an examination of natural and human-induced processes that lead to scarcity and vulnerability, their impact on livelihood security, and the potential for non-violent adaptation to them.

Security literature had looked at the environment/security link in basically two ways: the effects of war on the environment and natural resources; and the ways in which resource scarcity and environmental degradation lead to insecurity and violence. Both of these approaches are environment-focused rather than human-focused. *Conserving the Peace* demonstrated the human-centred links among natural resources, livelihood security and conflict, and posited that livelihoods are the "missing link between poverty, environmental degradation and conflict."[19] *Conserving the Peace* identifies five scenarios under which loss of livelihood security leads to or aggravates conflict. Four of those scenarios are characterised by inequitable access to natural resources and unsustainable or incompatible use that leads to scarcity and vulnerability.[20]

The studies presented here examine an underlying issue implicit in each of those scenarios—the existence and quality of rights to natural resources and the role of resource rights in sustaining livelihoods and mitigating conflict. What is the effect on security when communities have no rights or only 'soft' rights to the natural resources on which their livelihoods depend? *Conserving the Peace* cites the observation that natural resources are often located in areas where property rights are "undefined, unenforced, or contested."[21] The South Asian overview in the same volume notes that land tenure and poverty are clearly interrelated in north-western Pakistan and that efforts to alleviate poverty will be only marginally successful unless they address the issue of property rights.[22] A recent assessment of forests and rural livelihoods lists greater and more secure access to resources as the first of two opportunities for government action to promote livelihood security and notes that there are surprisingly few studies documenting the magnitude of the benefits of secure rights.[23]

Conserving the Peace started from the premise that conflict disrupts livelihoods or threatens the natural resource base.[24] These four studies find that conflict is a result of disruption of livelihoods, which in turn are unsettled by denial of traditional rights to the natural resource base and/or to inequities in how statutory rights regimes are applied.

The premise of this study was that the next connection to be made is to link environmental security to livelihoods, which allows environmental security to be linked to issues of equity and social justice. For people and communities dependent on natural resources, the link between livelihoods, the environment, and security can be framed by the issue of rights to access and use resources and the institutional arrangements which define rights and access.[25] Natural resource-dependent individuals and communities become marginalised because they either have no rights to the resources on which they are dependent, or no feasible way to exercise the rights they do have. Clashes between traditional and contemporary systems of property rights are often at the root of livelihood and environmental insecurity.

Land and resource rights are highly sensitive issues, culturally and politically. They must be addressed objectively and in conjunction with other variables in the equation of environmental insecurity—resource degradation, population increase, and differences based on group identities of race or class. The environment-security nexus is not a simple, two-way intersection. Conflict has multiple political and other social causes and effects. By focusing on resource rights and their consequences for livelihood and environmental security, this study does not discount the other elements of this complex issue. Nor does it attempt to reduce environmental security to a governance

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18 Matthew, Richard, Mark Halle, Jason Switzer, eds. 2002. *Conserving the Peace: Resources, Livelihoods and Security*. International Institute for Sustainable Development and IUCN-The World Conservation Union. Winnipeg.

19 *Ibid*., p. 17.

20 *Ibid*., p. 390. The fifth scenario, use of natural resources and ecological services to finance conflict, was outside the scope of the project on which this report is based.

21 *Ibid*., page 22.

22 *Ibid*., page 82.

23 Kaimowitz, David. 2003. Forests and Rural Livelihoods in Developing Countries. Center for International Forestry Research.

24 Matthew et al (eds.), p. 14.

25 *Infra*, p. 51.

issue—it's broader than that. This study focuses on one element of the complexity—resource rights—at the level closest to the resources as well as to the groups and communities whose security depends on them, to contribute a rights perspective to meeting the environment/livelihood/security challenge.

THE COUNTRY STUDIES

The studies which follow address issues of resource rights, livelihood security and conflict in four South Asian countries: Bangladesh, India, Nepal and Pakistan. They focus on two ecosystem types—forests and wetlands—that are characterised by conflicted resource rights regimes the world over, not only in South Asia. The studies in Bangladesh and Nepal were carried out in wetland sites. The studies in India and Pakistan focus on forest resources.

Bangladesh

The vast majority of Bangladesh's population depends for its survival on wetlands which cover more than half of the country's geographical area. Tanguar Haor, the study area in Bangladesh, is a wetland characterised by a large, bowl-shaped tectonic depression that becomes an expansive body of water in the monsoon season, receding in the dry season. Most economic activity carried out in the area, including commercial fishing, trade in fuel wood, hunting and trapping waterfowl, the harvesting and sale of grasses and reeds, and farming, is based on wetland resources; more than two thirds of households in Tanguar Haor are either directly or indirectly dependent on the wetland.

At least as far back as the 8th century, land grants included an entitlement to the waters on the land. Wetland fisheries in pre-colonial Bangladesh were traditionally managed as common property resources through complex systems of rights evolved in and enforced by local communities, which persisted through Mughal rule up to the early 17th century and the arrival of the British East India Company. The British instituted a system of revenue contracts rather than property rights, which was the genesis of a series of leasing systems that has cast a long shadow over resource rights through the centuries. In most of Bengal, these contracts were awarded to *zamindars*, landowners who collected land revenue of behalf of the colonial administration, keeping a percentage for themselves. The region that was the study area was an exception. Contracts, or leases, were awarded directly to local farmers. These contracts did not recognise customary rights and although the land was supposed to have been surveyed and demarcated, in most cases that did not happen and tenant farmers had no means of proving their property rights.

From the time of the colonial administration, access to fisheries and other wetland resources was dominated by complex systems of private leases that varied from place to place and over time. It was during this period that the traditional property rights of fishers and non-fishers began to be regulated and restricted through statutory law. Leasing was often short-term, with few incentives to protect fish stocks and every incentive to maximise income by intensive fishing. Some fishers managed to become lessees but the majority did not and throughout the colonial period had practically no property rights in water or in fish.

Abolition of the *zamindari* system and reforms of the leasing system, intended to support landless families and subsistence fishers, were subverted by individuals who essentially perpetuated the sharecropping and fisheries leasing systems by using landless families and poor fishers as a front to acquire government land allotted to the landless and fisheries leases intended for cooperatives of poor fishers. Landless allottees farmed land that was legally theirs but had to give up the major share of the harvest to the individuals who had used them as a front to acquire the land. Toward the end of the leasing system, the leaseholder excluded local fishers altogether, bringing in outside fishers as labourers instead.

Leasing in Tanguar Haor was abolished by law in 2001 when the area was designated an ecologically critical area, and the lessee was removed in 2003. Tanguar Haor, currently and until 2011, is being managed by the Ministry of Environment and Forests. The role of local communities in this new arrangement is in the process of being defined but it appears that the new regime will involve a measure of exclusion, and further curtailment of their rights to access and use the wetland resources.

India

All over India, forests have been reallocated away from local communities, increasing social conflict and transforming the resource.[26] This is particularly true in the study site—Koraput District in the state of Orissa—which, under the constitution, is a Scheduled Area designated to provide protection and certain advantages for the Scheduled Tribes that make up the majority of its inhabitants.

A *zamindari* system similar to the one that operated in what is now Bangladesh functioned in the area that is Koraput today. Although a leasing system did not develop for forest resources in Koraput as it did for water and fisheries resources in Tanguar Haor, the pattern of abuses of rights is similar. Non-tribal individuals use tribal members as a front to acquire land designated exclusively for tribals. Private mortgages, which are technically illegal but are a widespread practice, effectively reduce tribal landowners to tenants on their own property.

The process of surveying land and settling land rights in what is today the state of Orissa started during the colonial period and continued until after Independence. The primary purpose of the exercise was to determine land revenue dues rather than to record rights in land. A policy decision of the central government not to recognise customary property rights during this process resulted in sweeping denial of rights that had been enjoyed for generations and ultimately resulted in criminalising traditional agricultural practices.

The decision not to provide tribal communities any form of tenure in lands used for shifting cultivation in particular has created a situation in which the classification of a substantial area of land in Orissa does not reflect historical or actual land use. The recording of shifting cultivation areas as government land has meant that the state government owns 70–90 per cent of the land in most villages in the hilly tracts of Scheduled Areas, even though most of these areas were being traditionally used for shifting cultivation. This situation is common in all hilly tracts of Scheduled Areas in Orissa. The subsequent designation of much of this land as reserved forest has further increased the gap between actual land use and the legal categorisation of land, and has created the basis for livelihood insecurity and conflict.

Statutory law enacted in Orissa within 15 years of Independence acknowledges that customary law exists and operates—and explicitly overrides it. While statutory law does provide mechanisms for landless people and others to assert claims to forest land and other government land, government authorities have the discretion to initiate most of the procedures required to implement them, disempowering the people whose livelihoods depend on access to the land and forest resources. The difference between actual land use and legal status also means that the government can divert for development and other projects lands that are legally government lands but which are nevertheless being used for subsistence farming, without compensating the de facto land users.

Statutory law, which grants substantial self-government authority to tribal communities in Scheduled Areas, explicitly makes the link between customary and statutory law, providing that state law “shall be in consonance with the customary law”. This law, however, like the laws that govern land and forests, is neither uniformly nor equitably applied.

The fundamental cause of insecurity—loss of rights to land and rights to access land—is also the primary trigger of conflict. In the study area, these conflicts range from verbal exchanges to physical violence and damage to property. Plantations established by various state government authorities to ‘rehabilitate’ shifting cultivation patches have been a source of conflict for 50 years. In some cases, villagers have occupied plantations and worked them themselves, while others have been repeatedly burned. Villagers have also come into conflict with forest department officials over sporadic attempts to move cultivators out of reserved forests. These efforts were largely unsuccessful, since villagers would return to their cultivation patches a few years after eviction. This cycle of eviction followed by reoccupation led to regular conflict between villagers and forest department officials. At the same

[26] Asthana, Vandana and Ashok C. Shukla. 2003. Sustainable Development as a New Security Paradigm for India. In *Environment, Development and Human Security*. University Press of America, Inc. Lanham, Maryland, USA. p. 54.

time, it opened up an avenue for corruption, with villagers reported to have paid bribes to be able to continue cultivation.

The central government's policy of joint forest management (JFM), while not statutory, is intended to enable communities living in and near forests to participate in forest management and share in the benefits, through partnerships with state forest departments. Orissa is one of 22 states in which JFM is being implemented. An ongoing, 10-year village-based initiative in the study area to sustainably manage an area of adjoining reserved forest has led to a well-stocked, regenerating forest in the protected patch. Because the initiative is being carried out on government land, it is technically illegal. Nevertheless, the state forest department approached the community about converting its successful management programme to a JFM agreement. The community refused because the structure that would have been imposed by the forest department would have taken away the autonomy of the village management committee and opened the community's initiative to greater control by the forest department, which the villagers do not trust.

Officially, environmental degradation in the study area is interpreted as a consequence of population growth, the poor agricultural practices of tribal communities and the lack of enforcement of environmental laws. What is missing from this analysis is the cumulative impact of the history of non-recognition of customary tenure dating back at least to the early 20th century, and the subsequent interaction with statutory law and its implementation since the 1950s, that has combined to produce natural resource degradation, livelihood insecurity and conflict.

The controversy over shifting cultivation is an example of how debate has been shifted away from the question of resource rights. The issue is not shifting cultivation, per se, but the fact that statutory laws and processes have been interpreted to deny tribal farming communities their customary rights over these lands. Existing literature on shifting cultivation and communal land tenure throws doubt on the orthodox view of the environmental ill effects of shifting cultivation.

Government attempts at ecological rehabilitation have foundered on the issues of resource rights and tenure. Conservation efforts by the state that were conceived without taking local people into account have not only threatened livelihoods but have at the same time increased pressure on resources elsewhere. The process of forest reservation, for example, failed to take into account customary land use at the time of reservation.

Current community forest protection initiatives demonstrate that it is possible to balance livelihood needs with those of conservation. The anomaly in these cases of successful natural resource management is that the actual land uses do not coincide with those of the formal system. The two land use systems exist in parallel at the discretion of state authorities in the case of land and at the discretion of central government authorities in the case of forests. Investment and development schemes have also failed because they did not take into account the resource rights roots of the problems of poverty and environmental degradation.

Having been removed from much of the land they traditionally cultivated and without security of tenure on the rest of their communal lands, tribal communities have not been able to make the transition to agricultural intensification that might have occurred in a more secure situation.

Nepal

While Nepal has more than 20 years of experience with community forestry in the *terai* (plains), community rights in the same *terai* area are less secure over other natural resources including wetlands resources such as water, fish and wetland flora. Like Tanguar Haor in Bangladesh, the study area includes an international wetland site designated under the Ramsar Convention on Wetlands of International Importance—the Koshi Tappu Wildlife Reserve (KTWR) and its buffer zone. The study area also includes land leased to the government of India for a barrage to support an irrigation scheme.

The 40-year conflict over resource rights in the Koshi Tappu area is often characterised as a 'parks vs. people' issue. In fact, the problems that continue today originated in disputes over compensation for land appropriated for the Koshi Barrage in the 1950s and 1960s. These disputes were aggravated

by similar complaints related to compensation for land appropriated to create the KTWR in the 1970s and remain largely unresolved.

Estimates of the number of wetland-dependent households in the study area vary from 57 per cent to as much as 88 per cent. Whatever estimate is accepted, it is clear that households in the study area rely significantly on the wetland to sustain their livelihoods. These wetland-dependent communities suffer directly as a result of access restrictions imposed on rivers and other wetland resources within the reserve and in the barrage area, while unregulated access permitted in communal land puts heavy pressure on available resources.

Property rights in the study area include government land directly controlled by line agencies, including the KTWR and buffer zone, government land under community management, and communal land as well as land under private ownership. Although Nepal has a long, documented history of customary communal land and resource tenure and management, residents of the study area were unable to recount any customary norms for managing and using natural resources in the study area. They refer to open access to communal land and waters for grazing and fishing. Because livestock and fish do not remain in one location, it appears that individuals and communities did not need to establish rights to use resources in one particular area.

Forty years ago, before the Koshi Barrage and the KTWR were established, people living in the area enjoyed unregulated access to fish, thatch grass and other wetland resources. Forty years later, access to these resources is regulated and restricted. Although local communities and individuals legally no longer have the same rights, they persist in the same practices because their options as they perceive them are limited. Conflict and insecurity arise because, in the four decades since the Koshi Barrage was constructed and the KTWR created, there has been no satisfactory resolution of the problems caused by cutting communities off from the resources on which the security of their livelihoods depends.

Conflict most frequently occurs between KTWR officials and local residents. The issues at stake are access to and use of reserve resources, and the impact of the reserve on private land and livelihood opportunities. Conflict over natural resources in the study area is rooted in perceived as well as actual inequities and threats to livelihood security. Such conflict is rarely violent, appearing rather in the form of disputes that arise as a result of the conflicting needs of stakeholders: protected area authorities seek to enforce their mandate, while local communities strive to secure access to the resources on which their livelihoods depend.

Compensation for land acquired by the government has remained a contentious issue in the KTWR and the leased area. A series of commissions has to date been unable to resolve disputes over compensation for the loss of rights to land.

Contradictory statutory provisions of various laws, particularly those related to the relationship between local elected authorities and statutory resource users groups, have also given rise to conflict. Disputes over hunting or the collection of birds and animals occur across the study area. Conflict also arises because specific resource use restrictions have been imposed in certain areas.

The single government response to conflict that has been generally successful is the one that provides local communities and individuals with certain soft rights to resources on which their livelihoods depend—the creation of the KTWR buffer zone.

The poorest, most marginalised individuals and communities are those whose livelihoods are most insecure. While existing law offers soft resource rights to members of users groups that can be established under different laws, the very poor confront substantial obstacles to participating in groups that could assist them. Language barriers and the lack of adequate information are two such hurdles, as is the fact that the very poor rarely have the luxury of taking time off from subsistence activities to participate in such initiatives. Even in groups established to facilitate benefit-sharing, moreover, the tendency is for elites to dominate decision-making and monopolise benefits. The widely lauded community forestry programmes, for example, are now starting to be questioned regarding their ability to improve livelihood security for the poorest of the poor, as new elites emerge within user groups.

Each component of this chronic conflict that impacts the livelihoods of local inhabitants is fundamentally an issue of rights—rights to land and resources that are either denied or restricted. The structural sources of this insecurity and conflict are the legal regimes that allocate rights and determine the degree to which these rights are secure. Particularly significant for the wetland-dependent communities in the Koshi Tappu area is the fact that there is no wetlands-specific legislation and no basis for communal rights in wetlands as such. Sectoral laws do provide for communal rights to use water and forest products, and to share in the management of protected areas and the benefits derived from them. There are, however, inconsistencies among these laws, and between sectoral laws and local government laws and regulations which limit the effectiveness of communal rights regimes. In the Koshi Tappu area, the issues are the quality and security of the resource rights that are available, and equity in the application of rights regimes.

The end to the decade-long Maoist insurgency, the drafting of a new constitution, and the focus during the post-conflict period on developing mechanisms for government and civil society to resolve conflicts without resorting to violence, is creating in Nepal an especially positive environment in which to address the sources of livelihood insecurity and related conflicts.

Pakistan

The study area, once part of a former princely state that acceded to Pakistan at Independence in 1947, is situated in Upper Dir district of the North West Frontier Province, and includes the Dir Kohistan valley and converging valleys. It is one of the most politically volatile and conflict-prone areas in the country.

The roots of this chronic instability lie in a host of factors including the political history of the area and the administrative arrangements that have been in place since 1973, when Dir was designated part of the Provincially Administered Tribal Areas (PATA) under the new constitution, which provides that the legal regime in force in the province does not automatically apply to PATA. Rather, the provincial governor is required to issue a specific notification extending laws to the tribal areas. In addition, the governor may also issue special regulations, with the approval of the president, for the governance of PATAs. Under the current statutory local government regime, people of PATA elect their public representatives through general elections, as do citizens elsewhere in Pakistan. These elected representatives participate in the national and provincial assembles but the laws they help to frame do not come into force automatically in their own constituencies. This incongruity has created legal complications for ordinary citizens as well as unique obstacles for efficient governance, primarily because laws applicable elsewhere in the province do not necessarily apply to PATA.

The local economy is based on subsistence agriculture, with poorly developed infrastructure and public services. The social structure is dominated by a traditional tribal culture, where castes and clans are known to participate in running feuds, and enmities have in some cases been kept alive over several generations. The traditional dispute resolution mechanism, the *jirga*, adjudicates property and resource rights conflicts by seeking conciliation between feuding individuals, villages or clans, and invariably settles such differences amicably.

Resource rights in the study area are governed by a statutory regime that focuses on policing and makes few guaranteed provisions to secure the access and use rights of communities. A rich and finely nuanced body of customary law, based on varying degrees of communal ownership and shared access for all members of the community, applied until more than a century ago when a relatively egalitarian tribal structure was supplanted by a political order centred on a single ruler, the nawab, and customary rights began to be whittled away. Customary rights were never recorded but were common knowledge among tribal individuals and communities. Under the nawabs, the system of patronage that supplanted customary law to determine rights over land and resources on the land, in many cases curtailed the customary entitlements of communities in favour of groups perceived to be outsiders. These arrangements also vested in the nawab de facto control over Dir State's rich forest resources.

After Dir State acceded to Pakistan, the nawabs' de facto control over forest resources was assumed by the government. In 1971, Dir's forests were declared to be government property and local rightsholders were granted a 15 per cent share of the income derived from commercial timber sales.

The royalty, however, is paid to administrative officials who are responsible for distributing the funds among rightsholders. Much of the tension and conflict surrounding the issue of royalties and entitlements today dates back to that era.

One of the greatest difficulties in securing the resource rights of communities is the fact that the statutory regime governing natural resources focuses on the management and control of the resource itself rather than the rights of those who depend on the resource for their livelihoods. While welcome provisions have been made in more recent legislation governing forests in the province to include communities in both management and decision-making, these rights are not guaranteed by law and are granted at the discretion of government officials.

Communities that are entitled to receive royalties are routinely manipulated and cheated by timber contractors, forest officials and in some cases even their own tribal elders all working in collusion. An even greater cause for concern is the fact that many communities with customary claims in forest areas are denied the right to royalty payments altogether. Their exclusion owes largely to the fact that no means exist to verify their claims. The land grants that were awarded by the nawabs to their favourites, overriding customary rights, are today a key source of tension between communities because claims to forest royalties are asserted based on these grants.

Within communities, this tension has caused resentment and disaffection but not open conflict. Violent conflict over the issue of forest royalties pitched local communities against the state in the 1970s, when the military bombed the valley. Public agitation over non-payment of royalties for timber cut prior to a logging ban imposed in 1993 continue to fester today. Regrettably, such incidents have not elicited policy changes. The government tends to view resource-related conflict as isolated incidents rather than a manifestation of the results of denial of rights or a symptom of a broader failure of governance.

The question of resource rights is without doubt the most obvious issue affecting the lives and the livelihoods of the people in the Dir valley. It has been more than 30 years since the forests of Dir were taken over by the government and declared to be ‘protected’ by law. And it is since that time that disputes over royalties have been foremost in the minds of the communities and individuals who lay claim to these forests. The disaffection created has taken an explosive turn on many occasions in the past, reflecting the frustration and perceived helplessness of the communities concerned. The long-standing conflict between local communities and forest authorities over royalties has never been resolved to the satisfaction of all stakeholders. But royalties are only one aspect of the resource rights issue. Communities depending for their subsistence on forest, river and rangeland resources also need to be taken into consideration.

An equitable resolution to the chronic issue of resource rights is perhaps not as difficult as it appears to be. Recent jirga mediation, though unacceptable to some, has at the very least demonstrated that solutions are possible. Government responses to resource rights conflicts will continue to be hampered by the unusual administrative arrangements that are in place in the PATAs. As long as the law is selectively applied to these areas, justice will continue to be administered selectively as well. Without access to justice, communities have at their disposal no legitimate means to address iniquities in the resource rights regime, or to earn for themselves even those rights to which they are entitled by law.

COMMON ISSUES

The current focus of security analysis on civil disruption, rather than inter-state conflict, is validated by the history and current situation in the study areas in all four countries. The country studies also corroborate the findings of the 2003 review of environment, development and human security in South Asia that the drivers for insecurity and conflict are failures of institutions and governance.

Since colonisation, the trend in all four countries has been a reduction in resource rights for individuals and communities whose livelihoods depend on natural resources. In Bangladesh and India, some of the measures used to reduce resource rights have actually been illegal under existing national laws. One of the principal reasons for the reduction in rights in Bangladesh and India is non-recognition of traditional rights to land and resources. In Bangladesh, although rights were settled

during the colonial period in a substantial percentage of the local population of the study area, they were not documented which meant that they were subsequently ignored and/or overridden and impoverished rightsholders were unable to defend them. In India, beginning with the colonial administration, initiatives to survey land and settle claims did not recognise traditional rights to land, effectively extinguishing them. Central and state government studies have acknowledged these flawed processes but remedies have been provided in only a handful of cases. Property rights have been recorded in only a few instances in the study area in Pakistan. As long as rights disputes are resolved through traditional, community processes, this lack of formally registered rights generally does not pose a problem; conflict arises when there are attempts to assert rights through the judicial system. In Nepal, after decades of fruitless attempts by national commissions to resolve issues of compensation for appropriations, rightsholders who had certificates proving their claims allege that those certificates have been misplaced by the authorities to whom they submitted them for review, meaning that they no longer have any means to prove their claims. Each of these situations is a result of institutional and governance failure.

Statutory law makes available concessional rights to wetlands resources, including leases and permits, in Bangladesh and Nepal. But the costs of acquiring such rights in both study sites are beyond the means of the resource-dependent poor. In Bangladesh, reform of the leasing system in the 1970s to allow poor fishers to form cooperatives to bid for fishing leases was abused by non-fishers who could pay the lease fees, used such cooperatives as a front to acquire the concessional rights for themselves, and then forcibly denied local fishers access to fisheries resources. In Pakistan, similar abuses of concessions and royalties occur in the context of forest resources. In the Nepal study site, permits to access wetland resources are inequitably awarded at the discretion of local authorities.

The situations at the study sites in all four countries demonstrate a fundamental disconnect between central government policies and laws and local realities, which has led to unrealistic, inappropriate and inequitable resource rights regimes. Existing laws that govern and affect resource rights are not applied consistently in any of the study sites.

Although there was considerable civil unrest in what is now Bangladesh in the late 19th and early 20th centuries over property rights issues, and in spite of increasingly well-organised civil society campaigns in India in support of rights for the resource-dependent poor, resistance in the study sites to the incremental decline in resource rights has primarily been characterised by localised outbreaks of conflict rather than concerted or organised action at the national level. This type of response can be attributed to a combination of factors in each study area, including a lack of reliable data available to local communities and individuals on resource rights, their limited access to data that does exist, a general lack of awareness within communities about rights they may have, inequitable application of rights regimes by local authorities, and the relatively high cost to the resource-dependent poor of defending the rights that they do know they have.

The quality and relative accessibility of conflict resolution mechanisms can determine whether conflicts are settled or escalate into violence. In Pakistan, although traditional dispute resolution mechanisms have in some cases operated to settle local conflicts, long delays in settling cases related to concessions and royalties through the judicial system have added to tensions over unresolved rights issues. The judiciary in India is currently exercising quasi-executive and legislative powers over forest resources that significantly impact resource rights. While the intention is to support sustainable use of forest resources in the country, the side effects of the ongoing, 10-year process are also fuelling uncertainty and generating new issues of conflict between national and state forest officials and local communities. A dozen commissions established over the past 30 years in Nepal have failed to resolve claims for compensation for land appropriated for a bilateral development scheme and for the creation of a nature reserve. In each case, the difficulties in resolving property and resource rights disputes are due at least in part to the fact that the resource-dependent poor have no means of providing verification of the basis for their claims, as noted above.

Resource rights in the study sites in Bangladesh, India and Nepal are negatively impacted by development initiatives in which local communities and individuals have little or no opportunity to participate. In the case of India, local communities have resorted to violence, invading and burning plantations established on land to which they claim traditional rights. Both of the wetland study sites, in Bangladesh and Nepal, are affected by transboundary water management schemes. Upstream

dams in India have altered the flows of water to the downstream wetland in Bangladesh. In Nepal, property rights were appropriated, in most cases without compensation, to acquire land subsequently leased to the government of India under a bilateral agreement for construction of a barrage to divert water for irrigation downstream to India.

There is voluminous literature examining property rights issues in the developing world, particularly in Africa, with some focus on Asia. Early research and commentary looked primarily at the legal aspects of property and resource rights. Many contemporary studies focus on the economic dimensions of property and resource rights and their influence on conflict. Much of this work examines the consequences rather than the causes of open access to resources—the so-called 'tragedy of the commons'—and of how property rights regimes can degenerate into open access. A recent study proposes that understanding property right failures in the developing world must look beyond conventional legal and economic theories of the evolution of property rights to how property rights are enforced.[27] While this study looks at open access primarily in terms of land, many of its conclusions are relevant in the context of access to resources as well and largely reflect the findings of the four South Asia studies reported here. Property rights analysis, like environment and security analysis, highlights failures of governance.

Before the emergence of modern nation states, most societies evolved customary law and norms to govern property and resource rights. Erosion of customary law and of the societies which developed it has often been the result of a state decision not to recognise it, or state failure to support it where it is recognised, or both. The breakdown of customary law is at the root of many property rights failures in the developing world today.[28]

The suppression of customary resource rights norms is an important contributing factor in civil disturbance and conflict in three of the four study sites reported on here. Only in the Nepal study site does open access appear to have functioned without creating a need to establish customary property and resource rights norms. The greater the divergence between statutory and customary law, the more likely it is that attempts to enforce statutory law will lead to 'open access' in the form of encroachments and other 'illegal' actions as local people continue to engage in traditional activities in support of their livelihoods.[29] This is clearly demonstrated in the study sites in both India and Nepal, where local people endure repeated cycles of eviction and reoccupation of land where the resources their livelihoods depend on are to be found. Long-term conflict results when poor traditional occupiers are dispossessed but statutory enforcement mechanisms are incapable of maintaining consistent implementation of statutory prohibitions.[30]

In customary law systems, property rights are both a result and a cause of resource conflicts. They are not so much entitlements created by rational market forces as they are "processes and products of constant negotiation, contestation, and compromise".[31] The successful community-driven initiative to manage a patch of forest in the India study site, with its own dynamic set of rules for using forest resources, illustrates this point.

In economic terms, the process of allocating resource and property rights is likely to create its own externalities in the form of social conflict,[32] particularly where customary resource governance has evolved separately and diverged from statutory mechanisms.[33] Establishing and enforcing property rights is therefore closely linked to social order and civil disturbance,[34] especially in the cases of each of the study sites where the state has allocated rights to itself, ignoring pre-existing norms. The observation that attempts to replace customary systems with statutory ones have succeeded only in creating legal pluralism and widespread illegality[35] is borne out in all four study sites.

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27 Fitzpatrick, Daniel. 2006. Evolution and Chaos in Property Rights Systems: The Third World Tragedy. 115 Yale Law Journal 996.
28 Ibid., p. 1047.
29 Ibid., p. 1002.
30 Ibid., p. 1013.
31 Ibid., p. 1008.
32 Ibid., p. 1009.
33 Ibid., p. 1011.
34 Ibid., p. 1010.
35 Ibid., p. 1012.

Simplistic application of the developed world's legal categories to the complex and fluctuating interrelationships that characterise resource rights in the developing world is a formula with inherent potential for conflict.[36] In a world where many developing countries are striving to reduce poverty and meet the Millennium Development Goals, the legal and economic implications of criminalising activities that support the livelihoods of a significant percentage of a country's population deserve further examination.

Particularly in the context of contemporary support for rights-based approaches to sustainable development, the implication for development aid policy is that interventions should not unquestioningly promote imposition of externally pre-determined concepts of property rights regimes. In order to reduce and mitigate resource rights-based conflict and promote livelihood security, development approaches should be more nuanced and responsive to local conditions. They should not necessarily be driven by the interests of developing nation states, as those interests are likely to be tied to governance mechanisms inherited from colonial regimes that systematically ignored and overrode customary norm-based systems, engendering long-term, seemingly intractable conflict.

Instead of rote exhortations to establish secure property rights, development aid needs to support social, economic and legal assessments of the fundamental issues that have created resource rights-based conflicts and the preparation of locally-appropriate detailed proposals for property rights reform that address the issues of both statutory law and customary norms.[37] To do this will require substantial investment in documenting customary law, where that has not been done already, and conducting comparative analyses of customary and statutory law to provide justifiable recommendations for statutory law reform that will allow legislating away from conflict, rather than into it.

Where development aid supports natural resource conservation, projects should explicitly address the impacts of the interventions on resource rights and in particular examine how absence or abuse of rights and/or inequitable application of rights regimes affects conservation, sustainable development and especially livelihood security.

In South Asia, environment and security need to be conceptualised in the context of sustainable development.[38] In all the study areas, deep-rooted constraints to livelihood security in addition to resource rights issues remain to be addressed. Securing livelihoods cannot be simplified into a campaign against conflict and other symptoms of insecurity.[39] Poverty and lack of access to basic public services such as heath care, education, and communications infrastructure continue to be chronic problems in all four study sites and indeed in many other parts of all the countries involved in this study.

All four country studies demonstrate that the problem of environment and security in South Asia is an issue of institutions and governance.[40] In some cases, failures are the result of deliberate choices on the part of the state, as in the case of non-recognition of customary resource rights in India. In others, the failures are the result of well-intentioned but poorly implemented attempts to remedy inequities in resource rights regimes, as in the case of the reforms of the leasing system in Bangladesh. In still others, they result from the reluctance of the state to relinquish control over resources and the revenues they generate, including state connivance in undermining even the statutory regime, as in the case of forest royalties in Pakistan.

In South Asia, the local challenges of melding environmental conservation, livelihood security and conflict mitigation are more profound than regional ones, although they are common to all South Asian countries.[41] The 2003 study on environment, development and human security in South Asia

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36 Ibid., p. 1014-1015.
37 Ibid., p. 1009.
38 Najam 2003(a), p. 249.
39 See, for example, Matthew, Richard and Bishnu Raj Upreti. 2005. Environmental Stress and Demographic Change in Nepal: Underlying Conditions Contributing to a Decade of Insurgency. In *Special Report·Environmental Stress and Demographic Change in Nepal*. ESCP Report, Issue 11.
40 *Ibid*., p. 252.
41 Najam, 2003(a), p. 251.

concluded that the best thing each country can do for the region as a whole is clean up its own act at home.[42]

These studies reiterate the need to apply inter-disciplinary approaches to development assistance that combine legal and socio-economic approaches to resource-specific issues of resource rights, rather than applying each discipline independently of the others.

[42] Ibid., p. 252.

Livelihoods, Security and Conflict

TANGUAR HAOR, BANGLADESH

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IUCN Bangladesh Country Office

ABBREVIATIONS

BCAS	Bangladesh Centre for Advanced Studies
IUCN	The World Conservation Union
SAT Act	East Bengal State Acquisition and Tenancy Act
MoEF	Ministry of Environment and Forests
MoL	Ministry of Land
UNDP	United Nations Development Programme

GLOSSARY

baor	oxbow lake or wetland formed when a river changes its course and a section of it is cut off by siltation. A *baor* is more stagnant than a beel and generally has water year-round.
beel	marshy, saucer-shaped depression, formed by erosion, that floods during the wet season
haor	bowl-shaped depression located behind the natural levee of a river and/or between the natural levees of rivers, comprising a number of beels that merge into a large water body during the monsoon
ijaradar	lessee or leaseholder
jalkar	water bodies attached to the zamindari estates; *jalkar* rights covered non-navigable rivers, beels, haors, ponds and tanks
jalmahal	any water body, natural or artificial, open or closed, flowing or stagnant where activities for growing fish or for conservation, development, demonstration, breeding, exploitation of fish or living aquatic organisms are undertaken; in Bangladesh, fisheries resources are administratively defined as jalmahals
kanda	raised ground; old natural levees
khas	literally, ‘special’; refers to government property, and used with reference to land
taka	Bangladeshi currency (1 US dollar = 58 taka approximately)
tank	large pond
zamindar	landowner; rent receiver

INTRODUCTION

The vast majority of Bangladesh's population depends for its survival on wetlands which cover more than half of the country's geographical area. In some parts of the country, these wetlands occur in the form of a haor, a large, bowl-shaped tectonic depression that becomes an expansive body of water in the monsoon season and recedes in the dry season (Alam and Hossain, undated). This study focuses on one such area, the Tanguar Haor, and on the communities who derive their livelihoods from the resources of this wetland.

Land and resource rights in Tanguar Haor are unclear and undocumented, with a history of conflict over resource use. The marshes here were once leased out for fisheries resource extraction, a practice that was officially discontinued when management of the Tanguar Haor was handed over to the Ministry of Environment and Forests (MoEF) by the Ministry of Land (MoL) in February 2001.

In addition to ambiguous resource rights regimes and uncertain land tenure, major issues of concern at Tanguar Haor include wetland biodiversity depletion owing to the over-exploitation of flora and fauna; the degradation of swamp forest and reed lands; ineffective management leading to poor socio-economic conditions; and flash floods resulting in the loss of human life and damage to crops, homes and infrastructure. Field surveys and meetings identified the following causes of insecurity: current and previous resource rights regimes governing land titles and natural resource extraction; resource degradation; and the lack of awareness of the relationships between these factors among policy and administrative bodies and personnel. These factors serve as triggers for conflict, mostly between former leaseholders and local communities, aggravated by disputes within local communities themselves. Conflicts arose over rights to control resources, including water levels, monsoon fishing, dry season grazing, duck rearing, and the harvesting of reeds and grasses.

This study examines issues of environmental security, governance and conflict, focusing on environmental security from the perspective of rights to natural resources and the impact of resource rights on livelihood security—the 'missing link' between poverty, environmental degradation and conflict.

METHODOLOGY

Desk studies were conducted of the relevant literature on wetland resource management and socio-economic conditions in Tanguar Haor. Meetings with local communities, functionaries of government institutions and community-based organisations were held in order to gather information on customary management practices, to understand the degree of resource dependence and the extent of resource degradation, and identify recent trends. At the same time, participatory rural appraisals consisting of focus group discussions were organised to facilitate consultations with local communities, local government functionaries and community organisations.

The team undertook three field visits to the study area, the first a reconnaissance trip, and the others to conduct detailed surveys. Stakeholder identification was conducted during the reconnaissance visit. The second visit to Tanguar Haor was made during the monsoon season, when unemployment is rife in the region and local communities suffer acute hardship in the absence of a source of income. A detailed survey was conducted, employing both qualitative and quantitative research methods, including questionnaire surveys, focus group discussions and key informant interviews to gather information from selected villages. Some 46 settlements located in or around the Tanguar Haor depend on its resources. Of these, seven villages—Bangalbhita, Golabari, Indrapur, Lamagaon (inhabited by the indigenous Khasi community), Mondiata, Mujrail and Vinodpur—were selected for their comparatively greater dependence on wetland resources. A total of 186 questionnaires were filled out and seven focus group discussions were conducted during the monsoon field survey.

The third and final field visit was conducted during the onset of winter, when the waters begin to recede and the hardship of the people gradually begins to ease. The purpose of this visit, which took place after the leaseholder and his guards were no longer present in Tanguar Haor, was to gather additional information about the most recent developments in the area.

DESCRIPTION OF THE STUDY AREA

Recognised as Bangladesh's most important 'mother fishery', Tanguar Haor was selected as the study site not only because the area has a history of conflict over resource rights, but also because the wetland is both commercially important and significant for biodiversity conservation.

One of the few remaining semi-natural haors in the country—semi-natural because some degree of human intervention has taken place—Tanguar Haor is the best representative of a wetland ecosystem in Bangladesh, with immense value in terms of flood water retention as a source of irrigation water and for groundwater recharging. Home to of the last patches of freshwater swamp forest in Bangladesh, water quality at Tanguar is relatively good, allowing the area to serve as a habitat for many wetland species. By Bangladeshi standards, the haor possesses great scenic beauty and high wilderness value, despite being frequented by fishers. Local communities lead a traditional way of life, in terms of livelihood opportunities and access to modern-day amenities. There are no roads or electricity in the area.

Covering an area of 9,727 hectares, the site is located in the north-east of the country at 25° 06' to 25°11' N and 91°01' to 91°06' E, within the territorial jurisdiction of the Sunamganj district of Sylhet division (Giesen and Rashid, 1997). Of the total area of Tanguar Hoar, 2,800 hectares, or approximately 29 per cent is wetland (Talukdar, undated). One third of the area falls under the jurisdiction of the Tahirpur thana (police station) and the remainder under Dharmapasha thana, both in Sunamganj district.

Situated in the floodplain of the Surma River, Tanguar Haor is part of a large lowland region that is bounded by the Tripura hills to the south and the old Brahmaputra River course to the west. On the northern side of the haor basin lies the Shillong plateau, located in the Indian state of Meghalaya. On the east, south and west, Tanguar Haor is skirted by the Matian Haor, Shonir Haor, and Halir Haor, respectively.

Tanguar Haor consists of about 50 beels—deeper, perennially flooded parts of a haor which are rich in fish. These areas retain water during the dry winter months. In between the beels lies higher ground, known locally as *kanda*, which is planted with wetland species in order to restore wetland forests. During the monsoon, from April or May until October, the beels merge to form a single, large body of water, called a haor. Such areas remain under water for several months each year and drain gradually during the winter. Tanguar Haor is an ecologically rich wetland where an abundance of fish, birds and plant life, as well as the area's human inhabitants, have adapted to the unique phenomenon of deep annual flooding. Some 46 villages, home to 25,000 inhabitants, depend on the natural resources of the haor with the majority of local residents involved in farming and fishing.

On 19 April 1999, the Bangladesh government declared Tanguar Haor to be an 'ecologically critical area' under the Environment Conservation Act 1995. The following year, on 10 July 2000, Tanguar Haor was declared a Ramsar site in recognition of the fact that each year the area is home to 98 species of migratory birds numbering about half a million at the peak period at the end of February.

HISTORY

The Tanguar Haor basin has seen several centuries of human habitation. By the late 18th century, almost all arable land in the area had been brought under cultivation. Haor residents also raised livestock, even though wetland conditions generally do not favour such activity. During the period 1780–1900, the population of the haor basin declined as a result of environmental stresses caused by successive natural calamities which rendered the ecosystem even less favourable for animal husbandry. Massive outward migration during this period caused the area to become virtually depopulated by the 1860s. The ecosystem recovered, and from the first quarter of the 20th century the area again began to attract settlers from the densely populated surrounding regions.

In 1793, the British colonial authorities in India carried out what was known as the 'Permanent Settlement' of Bengal, awarding land to rich 'natives' in exchange for a fixed annual revenue payment. After 1793, the Tanguar Haor area came to be controlled by the zamindars (landowners) of

Bangshikunda, who retained control until 1920, when stewardship of the haor was transferred to the zamindars of Gouripur, Mymensingh.[1] In the late 19th and early 20th century, zamindars in Tanguar Haor presided over a leasing system as way to raise the rent they had to pay to the British. The leasing system was based on the *likhon*, a handwritten lease issued by the zamindar that described an indicative demarcation line and approximate area of land leased.

Following independence from colonial rule in 1947, and the partition of British India, the Tanguar Haor area became part of what was then East Pakistan. Prior to Independence, most fishers and fish traders in haor areas were Hindu. After 1947, many rich Hindu fishers migrated to India and their place was taken by Muslim fishers, known as *mahimals*. Eventually, a handful of the rich *mahimals* became influential leaseholders in the permanent beels of the haor area (Pokrant et al, 1997).

RESOURCES

For generations, Tanguar Haor has provided its inhabitants with nearly everything they needed for their subsistence, including rice, fish, vegetables, pasture, wild fruit, building material and fuel. Fish is the most important of all the resources taken from haor waters, but area residents also harvest rice and a number of other crops and medicinal plants, both cultivated and wild, which are a major food source for the landless and destitute during the monsoon and the pre-harvest winter months. The ecosystem services provided by Tanguar Haor are yet to be fully documented.

Tanguar Haor supports as many as 150 of an estimated total of 200 wetland plant species occurring in haor areas across the country. Tanguar Haor is also home to 141 varieties of fish, more than half of Bangladesh's 260 freshwater fish species. This includes 55 fish species that are threatened in Bangladesh, of which 28 are endangered. Of these 28 endangered fish species, 17 are found only in Tanguar Haor. In addition, 11 amphibians, 34 reptiles, 206 bird species and 31 mammals are found in the area (Giesen and Rashid, 1997). During the winter months, Tanguar Haor sees the arrival of more that half a million migratory water birds (Halder, 2005; Rasheed, 2005). Winter is also the time when the Pallas's fish eagle nests in wetland trees, and the Bengal rose blooms in the fields.

Tanguar Haor experiences a typical tropical monsoon climate and rains are brought to the area mainly by the south-west monsoon winds which blow from June to September. Annual rainfall ranges from 5,000 to 6,000 millimetres (Giesen and Rashid, 1997). The wettest months are June, July, and August, while the winter from November to March is relatively dry.

The resources of Tanguar Haor are subject to the same processes that degrade ecologically fragile inland wetlands elsewhere in the country, including over-exploitation of resources generally, a decline in fisheries production, the depletion of other natural resources such as reedlands, decreasing migratory waterfowl populations, and rapidly disappearing swamp forests.

The lush coverage of swamp forests in the area has now almost disappeared as a result of clearing, cutting and other human activities. Natural regeneration has not occurred because of increasing pressure from fuel collection and browsing. Reed beds and other wetland habitats are also on the decline, owing to continued over-harvesting for fuel and thatching, and the conversion of land into agricultural fields. Some 10,000–15,000 waterfowl are caught or trapped every year. Shellfish and turtles were once found in such abundance throughout the country that these species were considered commercially important enough to be included in the legal definition of 'fish'. As is the case elsewhere in the country, in Tanguar Haor too these species have been overexploited to the extent that they are no longer of any measurable importance to livelihoods in the area. The depletion of resources has contributed as well to the disappearance of certain common aquatic species, threatening the integrity of the haor ecosystem.

[1] During Mughal rule, Gouripur was an estate in the Momenshahi pargana (now Mymensingh). Under the British, it was designated a district. Today, Gouripur is an upazila (sub-district). Mymensingh was designated as a district in 1787 and continues to be so today.

LAND USE

Land use in and around Tanguar Haor has been largely agricultural, with cropping patterns dictated by a combination of topography and the annual cycle of flooding and receding of waters. Higher grounds or *kandas* are cultivated with a variety of winter (*rabi*) crops and trees including fruit trees, and are also used for habitation. Low-lying areas are intensively used for rice cropping, while fishing activities are concentrated in the deeply flooded beels. The edges of the beels are not usually planted with rice, except in certain sections, but current trends show that this practice is on the increase. Some areas have been designated as 'forestry land' but these consist mainly of reedland and grassland. The annual agricultural cropping cycle, subsistence fishing and the extraction of other natural resources take place in synch with the hydrological regime (Giesen and Rashid, 1997). Fish cultivation was the primary non-agricultural land use in Tanguar Hoar.

Most traditional and cultural practices associated with management of the haor have long since disappeared. Historically, the area within Tanguar Haor has been a single-crop area, but with modern developments in agricultural science and extension activities, and with the introduction of high-yielding varieties of rice, the cropping pattern has changed considerably. Even so, single cropping remains the norm throughout much of the area. The availability of high-yield rice varieties provided farmers the incentive to increase rice plantation in the outlying areas of the wetlands, by encroaching on government-owned lands. The net result is that the conversion of non-arable land into cultivable land has been maximised over the last two decades. Only high-risk areas prone to flooding and crop loss, and semi-permanent water bodies such as the beels, remain as semi-natural habitats.

A 1997 survey of changes in local land use patterns shows a decrease in forest land from 18 per cent in 1947 to 5 per cent in 1996, and a paltry 3 per cent by 1997 (BCAS, 1997). Agricultural land, meanwhile, has increased from 58 per cent in 1947 to 67 per cent in 1996, and an aggressive 71 per cent today. This transformation in land use has resulted in the severe degradation of this once-pristine natural wetland.

Before the Bangladesh government declared it to be an ecologically critical area and, subsequently a Ramsar site, Tanguar Haor was classified as khas (government-owned) land and was administered by the deputy commissioner's office on behalf of the MoL. Administrative responsibilities were assigned to the additional deputy commissioner (revenue), based in the MoL office in Sunamganj, the district headquarters. This official administered the process of leasing khas jalmahals to members of the local elite under a designated 'development project'. The deputy commissioner's office was responsible for receiving lease fees and sending notifications to leaseholders regarding administrative matters.

Prior to 2001, the MoL leased the beels of Tanguar Haor for a maximum period of three years with a provision for subsequent renewals. On 12 February 2001, management of Tanguar Haor was taken over by the MoEF for a period of 10 years, to ensure the conservation and sustainable management of the resources of the Ramsar site. Following this move, lease agreements covering the area were annulled. The district administration took over the task of protecting Tanguar Haor, with the support of law enforcement agencies, in October 2003. During that interim period of more than two years, there was no land use management system in place. Local government union parishad (union council) offices operate in some of the larger villages but they deal mainly with administrative matters, not land and resource management. None of the line agencies involved in land and resource management, such as the agriculture, forest and fisheries departments, is represented at Tanguar Haor although some do implement programmes in the area, providing agricultural extension services or conducting sporadic fisheries monitoring exercises.

DEMOGRAPHICS

More than 46 villages are dotted around Tanguar Haor. They are home to some 25,000 inhabitants, most of whom are engaged in agriculture and subsistence fishing in the haor. Despite large-scale migration into the area, the population density of the haor basin is relatively low compared to the rest of the country. Most villages in Tanguar Haor support an average population of 500. Average household size stands at 5.8, the birth rate is high and 30 per cent of the population is below the age of 10 years.

According to a survey by the Bangladesh Centre for Advanced Studies, 100 per cent of the inhabitants of Tanguar Haor are ethnic Bengali, belonging either to the Muslim or Hindu faith (BCAS, 1997). Two more detailed studies carried out by the National Conservation Strategy Implementation Project and released the same year revealed that there are at least 11 villages, mostly located in the northern half of Tanguar Haor, where ethnic populations belonging to the Garo and Hajong groups reside (Ahmed, 1997). The latter study estimated that Hindu communities and ethnic groups in the area constitute approximately 20 per cent of the total population living in and around Tanguar Haor.

SOCIO-ECONOMIC PROFILE

The 25,000 local residents who depend on the wetland for their survival are poor, with an annual average per capita income of 133 US dollars, a little more than one third of the 2003 national average of 376 dollars (UNDP, 2005). The poorest groups are those whose primary sources of income are fishing, domestic labour, work in the services sector, or day labour. While farmers are slightly better off, 45 per cent of the Tanguar Haor population owns less than 0.5 acres of land and is technically classified as landless.

Adult illiteracy in the Tanguar Haor area is 48 per cent for males and 52 per cent for females. In the seven villages surveyed, 20 per cent of the residents are literate (see table 1), of whom only 5.5 per cent have completed secondary education. Of those who are counted as literate, only 25 per cent can read and write fluently. The remaining 75 per cent may have completed primary schooling, but can barely read.

Table 1: Population and literacy by village, Tanguar Haor (2003)

Village	Families	Population			Literate individuals
		Total	Male	Female	Total
Bangalbhita	211	1,143	578	565	224
Golabari	21	126	65	61	23
Indrapur	88	521	273	248	134
Lamagaon	296	1,401	721	680	311
Mondiata	124	751	405	346	111
Mujrail	29	140	78	62	40
Vinodpur	62	362	180	182	62
	831	4,444	2,300	2,144	905

Source: Field survey, 2003.

Tanguar Haor is not supplied with electricity, has few primary schools, no secondary schools, no hospital, no post-office, no banks or credit facilities, and no industry. Basic housing, health and hygiene services in the area are woefully inadequate. The seven villages surveyed, comprising a total of 831 families, have only 10 sanitary latrines and 19 tube wells. Four villages have no latrines and one village does not have a tube well. Only about half of the local population has access to safe drinking water, compared with nearly 95 per cent of the population in most other parts of Bangladesh prior to the country-wide alarm of arsenic contamination of groundwater was raised in 1995 (see table 2).

There are no roads connecting the villages, or leading out of the area to markets or the district police headquarters (thana sadar). During the wet season, boats are the principal means of transport; during the dry season, villagers walk or ride pillion on motorcycles. Since 2001, some areas within Tanguar Haor have been provided access to telephones through a network operated by a private company.

Unemployment in Tanguar Haor is increasing. Almost 18 per cent of adult males and six per cent of adult females temporarily migrate out of the haor each year to seek employment. Until the late 1970s, the major leaseholder, a fisherman from Tanguar Haor, employed local residents in fishing activities. Beginning in the 1980s, new leaseholders brought in seasonal fisher labour from the districts of Brahmanbaria, Hobiganj, Kishoreganj and Netrokona to live in temporary camps during the peak fishing season in late winter. The seasonal influx would swell the population of Tanguar Haor by nearly 20 per cent. This practice continued until the suspension of the leasing system after 2001.

Table 2: Standard of living, selected indicators, Tanguar Haor (2003)

Village	Households	Families[2]	Roof type		Sanitation			Tube wells
			Thatched	Corrugated iron sheet	Total	Open latrine	Pit latrine	
Bangalbhita	359	211	277	82	76	68	8	6
Golabari	21	21	13	08	8	8	–	–
Indrapur	115	88	89	26	73	72	1	3
Lamagaon	355	296	294	61	250	250	–	6
Mondiata	186	124	123	63	64	63	1	2
Mujrail	52	29	27	25	28	28	–	1
Vinodpur	46	62	33	13	31	31	–	1
Total	1,134	831	856	278	530	520	10	19

Source: Field survey, 2003.

LIVELIHOODS

Wetland resources play a critical role in the lives of those residing in and around Tanguar Haor. Most economic activity carried out in the area, including commercial fishing, trade in fuel wood, hunting and trapping waterfowl, the harvesting and sale of grasses and reeds, and farming, is based on these resources. Field surveys carried out for this study confirmed that more than two-thirds of households in Tanguar Haor are either directly or indirectly dependent on the haor. In the dry season, half of the people living in Tanguar Haor—men, women and children—are involved in farming, 20 per cent in fishing, and 20 per cent in both farming and fishing. Only 10 per cent work in occupations that are not dependent on natural resources. The net value of all products harvested annually from the area stands at 87 million taka (1.5 million dollars), of which the estimated value of commercial fisheries alone is 50-80 million taka.

Fishing and farming are the principal occupations of people living in Tanguar Haor. The survey in seven villages of Tanguar Haor found that more than 62 per cent of heads of households are engaged in farming to some extent, while almost 18 per cent are day labourers and 8 per cent are dependent exclusively on fishing. Day labour provides additional income for some families, while business activities are a source of income for less than 2 per cent of families in the villages surveyed (see table 3).

Table 3: Occupation of household heads, Tanguar Haor (2003)

Village	Families	Day labour	Farming	Farming, day labour	Fishing	Farming, business	Fishing, day labour	Farming, fishing	Business	Farming, hunting	Other
Bangalbhita	211	87	68	27	12	8	5	2	–	–	2
Golabari	21	2	1	5	–	1	2	8	2	–	–
Indrapur	88	14	25	7	12	–	9	16	2	3	–
Lamagaon	296	23	111	14	20	2	33	82	8	2	1
Mondiata	124	18	40	13	13	7	4	12	2	12	3
Mujrail	29	–	3	–	5	–	2	15	1	–	3
Vinodpur	62	4	13	7	7	1	15	6	–	8	1
Total	831	148	261	73	69	19	70	141	15	25	10
Percentage*		17.81	31.40	8.78	8.30	2.29	8.42	16.97	1.81	3.01	1.21

* Total family heads in an occupation as a percentage of total families.

Source: Field survey under IUCN study, 2003.

[2] A family may consist of more than one earning member. Several families may live within the same boundaries, along with their parents, but not cook or eat together. For this reason, a single family could be made up of more than one household.

Fishing is the most important natural resource-based source of income for families in Tanguar Haor. The richness and diversity of the area's water environments, including rivers, haors, beels, *baors* (oxbow lakes), *pukurs* (ponds) and *dighis* (tanks or large ponds), provide the majority of the farming population with the opportunity to engage in fishing at some time during the year. Fishing is also carried out by professional fishers. Since fishing is a seasonal activity, even those for whom it is the primary occupation must turn to non-fishing jobs to make ends meet throughout the year. Until the leasing system was abolished, fishers could be divided into two groups: large-scale fishers who worked for leaseholders, and subsistence fishers who practiced this occupation mostly to meet their own subsistence needs. People involved in fish processing and trading are indirectly dependent on the haor for their livelihood. Other fisheries-related work includes drying and selling fish, boat building and net weaving.

Farmers and sharecroppers depend on the land and water resources of the haor, growing local and high-yield rice. Traditionally, deep-water rice was planted in the area but these varieties have fallen out of favour, partly because cultivating low-yield rice is no longer feasible, particularly when farmers are forced to contend with crop losses as a result of flash floods caused by deforestation in the upper catchment areas located in India. As the haor allows only a single crop per year, seasonal unemployment is acute. While some farmers have switched to high-yield rice, others have abandoned cultivation altogether, turning to other means to earn a living such as fishing, or seeking employment outside the area. Many such farming households face poverty and hunger.

After fishing and farming, charcoal making is the third most important source of income in Tanguar Haor. Relatively fewer families harvest reeds and fodder from the haor. Snail collection and bird trapping form a small fraction of natural resource extraction activities. Other resource-dependent livelihood activities include fuel wood collection, *kachham* clay extraction, and the collection of aquatic plants such as the *shapla*, *shaluk* and *kui*.

Wetland resource-based businesses carried out in the Tanguar Haor area include trade in fuel wood, timber, coal and limestone. These materials are extracted, officially and otherwise, from the Meghalaya hills in India and marketed in Bangladesh.

RESOURCE RIGHTS

Until recently, resource rights in Tanguar Haor were governed by a legal regime based on and rooted in colonial systems of management and control. Administrative arrangements in the area, in particular the jalmahal leasing system, were also first devised in that era. Today, the haor's rich fisheries are no longer leased out for commercial exploitation. Instead, the haor is to be managed as a protected area. The specific details of resource rights that will be allowed in this area are still under consideration by the authorities.

CUSTOMARY RIGHTS

There is evidence to suggest the existence in Tanguar Haor of customary rights in land, water and fish, pre-dating the British colonial period. A history of Bengal up to the time of Mughal rule notes that, at least as far back as the 8th century, land grants included an entitlement to the waters on that land (Soeftestad, 2000). Although historical records contain no specific references to fishing rights, it is not unreasonable to assume that grants of land that included the waters also included the fish.

Fisheries in pre-colonial Bangladesh were traditionally managed as common property resources through complex systems of rights evolved in and enforced by local communities. The zamindars collected a nominal tax in exchange for fisheries use rights, which served in effect to regulate entry and maintain harvests within sustainable limits (M.M. Hossain et al., c 1998).

Up to the beginning of the 17th century, there is no evidence of the collection of land revenue. The Mughals, following their conquest of Sylhet in 1612, introduced a system of revenue collection (Soeftestad, 2000). Peasants continued to enjoy customary rights over land they occupied—and therefore presumably over the waters and the fish—and could not in most cases be evicted unless they failed to pay the required land taxes to the state through the zamindars. The arrival of the East India Company in Bengal in 1633 brought about radical changes in the agrarian structure (Hanstad and Brown, 2001).

STATUTORY RIGHTS, 1793–1950

The Permanent Settlement of Bengal, concluded by the British administration in 1793, was a contract between the colonial government and Bengal zamindars, whereby land was permanently 'settled' with the zamindars. Under this arrangement, zamindars were recognised as the owners of the land, in exchange for which they were required to pay an annual tax (land revenue and other levies) at a rate that was more or less fixed in perpetuity. The Permanent Settlement did not create private property titles in same sense that property rights developed in 19th century Britain, but it introduced the "rule of law" by means of revenue contracts which were easier for the colonial government to administer than a range of property rights (Mann, 2000).

In Sylhet, the Permanent Settlement was carried out differently than in most other districts of Bengal. Here, leases were issued not to zamindars but to the farmers themselves. All land not included in the Permanent Settlement or settled subsequently was the property of the government. By the beginning of the 20th century, there were nearly 50,000 permanently settled estates. Although the land was supposed to have been surveyed and demarcated, considerable uncertainty remained as to the exact boundaries of the areas included within the Permanent Settlement, and its provisions were in some cases extended to land to which it did not originally apply (Hunter, 1840–1900).

While the Permanent Settlement awarded proprietary rights to landholders, it only vaguely recognised the customary rights of tenants (Islam, undated [a]). As owners, zamindars had the right to freely transfer their land. Tenants were allowed to continue occupying their land, subject to the payment of rent, and these arrangements were hereditary. But tenants were not allowed to transfer their rights in any other way (Islam, undated [b]). Because the Permanent Settlement was vague on the issue of tenancy rights, judges began delivering conflicting judgements. Some courts held that a tenant's customary rights in land were not affected by the Permanent Settlement, while others held that the zamindars' property rights by implication terminated the customary rights of tenants who were now

just tenants-at-will of the zamindars (Ahmed, undated). A series of regulations (Regulation XXXV of 1795, Regulation VII of 1799, Regulation V of 1812 and Regulation VIII of 1819) enabled zamindars to raise rents, punish those who could not pay, and lease out their land for any period (Islam, undated [b]).

Zamindars generally delegated revenue collection to middleman-leaseholders (ijaradars) who in turn collected their own rents. When increasing population pressures and the rising prices of agricultural produce raised the demand for land, zamindars and their middlemen in turn tended to increase rents. In many such cases, tenants refused to pay rents above the rates that had been established by custom, while zamindars were not inclined to recognise any such customary rights (Islam, undated [a]). Tenants unable to pay increasing rents were evicted, and the evictions led to unrest and a decline in agricultural production.

In the second half of the 19th century, a new type of landholder emerged. The *jotedars* were peasants who encroached on large areas of uncultivated forests and wetlands outside the territory governed by the Permanent Settlement, and whose claims were eventually granted by the British administration on the condition that they paid taxes to the colonial government. As in most of Bengal, the *jotedars'* land was farmed by sharecroppers (*bargadars)* (Hanstad and Brown, 2001).

In 1859, the colonial government adopted the Bengal Rent Act, restricting the power of zamindars to increase rent and evict tenants. The Act only protected fixed-rent tenants who could prove they had cultivated the land for 12 consecutive years, a difficult requirement to fulfil in practice because most such arrangements were made in the absence of proper documentation. In fact, the 1859 Act resulted in an increase in evictions by zamindars who wanted to prevent tenants from occupying land for the statutory 12-year period (Hanstad and Brown, 2001).

Peasant unrest generated by the failure of the Bengal Rent Act evolved into uprisings that continued into the early 1880s. In response, the colonial administration adopted the Bengal Tenancy Act of 1885 to define the rights of zamindars and tenants, but not of sharecroppers and others with lesser interests in land. Amendments to the Tenancy Act in 1928 and 1938 gave tenants the right to transfer land and recognised some rights for sharecroppers (Islam, undated [b]). The Act also mandated a detailed survey and settlement of all land holdings in order to prepare a reliable record of rights (Islam, undated [a]).

Rural agitation over the sharecroppers' situation erupted once again during the 1920s and culminated in the *Tebhaga* (literally, 'one-third') movement of the 1940s, which called for a greater crop share for cultivators and created the slogan, "He who tills the land, owns the land." This movement eventually led to the abolition of the zamindari system in 1950 (Hanstad and Brown, 2001).

Water

The Permanent Settlement vested in the zamindars private property rights of use, management and exclusion over water bodies (*jalkars*) within their estates (Pokrant and Rashid, undated [a]; M.M. Hossain et al., c 1998). *Jalkars*, which included non-navigable rivers, beels, haors, ponds and tanks, were within the "sub-tenancy making power of the landlords" (Farooque, 1997). Under this system, rights in navigable rivers remained ambiguous. Some rivers fell under the domain of the zamindar, while rivers that flowed outside demarcated territories were considered to be public property. For the most part, zamindars treated their water bodies as sources of rental income and leased them out to others (Pokrant and Rashid, undated [a]).

Rights to the resources of private water bodies were formalised in the Private Fisheries Protection Act 1889, which remains in force to this day. Under this Act, "private water" is defined to include "water bodies that are (a) exclusive property of any person; or (b) in which any person has an exclusive right of fishery, and in which fish are not confined but have means of ingress or egress" (section 5).

Fisheries

During most of the colonial period, fisheries were in the hands of zamindars who exercised control over water bodies that formed part of their estates (Pokrant and Rashid, undated [b]). By the beginning of the 20th century, the government had allocated to private persons fishing rights in all but the largest rivers. This was done primarily by including fishing rights in the 'assets' on which the permanent settlement of estates was based, but in some cases the fishery itself was a separate 'estate' (Hunter et al., 1840–1900). Following Permanent Settlement, with some exceptions such as navigable rivers and certain forested regions, fishers no longer had unrestricted access to most water bodies but had to come to some arrangement with the zamindars or leaseholders who controlled them (Pokrant and Rashid, undated [a]). In tanks, the right of fishing vested in the owner or tenant; in large rivers fishing was free to all (Hunter et al., 1840–1900).

In 1859, the same year the Bengal Rent Act was adopted, the colonial administration attempted to tax the rights of fishers to fish in navigable waters. Fishers, ijaradars and zamindars, each of whom had their own reasons for opposing the tax, protested vigorously and the government did not actively seek to impose the tax (Pokrant and Rashid, undated [a]).

Private leasing has dominated inland fisheries management in Bangladesh from the beginning of British rule to the present. It was during the colonial period that the common property rights of fishers and non-fishers began to be regulated and restricted through law. Lessees of water bodies either sub-let to fishers, entered into a share contract with them, or employed fishers for a wage (Pokrant, 1997).

Leasing arrangements were complex, differing from site to site and changing over time, depending on the productivity of the leased area. The earliest published descriptions of such leases and the organisation of fishing come from a survey of the Bengal districts, carried out for the East India Company between 1807 and 1813 (Pokrant et al., 1997). Leasing was often short-term, with few incentives to protect fish stocks and every incentive to maximise income by intensive fishing. Some fishers managed to become lessees but the majority did not and throughout the colonial period had practically no property rights in water or in fish (Pokrant and Rashid, undated [a]). Leasing in Tanguar Haor was abolished in 2001, when the area was designated an ecologically critical area (see box 1).

A series of Calcutta High Court decisions in the 1880s overturned lower court rulings that had found fishermen guilty of theft for fishing in private beels and streams. The Court noted that fish, if able to move freely into and out of such waters, were wild creatures not owned by anyone until they had been caught. As such, owning a water body did not automatically give the owner exclusive rights to the fish in it. Zamindars and ijaradars saw this ruling as a threat to their property rights over water and its products, and protested to the British government. Fearing a political backlash, concerned about the revenue losses that would be incurred as a result of uncontrolled fishing, and finding it expedient to support zamindars and ijaradars in protecting their fisheries resources from harvesting by the public, the colonial administration passed the Private Fisheries Protection Act 1889, which remains in force to this day (Pokrant et al., 1997). Under the 1889 Act, private fisheries are at the disposal of the owner, who is permitted to use the resources for any purpose. Unauthorised fishing in private waters is prohibited, with the exception of rod and line fishing in a navigable river. The 1889 Act defines fish to include shellfish and turtles.

Box 1: Leasing in Tanguar Haor

Shortly after the Permanent Settlement, zamindars began to lease out the water bodies included in their estates to generate income. By 1819, the rights of zamindars to lease their lands and attached jalmahals was enshrined in regulations and the practice continued throughout the colonial era.

In 1930, Birendra Kishore Roy Chowdhury, the zamindar of Gouripur, whose estate included Tanguar Haor, issued a lease in response to pressure by the colonial administration that had appointed him to increase revenues from fisheries resources. Mahendra Das, a fisher himself, was the first leaseholder in Tanguar Haor. Members of his family and their associates continued to enjoy the benefits of this arrangement until 1977.

In the early post-colonial period, a popular political slogan in support of the fishing poor was '*jal jar, jala tar*', meaning 'the wetland should belong to the one who uses the net'. After 1950, the MoL, through the district administration, administered leasing arrangements. Local government council members had virtually no role to play in the management and monitoring of lease agreements and were generally unaware of their terms and conditions. As a result, leaseholders allegedly became involved in activities not specified in the agreements. Because of their influence in local and regional politics as well as the economy, such activities would generally go unchallenged.

During the late 1960s, the board of revenue of the then East Pakistan provincial government attempted to encourage fishers to form and register cooperatives to enable them to bid for leases as a group. This policy, although well-intentioned, did little to protect the rights of fishers who were for the most part too poor to participate in such a system.

In the mid-1970s, the government of newly independent Bangladesh decided to restrict the auctioning of jalmahal leases to registered fishers' cooperative societies. This new restriction resulted in the formation of cooperative societies that were in fact a front for leaseholders. While fishers were nominally in charge, traditional non-fishing ijaradars retained actual control. Such sub-leases were completely unofficial and the process had to be carried out under the table.

By 1978, the government only awarded leases to fisher's cooperatives. In that year the MoL, through the district administration, awarded a three-year lease in Tanguar Haor to Joynal Abedin on behalf of Inland Fisheries Ltd., a fisher's association. On paper, Joynal Abedin, known locally as the '*haurer raja*' or 'king of the haor', was the manager of Inland Fisheries as well as a member of Parliament from the political party in power at that time. Inland Fisheries' lease for Tanguar Haor was renewed in the name of Joynal Abedin until 1996, when it was renewed in the name of Nazir Hussain, also a member of Parliament. The lease in the name of Nazir Hussain was renewed until 2001, when the system was discontinued and leases cancelled.

Under both the zamindari system and the leasing system, subsistence fishers did not own any resources and were instead either serfs or labourers, employed to harvest resources belonging to others.

STATUTORY RIGHTS SINCE 1950

The Constitution of the People's Republic of Bangladesh 1972 recognises three types of ownership rights: state, cooperative and private (article 13). Under state ownership, the government is constitutionally obliged to manage public resources on behalf of the people "through the creation of an efficient and dynamic nationalised public sector embracing the key sectors of the economy". Cooperative ownership is defined as ownership by cooperatives on behalf of their members within the limits prescribed by law, while private ownership refers to property held by individuals

The Constitution contains provisions specifically governing resource rights. Government property includes minerals and other underground resources, land minerals and other resources under the ocean in Bangladesh's territorial waters and continental shelf, and any property within the country that "has no rightful owner" (article 143). Article 143 makes no specific mention of resources that lie above ground, which can be interpreted to mean that such resources belong to the owners of the land in question.

Land

The East Bengal State Acquisition and Tenancy (SAT) Act 1950, adopted on 16 December 1950, abolished the Permanent Settlement. The government acquired all interests of zamindars and other rent receivers, and tenants became direct tenants under the government (section 20(2)) (Islam, undated [b]). Following the SAT Act, the Tanguar Haor area became a combination of private land and government-controlled (khas) public land. Owners of private land in Tanguar Haor include both landlords and small farmers, but are mostly small farmers. It is primarily the beels that are khas land.

The SAT Act abolished the zamindari system but some of the abuses remained. After acquiring the interests of the zamindars of Tanguar Haor, the government leased small plots of land to landless families. This government action in support of the landless was subverted by individuals who essentially perpetuated the sharecropping system by using landless families as a front to acquire government land allotted to the landless, using the landless allottees to farm the land and then taking the major share of the harvest themselves (Akhtar, 1982; Hunter, 1956 [1868]; Sarkar, 1948).

Water

For the purposes of fisheries management, water resources in Bangladesh are defined as open (rivers and streams) or closed (beels, haors and *baors*) water bodies (Chadwick and Datta, 2001). When the SAT Act abolished the zamindari system, the majority of the country's open water bodies reverted to the state. The MoL, which controls rights over state-owned water bodies (jalmahals), retained the administrative and management systems used by the former zamindars (M.A. Hossain et al., c 1998).

Fisheries

The basic law regulating fisheries in the country is the Protection and Conservation of Fish Act 1950, which was enacted primarily to address the depletion of fisheries resources. The 1950 Act does not deal directly with rights to fisheries resources. Following a 1982 amendment, the term 'fish' is defined in the Act to include "all cartilaginous, bony fishes, prawn, shrimp, amphibians, tortoises, turtles, crustacean animals, molluscs, echinoderms and frogs at all stages in their life history" (section 2(1)). A 1995 amendment to the 1950 Act further defined "fishery" as follows:

> [A]ny water body, natural or artificial, open or closed, flowing or stagnant (such as river, haor, *baor*, beel, floodplain, canal etc.) where activities for growing fish, or for conservation, development, demonstration, breeding, exploitation or disposal of fish or of living organisms related to such activities are undertaken, but does not include an artificial aquarium of fish used as a decorative article, pond or tank (section 2(1a)).

Under this definition, haor areas are considered to be fisheries. In official revenue records, Tanguar Haor continues to be classified as a jalmahal, rather than a fishery (see box 2).

The Government Fisheries (Protection) Ordinance 1959 also regulates fisheries in Tanguar Haor, which was classified as government-controlled (khas) land following the adoption of the SAT Act. The 1959 Ordinance defines a "khas managed fishery" to be any fishery under the management or control of the government (section 3) and stipulates that a license is required for fishing in a khas fishery (section 4(1)).

Box 2: Legal status of Tanguar Haor

Until 1999, Tanguar Haor was administered solely by the MoL, which had leased the area to private parties for periods of three to five years. In a series of notifications in 1999, the government designated Tanguar Haor and six other sites, including other wetlands, as 'ecologically critical areas' under section 5 of the Environment Conservation Act 1995 (Chowdhury, 2003).

When an area is declared to be an ecologically critical area under the Environment Conservation Act, it comes under the direct control of the environment department of the MoEF, which may restrict specified activities in the area. On 12 February 2001, the MoL and the MoEF signed an agreement that transferred the management of Tanguar Haor to the MoEF for a period of 10 years, in order to conserve its biodiversity and natural environment. Following this agreement, in 2001 the government banned the practice of leasing altogether and imposed a general ban on resource harvesting. The leaseholder continued to exercise his authority over the wetland until the end of 2003, when Tanguar Haor was physically taken over by the MoEF.

As an ecologically critical area, Tanguar Haor now has a core conservation zone which encompasses primarily khas lands with small private landholdings on its fringes. The MoEF is currently managing the core conservation zone. The last lease for Tanguar Haor, granted in 2000, had allowed local people to extract natural resources from the haor for domestic use (including drawing water for cooking and washing) and to use the haor waters for navigation. The general ban on resource harvesting imposed by the MoEF means that local communities are no longer allowed to harvest haor resources from the core conservation zone on a subsistence basis.

INSECURITY AND CONFLICT

The fisheries leasing system has cast a long shadow over the lives of the people of Tanguar Haor. It has deprived them of customary rights to access the resources on which their livelihoods depend, and has in many cases exposed them to violence and conflict. Although the system itself was abolished officially in 2001—and de facto in 2003, coinciding with the last field visit made for the preparation of this study—its impact on the lives of local communities, and on their own assessment of their livelihood security, was palpable. Moreover, even as the final field study in late 2003 was being conducted, local residents were still not willing to accept that the leasing system was permanently abolished. Many respondents were of the view that it was only a matter of time before the leaseholder, along with his entourage of guards and hired labour, would be back to exploit the fisheries of the haor.

This fear and mistrust is understandable, considering that the residents of Tanguar Haor have struggled to eke out a living under the leasing system for several generations, and for all that time, the local leaseholder was in their minds all-powerful, the '*haurer raja*' or 'king of the haor'.

Under the leasing system, the livelihoods of haor residents were threatened not only by the leaseholder's excesses, but also by factors such as food scarcity, crop failures caused by natural disasters and climatic conditions beyond their control, the shortage of work in the winter months, and the absence of basic public services and amenities. While in time the residents of the area will come to accept that the *haurer raja* is no longer a force to contend with, the other challenges they face will continue to pose a threat to their livelihoods and their survival. In addition, haor residents are today faced with a new cause for concern, uncertain about their future under the new management plans envisaged for the area.

LEASING SYSTEM

Although the last local leaseholder in Tanguar Haor was removed from the area in 2003, the effects of the leasing system have left an indelible mark on the lives and livelihoods of local communities. During the many decades that the leasing system was in place, inhabitants of haor villages were denied access to fisheries resources, initially to some degree but eventually almost completely. In the 1980s, even their opportunities for seasonal employment with the leaseholder were cut off when the leaseholder began to hire fishers from outside the area.[3]

The increasing marginalisation of local communities was at least in part a direct result of government policy. The system required leaseholders to bid every three to five years to renew their leases. At each renewal, government policy required the minimum bid be higher by a certain percentage. Compelled to increase their bids with each successive renewal, leaseholders in turn transferred some of this burden indirectly to local communities, who were increasingly sidelined while the leaseholder attempted to recoup lease fees by maximising profits from fishing operations. This involved hiring outside labour, restricting subsistence access to the diminishing fish resources of the haor and imposing a number of illegal levies on local villagers. The leaseholder justified these practices by claiming that he was merely protecting his investment (field interview, 2003 / Nazir Hussain, interview 15 September 2003, Dhaka).

These arbitrary restrictions were enforced by armed guards hired by the leaseholder. The guards used forcible means to bar villagers from carrying out subsistence fishing in the waters surrounding their habitations. When intimidation failed, villagers were picked up by the guards and handed over to the police. Fearing for their lives, many local communities stayed away from the main beels and instead resorted to intensive fishing and resource extraction in the small streams and rivulets around the haor, depleting these water bodies of a variety of aquatic resources (see box 3).

[3] The last leaseholder in Tanguar Haor also sub-leased certain beels to his favourites, further complicating matters, with multiple leaseholders operating in the area at the same time. This practice was never officially permitted or recognised.

Box 3: Arbitrary restrictions and levies imposed on villagers in Tanguar Haor

Surveys carried out for this study revealed that conflict in Tanguar Haor up until 2003 most commonly involved local residents and the guards employed by the leaseholder. These guards unleashed a reign of terror on local residents. Nearly every village in and around the haor reported incidents of brutal assault, shooting, illegal detention by the leaseholder's guards, and other maltreatment (field interviews, 2003). Villagers also reported that the guards snatched fishing nets and set them ablaze.

The leaseholder defended these actions by claiming that villagers engaged in unlawful activities, were 'stealing' haor resources and deserved to be punished. But many of the restrictions and levies imposed by the leaseholder were in fact illegal because a standard jalmahal lease agreement that applied to Tanguar Haor did not entitle the leaseholder to anything more than fishing rights during the winter months once every three or so years.

In the seven villages surveyed for this study, 92 per cent of respondents said that various restrictions had been placed on natural resource extraction, while 58 per cent believed that the leaseholder possessed no legal authority to impose such embargoes. Restrictions and levies illegally imposed by the leaseholder included:

- barring monsoon fishing, except upon payment of a fee (600–1,000 taka per week);
- preventing the harvesting materials for thatching and fuel;
- imposing levies for duck keeping (3,000 taka for 100 birds per season);
- charging fees for livestock grazing (10,000–12,000 taka for 100 head of cattle per season);
- restricting hunting by local residents while inviting paying parties to hunt migratory water fowl in the winter (3,000–10,000 taka a night for each group).

In the village of Vinodpur, meanwhile, a group of battered and ailing villagers explained the cause of their injuries, sustained a few years earlier. It appears that the villagers had travelled to a neighbouring beel with the intention of fishing. Joynal Abedin, the leaseholder at that time, prevented them from fishing by deploying his musclemen. The leaseholder's gunmen injured many of the villagers, of whom five were permanently disabled.

The only residents who did not encounter similar problems were the indigenous Garo community, numbering about 300 people, who reside in the village of Bangalbhita. This is because the Garo do not depend on haor resource extraction for their livelihood.

RESOURCE USE

The most important cause for insecurity and conflict in Tanguar Haor revolves around use of haor resources. The leasing system in place until 2001 (de facto until 2003) legally vested only limited powers in the leaseholder, but on the ground the leaseholder severely restricted the rights of local communities to access and use the same resources. Although the leasing system is no longer in force in Tanguar Haor, a survey of the insecurity and conflict issues prevalent under that system is nevertheless important because it highlights both the needs and the concerns of local communities.

Water levels

In wetland areas, control over water levels determines the fate of fisheries and paddy fields as well as the migratory birds and indigenous wildlife of the area. One of the most frequent disputes in Tanguar Haor focused on water levels in the various beels that make up the haor.

Water levels are controlled artificially by building bunds and embankments to keep water levels high in one area or lower them in another. In Tanguar Haor, the leaseholder controlled water levels to maximise fisheries production, which proved to be detrimental to rice cultivation carried out by local residents.

After the monsoon passes, water in the haor begins to recede naturally, leaving behind fertile land that is suited to paddy cultivation. Instead of allowing this to occur, the leaseholder would keep water levels high by erecting temporary earth dams in order to promote fish growth in the beels. As the dry season progressed, the beels were drained to expose the fish, thereby prolonging the period during which commercial extraction remained viable. Towards the end of the dry season, before the monsoon began in earnest, flooding was once again carried out in the beels to promote re-stocking ahead of commercial extraction activities.

For local residents depending on rice cultivation, this interfered with their planting cycle which follows the seasons. Keeping water levels high as the monsoon recedes delayed plantation, while the draining of beels in the winter months deprived rice growers of water for irrigation, and forced them to incur the additional expense of pumping water into their paddy fields. Commencing flooding of the haor before the monsoon, meanwhile, flooded land that was used for cultivation. As a result, the period available for cultivation was curtailed both at the start and toward the end of the cycle. With a shorter growing season, less of the crop was able to mature, resulting in lower yields. Needless to say, this system of manipulating water levels put increasing pressure on the already meagre livelihoods of the residents of Tanguar Haor, creating untold hardship and giving rise to deep-rooted resentment.

Disputes over water levels have also occurred between Tanguar haor residents and the communities residing in the neighbouring Matian Haor.

The Patnai River flows between the Tanguar and Matian haors, both of which become flooded in the monsoon season. As a flood protection measure, a temporary embankment is built every year at Tanguar Haor, while a permanent embankment protects neighbouring Matian. These embankments often become a source of bitter conflict when the communities of neighbouring Matian demolish the temporary embankment in Tanguar to release the pressure of the overflowing Patnai, thereby protecting their own permanent embankment and the crops within. This causes major crop damage in Tanguar Haor, to the tune of 70–80 per cent in some years. Such disputes, which are not directly related to leasing system, are likely to continue in the future.

Following the construction in the mid-1990s of a dam across the main channel of the Jaduka River, which flows down from the Meghalaya hills into Tanguar Haor, large tracts of cultivable land remain under water for most of the year. These areas, that were previous well watered by the monsoon rains, can no longer be cultivated because of excessive flooding.

Natural resources

Conflict over the resources of Tanguar Haor has escalated during the last 15 years. Disputes that were once settled by mutual understanding and agreement have instead led to localised outbreaks of violence.

The haor's natural resources are used by local residents to meet their subsistence needs. Staring in the early 1990s, however, subsistence use of these resources by local villagers was restricted by the leaseholder.

Traditionally, in the winter months, residents of Tanguar Haor were able to graze their cattle in fallow land situated between paddy fields and the beels. Grasses, reeds, twigs and leaves were harvested for fuel and thatching. Branches or whole tree-tops were collected from swamp forest for use in constructing enclosures, called *khola* or *kathha*, which entice fish to breed in them. The hijal (*Barringtonia acutangula*), a wetland tree species, is widely favoured for this purpose. Limited bird trapping and hunting was also carried out.

Starting in 1993, the leaseholder imposed a fee of 10,000–12,000 taka per 100 head of cattle for a single season's grazing rights. Such exorbitant payments were out of the reach of most farmers, who were consequently forced to graze their animals on the outskirts of the haor, supplementing this meagre diet by harvesting grass and sedge to feed their cattle. Locals were also required to pay the leaseholder a fee for fattening domestic ducks at the rate of 3,000 taka for 100 ducks per season. Villagers found collecting grasses, reeds, twigs or leaves would be assaulted by the leaseholder's

guards. Local netters and traders were also required to pay a hefty lump sum for the right to trap birds.

These restrictions enraged locals not only because they were illegal. The jalmahal lease arrangement did not award the leaseholder control over haor resources. But to add insult to injury, the leaseholder's associates and employees were permitted to use the same resources that were forbidden to local villagers. Seasonal fishermen hired by the leaseholder were free to harvest grasses and reeds in order to thatch their own temporary homes or make charcoal for their hookahs. Until the end of 2003, hunting parties were known to bag dozens and even hundreds of birds, upon payment of a fee of 3,000–10,000 taka per night to the leaseholder. Meanwhile, in the village of Rangchi, located in western Tanguar, the last remaining patch of hijal forest was decimated by the leaseholder. In 1993, the leaseholder ordered the lopping of all these trees in a single night without consulting villagers, leaving behind a stand of mutilated trees. Today, this patch covers about 2 hectares and supports some 800 damaged hijal trees. The patch had been leased out by Rangchi villagers for more than a century. Income from this arrangement was used to maintain the village mosque.

The leasing system was squarely to blame for allowing these excesses to continue unchecked, and for failing to provide legal protection to the use rights of local communities. Today, the concern is that similar restrictions will once again be imposed on residents of the area, now that Tanguar Haor's abundance of natural resources has become the focus of conservation efforts.

ENVIRONMENTAL CONCERNS

The leasing system fostered a short-term approach to fisheries management, leading to mining of fisheries rather than conservation or development. The deepening poverty of local residents, coupled with restrictions on their subsistence use of resources, has led to the over-utilisation of those remaining resources to which they retained access.

Climatic events such as flash floods, excessive rainfall and even hailstorms afflict Tanguar Haor nearly every year, causing substantial losses to crops, fish and cattle. The people of the haor have learned to live with these calamities, and recoup their losses by shifting to day labour, selling property, borrowing money, and economising by eating one meal a day. But even in the best of years, local communities suffer from food insufficiency throughout the year and dire scarcity during the high monsoon, mainly because of the lack of employment and fishing activities. These hardships in turn put increasing pressure on the haor's natural resources.

In addition to these hardships, the lives of the people of Tanguar Haor are affected by events taking place across the border. The Cherrapunji region in the Meghalaya hills of India receives some of the highest rainfall in the world. The heavy monsoon here drains into the Tanguar Haor area. In recent years, heavy forest clearing in the Meghalaya hills has caused severe soil erosion. Landslides also occur along these denuded hill slopes, and a heavy load of silt is carried down by the hill streams to be deposited in the haor, resulting in flash floods that destroy crops and raise the deeper basins of the haor area.

SOCIO-ECONOMIC PRESSURES

No significant development has taken place in Tanguar Haor and living conditions have deteriorated, with more people now suffering from unemployment and under-employment. Infrastructure development is severely lacking, with no hospital or post office, and no proper roads linking the haor to outside markets. Virtually no opportunities exist to diversify the economy of the area because the scope for alternative occupations is limited.

Local communities are aware of the environmental threats they face, and also of the illegality of the leaseholder's practices (see table 4). Their fear, as the final field studies were being conducted in 2003, was that the new management of the haor as a Ramsar site and ecologically critical area would exclude them once again, and this time legally, from using the resources of Tanguar Haor to support their livelihoods.

Table 4: Sources of insecurity, Tanguar Haor (2003)	
Rights	Community rights: 84% of surveyed households believe they are entitled to access haor resources, 15% consider themselves to be trespassers and 1% are unsure of their rights. Of the individuals surveyed, 92% believe that restrictions on resource extraction exist; 58% think these restrictions should be withdrawn and that the government should re-establish the traditional rights of communities to use haor resources.
Conflict	Conflicts with neighbours: flood protection embankments raised by residents of Matian haor cause crop losses to neighbouring communities.
	Conflicts within the Tanguar Haor community over vested properties.
	People's suggestions: small beels be leased out to villagers; permanent embankments with sluices be made; customary fishing and other haor resource harvesting rights be officially established; locals be hired during peak fishing season; people's participation be made mandatory in local development efforts.
Livelihoods	Primary and secondary occupations: fishing and farming are the primary and secondary occupations, respectively; farming appears to be the main occupation in terms of the overall occupational structure.
	Natural resource extraction: 80% of households harvest natural resources from the haor; activities include fishing, fuel wood sale, bird hunting and selling, cutting and selling reeds, trade in fuel wood, timber, coal (imported from India) and limestone.
	Natural resource-based economic activities, and farming.
	Seasonal scarcity prevails, especially during the high monsoon, because of the lack of employment or fishing activities
	Alternatives for income generation—fish processing and marketing, fish fry production, duck keeping, goat rearing and raising nurseries for seedlings—have not been pursued.
	Environmental hazards: flash floods, excessive rainfall and hailstorms which cause loss of crops, cattle and fish.
Quality of life	Diet: nutritional standards are extremely poor; in the winter, when fish and vegetables are abundant, the diet is somewhat improved.
	Health care: 75% of respondents say that the only health care they receive from the government is occasional vaccinations.
	Education: 20.36% of respondents are literate, of whom only 5.51% have completed secondary education.
	Socio-economic indicators: no roads, electricity, industry, banks or access to education; various conflicts prevail
Management	The MoEF, currently responsible for managing this Ramsar site, is yet to establish a sustainable management system.
	Impact of change in ruling regimes: 67% of respondents state it does not matter to them, 30% say change in the ruling regime adversely affects them
	Legal and governmental support systems: no such systems are currently in place.
Source: Field survey, 2003.	

THE NEW MANAGEMENT SYSTEM

Through a series of notifications issued in 1999, the government designated Tanguar Haor and six other sites to be ecologically critical areas under section 5 of the Environment Conservation Act (Chowdhury, 2003). A number of activities were prohibited in such areas, including the following: felling or extracting trees; clearing forests; hunting or poaching wild animals; catching or collecting snails, coral, turtles and other creatures; any activity that might threaten the habitat of flora and fauna; activities likely to destroy or alter the natural characteristics of soil and water; the establishment of industries that may pollute soil, water and air and/or create noise pollution; and any other activity that is potentially harmful to the fish and other aquatic life (notification no. Pabama 4/7/87/99/245, issued by MoEF on 19 April 1999). The following year, on 10 July 2000, Tanguar Haor was declared a Ramsar site.

In 2001, management of Tanguar Haor was officially handed over to the MoEF for the purpose of conservation. Leasing in the haor was also officially discontinued at this time. It took two more years

for the administrative authorities to enforce the leasing ban on the ground, leading to the exit of the leaseholder from the area in December 2003.

Today, Tanguar haor is to be managed and developed as a conservation area. No specific plans have yet been implemented in this connection. The MoEF has proposed the establishment of a ‘sustainable use zone’ where local fishermen will be allowed to fish on a subsistence level. At present, the authorities permit subsistence fishing in the area, and a transition from the leasing system to a community-based management system is under active consideration by the government. Until such plans are approved and implemented, the rights and entitlements of local communities remain uncertain, and the livelihoods of the people of Tanguar Haor hang in the balance.

SYNTHESIS AND CONCLUSIONS

The people of Tanguar Haor live within in a diverse ecosystem rich in natural resources and depend almost exclusively on these resources for their survival. For several generations, however, they have struggled to eke out a living under the shadow of a system which saw their subsistence needs increasingly sidelined while local influentials reaped the benefits of all that the haor had to offer. This system, rooted in colonial administrative practices and reflecting colonial imperatives of revenue extraction by the most efficient means possible, whittled away the customary use rights of local communities and vested sweeping powers in colonial agents such as the zamindar and their intermediaries, the ijaradars.

The irony is that in Tanguar Haor these arrangements were not replaced after Independence by more equitable systems of resource distribution and use. While laws were enacted to abolish the zamindari system, the excesses institutionalised by this system continued to be perpetrated under a government-managed leasing system until as recently as 2003.

Responsibility for the Tanguar Haor is now vests in the MoEF, which is charged with managing the haor as an ecologically critical area under Bangladeshi law and as a Ramsar site under the country's international commitments. The place of local communities in this new arrangement remains to be defined, but already it appears that this new regime will involve a measure of exclusion, and further curtailment of their rights to access and use haor resources.

The situation today in Tanguar Haor is a perfect example of the difficulties involved in balancing environmental conservation priorities with the subsistence needs of communities. It is also perhaps an illustration of the skewed priorities of policy makers and management authorities, who for decades allowed the resources of this area to be exploited by commercial interests and failed to protect the rights of communities, and who are now charged with protecting this ecologically critical area and will once again be tempted to do so at the expense of the subsistence needs of local communities. As such, Tanguar Haor may also serve as a test case for the success—or failure—of government-driven conservation initiatives. If an equitable system is devised both to protect the haor's resources and to secure the livelihoods of the people who depend on these resources, there is every reason to be optimistic about the outcome of the new management plan that is being devised for Tanguar Haor. If, however, the subsistence needs of local communities are once again sidelined, this exclusion will lead to deepening poverty and further ecological degradation.

There is no single quick fix for all of Tanguar Haor's livelihood security issues. While some measures may be effective in the short term, other solutions—particularly those involving political reform or changes in attitude—will only begin to yield dividends in the years to come.

In Tanguar Haor, the question of resource rights will need to be addressed immediately. Residents of the area have endured decades of hardship and oppressive poverty largely because their rights to use the resources of the haor were not protected.

Although a number of laws related to natural resource management and use are in force, these laws focus on regulating the resource and, in some cases, exploiting it commercially, rather than on securing the rights of those who depend on these resources for their survival. The legal regime governing resources generally in Bangladesh will now in any case not apply to Tanguar Haor in full because it is today a conservation area protected by law. This provides a perfect opportunity to wipe the slate clean, address the injustices of the past, and devise a management plan, backed by law, that will allow the communities who depend on the haor to harvest resources sustainably, participate in management and conservation, and share in whatever benefits might accrue in the future, such as tourism revenues.

While the designation of Tanguar Haor as a protected area creates new opportunities, new difficulties arise as well. Foremost among these is the fact that resource use in the haor is likely to be restricted to some extent. Current proposals envisage the establishment of a 'sustainable use zone', presumably to serve as a buffer between the core conservation area and the surrounding region. This suggests that the heart of the haor and its most abundant portions are likely to be off-limits. Even under the most inclusive and equitable use arrangements, the area where use will eventually be

permitted is unlikely to be able to support the 25,000 people currently living in some 50 villages dotted around the haor. As the population grows, pressure on the sustainable use zone will only increase. Add to this the seasonal scarcity that is already a cause for severe hardship, and will continue to occur each year as the waters rise and farmland is flooded, and the livelihoods of local communities appear once again to be insecure in the extreme.

In the past, communities in the area were wrongfully deprived of the means to make a living. Arbitrary bans and levies imposed on them unlawfully brought them into conflict with the leaseholder and exposed them to the threat of physical violence. But if scarcity and hardship persists, and livelihoods continue to be precarious, communities will once again be thrown into conflict, this time with the authorities who are legally entitled to manage and 'protect' the area. It will be a great injustice if the people who have suffered long as a result of illegal restrictions are made to endure similar hardship in the name of the law. It goes without saying that such a situation will also seriously hamper conservation efforts in Tanguar Haor.

For conservation to succeed without exposing the residents of Tanguar Haor to further insecurity, efforts will also need to be directed elsewhere. Apart from the question of resource rights, other issues that must be addressed include the standard development concerns that are typical in areas where the majority of the population lives in poverty. Health care, clean water and basic sanitation facilities are required to improve the standard of living generally. But particular focus must be put on providing education, and in improving access to employment opportunities. When the waters rise in the haor and farming becomes impossible, households must be enabled to seek out other means of securing their livelihoods.

Tanguar Haor may have been sufficient to sustain the lives of the communities who resided here in the past. But this will not continue to be the case in the future, no matter how freely these communities are able to access and use the haor's resources. Policy makers and conservationists alike would be well advised to take this fact into account when management plans and conservation strategies for Tanguar Haor are under consideration.

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Livelihoods, Security and Conflict

ORISSA, INDIA

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ABBREVIATIONS

CSD	Campaign for Survival and Dignity
FAO	Food and Agriculture Organization of the United Nations
FCA	Forest Conservation Act
GOI	Government of India
GOO	Government of Orissa
JFM	joint forest management
MELA	Madras Estates Land Act
MoEF	Ministry of Environment and Forests
NGO	non-governmental organisation
OFA	Orissa Forest Act
OGLSA	Orissa Government Land Settlement Act
OPLE	Orissa Prevention of Land Encroachment Act
OSATIP Regulation	Orissa Scheduled Areas Transfer of Immovable Property (by Scheduled Tribes) Regulation
PESA	Panchayats (Extension to Scheduled Areas) Act
TERI	Tata Energy Research Institute

GLOSSARY

beda	category of agricultural land; used for rice cultivation
bhata	medium quality agricultural land; used for growing millets, pulses and upland paddy
block	administrative sub-unit, demarcated for the purpose of development
dongar	hills; in the study area, the term is also used to describe an area used for upland cultivation
gochar	pasture land
Gram Panchayat	local rural self-government unit, usually consisting of a few villages
Gram Sabha	general body of Gram Panchayats in rural areas of India; unit for local self-government
jhola	paddy field created in a stream bed; term used mainly in Koraput district
Palli Sabha	palli 'village' + sabha 'assembly'; general body of the village, consisting of all eligible voters
Panchayat	local unit for rural self-government
patta	document of land title, denoting ownership or lease
podu	shifting cultivation
quintal	unit of weight, equivalent to 100 kilograms
revenue village	legal entity defined by revenue laws (in Orissa, primarily by the Orissa Survey and Settlement Act 1958)
ryot	tenant of the state
standard acre	measurement of land; in Orissa, one standard acre is equal to 1 acre of class I land (land with two irrigated crops), 1.5 acres of class II land (equivalent to beda), 3 acres of class III land (equivalent to bhata) or 4.5 acres of class IV land (equivalent to dongar)
tehsil	unit of revenue administration, consisting of a few hundred villages
zamindar	land owner; intermediary tenure holder under the zamindari system
zamindari	system of land tenure introduced by the British, under which an intermediary was assessed rent and was supposed to collect the rent from his tenants

INTRODUCTION

Environmental security emerged in the 1990s as an important concern for the developed world. Comparative studies on the subject provided the theoretical building blocks for the environmental security paradigm. Homer-Dixon's argument rests on the notion that environmental scarcity is caused by three factors: degradation (supply-induced), increased demand (demand-induced) and unequal resource distribution (Homer-Dixon, 1999). Baechler develops a typology of conflict and finds that environmental degradation triggers conflict if social fault lines can be manipulated in the struggle for power, and that violence often results from the combination of a weak state, environmental discrimination and a pre-existing history of conflict (Baechler, 1998). Both studies focus on the neo-Malthusian idea of linkages between environmental degradation, environmental scarcity and conflict.

The environmental security paradigm has been the focus of criticism from a variety of perspectives. Some note that the causal link between scarcity and conflict is exaggerated (Peluso and Watts, 2001). Others believe the paradigm is unable to explain intermediating factors such as rights and entitlements, and the role of global capital (Hartmann, 2001). The paradigm has been critiqued for being simplistic, with weak definitional foundations (Fairhead and Leach, 1997), and for militarising environmental issues by focusing on coercive solutions. Indeed, the manner in which the idea has been taken up by the security establishment has invested it with a militaristic and elitist aura.

The paradigm can nevertheless serve as an important analytical tool if it is shorn of its elitist and militaristic connotations, and instead brought closer to the day-to-day practices of ordinary people. One way in which this can be achieved is by linking environmental security to livelihoods. Shifting the focus to include entitlement to livelihoods allows environmental security to be linked to the progressive causes of equity and social justice, making room for a critical enquiry of the social and economic relationships that shape these entitlements. In situations where natural resources are involved, the link between livelihoods and the environment can be framed by the issue of rights to access and use resources. Institutional arrangements which define rights and access then become the object of analysis. A historically embedded entitlement and rights approach also allows the analysis to address the web of relationships that exist between culture, power and political economy (Peluso and Watts, 2001).

This study is a step in this direction. It looks at the relationship between environmental security and livelihood security in the context of forest and land resources in a tribal-dominated area, and traces the way in which resource rights have been instrumental in shaping these relationships. Resource rights have in turn been shaped by formal institutions of forest and land governance, as well as the customary rights of local communities and patterns of everyday resource use. Understanding the impact of resource governance mechanisms (survey and settlement, land classification, resource tenure arrangements, legislation regulating relationships between people and resources) on livelihoods and the environment allows the causal linkages between policy, resource degradation and livelihood insecurity to be delineated. Such an analysis will help in the search for policy recommendations that are both socially acceptable and environmentally sustainable.

The issues that emerged during the course of the study highlight the challenges inherent in ensuring sustainable livelihoods and conservation. The study illustrates how formal institutions for natural resource governance, particularly those concerned with property rights and tenure, mediate the relationship between society and the environment, leading to environmental degradation and conflict.

SELECTING A STUDY AREA

The village of Mangara in Koraput district was chosen to illustrate the linkages between rights, livelihoods and environmental security in the tribal areas of the state of Orissa. The village is located in a biodiverse headwater area of the Eastern Ghats, where widespread ecological degradation has been taking place at a rapid pace. The majority of the population belongs to tribal communities, more than 80 per cent of whom live on an income of less than one US dollar per day (de Haan and Dubey, 2003). One of the considerations in choosing the study site was the fact that one of its hamlets is to be submerged under a medium-scale irrigation project, which will affect livelihood security and create the potential for conflict.

Two non-governmental organisations (NGOs), Pragati in Koraput and Vasundhara in Bhubaneswar, had already carried out a micro-planning training exercise to prepare a community forest management plan in Dayanidhiguda, a hamlet of Mangara, where issues of resource rights and conflict were noted (Pragati and Vasundhara, 2003). Some of these conflicts can be linked to recent attempts to enforce forest laws, especially the Forest Conservation Act (FCA) 1980, by the Supreme Court of India and the Ministry of Environment and Forests (MoEF).

This study was carried out by a combined team of NGO workers from Pragati and Vasundhara, in collaboration with the villagers of Mangara. While its main objective was to understand the dynamic between resource rights, livelihoods, environmental security and conflict, it was also important to examine the wider context. By assessing higher-tier policies and institutions, an attempt was made to trace the relationship between policies and their implications at the local level.

The situation in Mangara village reflects the state of affairs in many forested landscapes, not only in India but also in South and South-East Asia, Africa and South America, and shows how, in absence of a deeper and more empathetic understanding of the local situation, policies developed to protect the environment can in fact lead to environmental degradation and conflict.

For policy makers, the Mangara case study carries many lessons. It makes clear that the relationship between livelihood security and environmental security is mediated by institutions of rights and access. The poor design of these institutions leads to both environmental degradation and livelihood insecurity. The application of environmental statutes without understanding the historical background or present-day ground-level realities can lead to environmental degradation, impoverishment and conflict. The case study provides insights to the Orissa government for reconsidering the situation in the Scheduled Areas in Orissa (see annex). It proposes that investment in reversing natural resource degradation in these areas is futile without first settling issues of rights and access over land and forests.

METHODOLOGY

Data collection for this study relied on participatory rural appraisal exercises as well as individual and group interviews. Resource persons and experts were also consulted, especially in legal matters. Secondary data was drawn from census reports, district statistical handbooks, gazetteers, archives, and various reports by government and other agencies.

The selection of the study site was carried out during a preliminary visit to Koraput in July 2003. Team members met in Koraput for a brainstorming session to decide on the focus of the study and determine a course of action. Views of individuals with knowledge of land rights issues in the district were taken into account before designing the research plan.

After the collection of secondary data was completed, field work for the study was carried out in September and October 2003. Participatory rural appraisal techniques such as ranking and resource mapping were used to elicit information. In-depth discussions were held in groups and with individuals. Official land record documents, including land revenue records and cadastral maps, were used to determine the legal status of tenure in the area. Actual land use was ascertained through resource mapping, transects and visits to various locations in the village. Individual and group interviews were carried out to identify various aspects of livelihood security and conflict. Discussions were held with local officials of the Orissa revenue and forest departments to understand their perspective on the situation. A second field visit was made in May 2004.

DESCRIPTION OF THE STUDY AREA

Nestled in the hills of the Eastern Ghats, Koraput district is located in the south of the Indian state of Orissa. Until 1992, it was one of the largest districts in the country. In that year, it was subdivided into four new districts: Koraput, Malkangiri, Nowrangpur and Rayagada.

Today, Koraput district covers an area of 8,379 square kilometres. It is situated between 18º 10' and 20º 10' North, and 82º 10' and 83º 20' East, with altitudes ranging from 150 metres above mean sea level to 1,500 metres. The climate is warm and humid, with mean maximum and minimum temperatures of 30.6º Celsius and 17.03º Celsius, respectively. Each year, the district receives an average 1,521.8 millimetres of rain during 82 rainy days, with the monsoon occurring between the months of June and September.

The district is made up of two distinct topographical areas: (i) the hilly Koraput plateau at an average elevation of 1,000 metres, which falls in the Eastern Ghats agro-climatic zone, and (ii) the comparatively flat Jaypur area located in the South-Eastern Ghat zone. The area selected for this case study lies in the Koraput plateau, just north of Koraput town. The topography of the study area consists of low hills interspersed with valleys. The hills are mostly covered with natural vegetation and shifting cultivation fallows, much like the rest of the Koraput plateau. On average, the official net sown area covers 25 per cent of the total area of the district and is mostly concentrated in the South-Eastern Ghat zone. In the hill regions, cultivated areas cover as little as 10 per cent of the land.

Today, the district faces two major challenges: persistent and intractable poverty, especially among the Scheduled Castes and Scheduled Tribes (see annex), and large-scale ecological degradation. Solutions to both problems have been attempted by investing in development as well as ecological restoration, including programmes for horticulture and the plantation of forest species, watershed development and soil conservation.

Two large public-sector industries—Hindustan Aeronautics Limited (defence production) and the National Aluminium Company (bauxite mines and alumina factory)—operate in the district. Two railway lines, used mainly to transport minerals, cross the district. The reservoirs of two large dam projects for electricity generation and irrigation, the Kolab and the Machkund, are located in the Koraput plateau.

Despite this investment, the efforts by government agencies to mitigate poverty and reverse the degradation of natural resources have failed to have the desired effect. Almost all Scheduled Areas in central India have, or once had, good forests. These forested areas are rich in natural resources, yet the communities who reside here are among the poorest in the country. Koraput district represents the plight of Scheduled Areas throughout Orissa and, to a great extent, central India.

REVENUE VILLAGE OF MANGARA

In the heart of Koraput district, north of Koraput town, lies the revenue village[1] of Mangara, covering an area of 845 hectares (GOI, 1991). The village is not a coherent social unit but consists, rather, of a collection of five hamlets—Bhitarmangara, Dayanidhiguda, Khariguda, Talamangara and Uparmangara—grouped together for administrative purposes. Although the hamlets are not caste- or tribe-specific, members of the same tribe or caste tend to live together.

Mangara village originally comprised Talamangara and two hamlets, Dayanidhiguda and Khariguda. At that time, a few Kondha and Paroja families inhabited the village. Dayanidhi Karan, after whom the hamlet of Dayanidhiguda is named, was a relative of the local landowner (zamindar) and migrated to the village from Koraput in 1913. Five other families migrated from the nearby villages of Gadiaguda, Kondagaon, Konpadhi and Siklaman to Dayanidhiguda at same time. These tribal families were later

[1] In the case of Orissa, a revenue village is normally not a coherent social unit, but rather comprises a number of settlements or hamlets. This is specially true of tribal areas, where settlements tend to be small and dispersed. The revenue village of Mangara is comprised of five different settlements, each of which can be seen as a separate social unit. The boundaries of a revenue village are often drawn as per the convenience of the administration rather than that of residents.

joined by one Scheduled Caste family, Archita Domb. Over the next 50 years, the hamlets of Bhitarmangara and Uparmangara were settled to accommodate the growing number of households, including some Harijan and Paroja families who settled in the hamlet that later became known as Bhitarmangara. Today, the families that originally settled in what is now Mangara village have grown to 314 households.

Four hamlets are located on the western side of the Bisipani Reserved Forest, while one is located on the eastern edge of the Malikurchi Reserved Forest. In the 1960s, the forests were leased out to contractors for harvesting, leading to depletion. The hills on the east of the village were declared as Bisipani Reserved Forest, part of the Rayagada Forest Division in 1982. The Temera stream runs through Mangara and meets the Temari River at the foot of the village. The stream carves a narrow valley between the hills, and agricultural land is located between the banks of the stream and the foot of the hills. The Visakhapatnam–Kirandul railway line, constructed in 1957, and the Koraput–Borigumma road, completed in 1972, pass through Mangara village.

The customary boundary of Mangara lay along the ridgelines to the east and west of the village, and encompassed a greater area than it does today. Historically, land and forests were customarily treated as belonging to local communities. This was, however, never codified. Customary practice changed after the Survey and Settlement, wherein all land which was not claimed by individuals was explicitly declared to be government land, and was later reserved as forest. During survey and settlement, hill slopes covered with forests were excluded from the boundary of Mangara and later included in the Bisipani Reserved Forest.

HISTORY

Until the 15th century, the area known today as Koraput district was controlled by the local zamindar, who the locals refereed to as the 'raja' (king), and was administered as a zamindari (estate). By 1765, when the Mughal emperor formally granted the area to the British, it had already been under British control for seven years. The British allowed the zamindari system to remain essentially unchanged until 1802, when the Madras Presidency[2] introduced Regulation XXV of 1802 to define the position of the zamindars. In the same year, the Jeypore[3] estate was conferred upon the then Jeypore zamindar and included the Koraput area.

During British rule, the zamindari system was a way of collecting taxes from peasants. The zamindar would collect taxes on his lands and pass this sum on to the British authorities, retaining a portion for himself.

The zamindari system remained in place well into the 20th century. In 1936, a new province of Orissa was created by merging parts of Bihar and the former Orissa province, as well as the Central Provinces and the Madras Presidency. At that time, Koraput district and the Jeypore estate were included in Orissa. Laws applicable to the Madras Presidency, such as the Madras Forest Act 1885 and the Madras Estates Land Act (MELA) 1908, continued to apply to the district until they were repealed by newer laws passed by the Orissa government. From 1936, Orissa was officially a province. After independence from British rule in 1947, 24 princely states were also merged into the province. In 1950, Orissa was officially designated a state.

Estates were abolished under the Orissa Estates Abolition Act 1951 and in 1957 Koraput came under the regular administration of the state government. Also in 1957, after the passage of the Orissa Estate Abolition (Amendment) Act 1957, the *ryotwari* revenue administration system, under which tenants on government land pay taxes directly to the state, was applied to the area (GOO, 1965).

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2 The Madras Presidency was a province of British India. Also known as Madras Province, the Madras Presidency covered much of southern India including the present-day Indian state of Tamil Nadu; the coastal Andhra and Rayalaseema regions of Andhra Pradesh; northern Kerala; the districts of Bellary, Dakshina Kannada and Udupi in Karnataka; and the districts of Koraput and Ganjam in southern Orissa.

3 The name of the *zamindari* estate is spelled 'Jeypore'. The town known by the same name today is spelled 'Jaypur'.

DEMOGRAPHICS

Koraput district, located in a Schedule V Area, is home to a population of 1,030,000, of whom nearly 51 per cent belong to Scheduled Tribes and another 13 per cent are members of Scheduled Castes. The Indian Constitution provides certain protection to Scheduled Tribes and Scheduled Castes in Scheduled Areas. The three main tribes residing in the district are the Gadaba, Kondha and Paroja (see table 1).

Nearly 71 per cent of Mangara's 314 households belong to tribal communities. Khariguda is the largest hamlet in the village, with 106 households, of which 86 belong to Scheduled Tribes, 17 to Scheduled Castes and 3 to other castes. Similarly, 63 of Dayanidhiguda's 67 households belong to Scheduled Tribes, while all of Bhitarmangara's 29 households are tribals. Talamangara's 91 households are more or less evenly divided between Scheduled Tribes (44 households) and Scheduled Castes (47 households), while Uparmangara's 21 households all belong to Scheduled Castes. The Paroja tribe is in the majority, constituting 56 per cent of all households, while 14 per cent of households belong to the Kondha tribe. The major caste residing in the village is the Domba, a Scheduled Caste which makes up 28 per cent of households.

In tribal families, it is customary for married sons to move out of their parents' home and set up a separate household. As a result, the last two decades have seen the number of households in the village increase from 221 in the late 1970s to 314 in 2003 (GOI, 1991; field survey, 2003).

The sex ratio in the hamlets of Mangara village, at 1,039 females to 1,000 males, is higher than figures for the district as a whole, at 991 females per 1,000 males (GOI, 1991). Women play a vital role in the village, accounting for 54 per cent of total earning residents.

Table 1: Demographics by hamlet, Mangara village (2003)

	Individuals				Households			
	Total	Scheduled Caste	Scheduled Tribe	Other castes	Total	Scheduled Caste	Scheduled Tribe	Other castes
Khariguda	419	75	336	8	106	17	86	3
Talamangara	320	141	179		91	47	44	0
Dayanidhiguda	258	15	238	5	67	3	63	1
Bhitarmangara	103	—	103	—	29	0	29	0
Uparmangara	81	81	—	—	21	21	0	0
Total	1,181	312	856	13	314	88	222	4

Source: Field survey, 2003.

SOCIO-ECONOMIC DEVELOPMENT

The people of Koraput district are extremely poor and more than 86 per cent of rural households fall below the poverty line (GOO, 1993). In terms of overall development, too, the district fares poorly in the government's composite index for the state, falling in the 'backward' category.[4]

The situation in the village of Mangara is no different. The lack of regular and sufficient income translates into poor nutrition, poor health, high child mortality and illiteracy. Most families in Mangara face food scarcity for up to six months in the year, and are chronically short of cash particularly when it comes to emergencies such as medical problems or occasions such as funerals and weddings. In

[4] The Committee on the Constitution of Separate Development Board in Orissa prepared a composite development index for all 314 community development blocks in Orissa, using 11 indicators for sectors such as health, education, agriculture and communications (GOO, 1994). The distribution was drawn up and divided into quartiles, which were then categorised as 'developed', 'developing', 'backward' and 'very backward'.

such situations, villagers are forced to borrow cash, with interest rates as high as 10 per cent a month, or to mortgage their land—moves that, in the long term, only serve to exacerbate poverty.

Nor has any significant socio-economic development taken place. One lower primary school, run by an NGO, operates in Mangara village along with three government primary schools. Children in government schools receive a mid-day meal, which serves as an incentive for student attendance, but residents complain of poor management and absenteeism on the part of teachers. The nearest high school is located in Koraput town.

An *anganwadi* centre in Dayanidhiguda village caters to maternal and child health and nutrition, but the supply of the medicines and food supplements for children is erratic. In major health emergencies, villagers must travel to the hospital in Koraput town. Drinking water is available from eight tube wells installed under government programmes but the quality is poor. In 2002, water-borne disease in Talamangara hamlet alone claimed 12 lives.

The poverty in Koraput and its neighbouring districts has prompted both the central government and donors to push large development investments in these districts. Massive funding for tribal development has also poured into the area through development agencies, government departments and NGOs. Most such projects focus on rural development through the development of natural resources including watershed development, irrigation and agricultural development. The most recent effort has come through the Revised Long Term Action Plan for Kalahandi, Balangir and Koraput, also known as the 'KBK project', launched in 1996 with a total budget of 62 billion rupees for the period 1997–2007. This project channels funding to the district, much of it for natural resources programmes such as watershed development, horticulture and the plantation of forest species. A watershed development project was also taken up in Mangara in the early 1990s under the National Watershed Development Programme for Rain-fed Areas. There is no trace of the work taken up under this project, which did not address issues of rights and tenure.

LAND USE

The record of rights is a register maintained by the revenue department, containing details regarding the legal ownership status of land within a revenue village. These records form the basis for land ownership throughout India. According to the record of rights for the study area, land in the village of Mangara may be divided into the following categories: revenue forest, agricultural land, communal land, cultivable waste and uncultivable waste (GOO, 2003).

Agricultural land is settled in the names of individuals in the record of rights, and as such is under private ownership. Communal land, cultivable waste and uncultivable waste are controlled by the revenue department and governed by revenue laws. According to revenue records, out of the total village area of 845 hectares, 443 hectares is categorised as uncultivable wasteland (*abad ajogya anabadi*), 57 hectares as cultivable waste, 69 hectares as communal land and 35 hectares as revenue forest. Only 241 hectares is categorised as agricultural land. Thus more than 70 per cent of land in the village is owned by the Orissa government, while residents enjoy ownership (private property) rights to less than 30 per cent of land in the village.

The largest patch of government revenue land lies between Uparmangara and Talamangara and consists mainly of uncultivable wasteland with steep slopes. Most of this area is used by villagers for shifting as well as permanent cultivation, and is known locally as Bodapahad Dongar.

Agricultural Land

Agricultural land use can be divided into four major categories. These are jhola (wet rice cultivation along stream beds), beda (flat lands used for paddy cultivation), bhata (medium land), dongar (uplands) and podu (shifting cultivation).

- **Jhola**

A paddy field that is created by diverting a stream and using the stream bed for cultivation is known as a jhola. These narrow fields are gradually extended sideways by cutting into the steep banks of a stream and constructing terraces. Existing gullies and ravines are also converted into terraced paddy fields by channelling streams, building bunds (including stone bunds) and levelling land. This terraced land is highly fertile and has the additional advantage of plentiful water supply.

Jholas are the most productive of all agricultural land in the study area. In jhola cultivation, flowing water passes through the fields. The run-off from perennial streams is often used to irrigate these narrow terraces during the summer and late winter, allowing more than one crop to be grown. Fertilised by the run-off from vegetated slopes, jholas are used to grow early and late varieties of rice.

- ***Beda***

Flat land used for the most common type of rice cultivation is known as beda. Such land is normally bunded. The average yield in beda land is normally half that of jhola land. Although not as productive as jholas, beda land has good fertility, soil moisture retention and water availability.

- **Bhata**

Medium uplands are known as bhata. Such lands are mostly not bunded, have low water retention, and are less fertile than jhola and beda lands. Bhata areas are used to grow upland paddy, maize, *ragi* (finger millet, *Eleusine coracana*), and minor millets such as *suan* and *kangu*.

- **Dongar**

Uplands, or dongar, make up nearly 80 per cent of all private land holdings in the village. These areas support the cultivation of *ragi* and minor millets such as *kangu* and *suan*; pulse crops such as *biri* (black gram, *Vigna mungo*) and *kandul* (pigeon pea, *Cajanus cajan L.*); and oil crops such as *alsi* (castor bean, *Ricinus communis L.*).

- **Podu**

Shifting cultivation, know locally as podu, is carried out on sloping hillsides (see box 1). In the past, almost 90 per cent of families in Mangara carried out shifting cultivation on various patches, mostly located in forest areas. As of 2004, most of the shifting cultivation had been stopped by the forest department and just a few patches are still cultivated in this manner. Households in Mangara cultivate three such patches, two in the Bisipani Reserved Forest and one in the Malikurchi Reserved Forest. This practice is illegal, since shifting cultivation is not permitted in reserved forest.

Box 1: Shifting cultivation in Orissa

The term 'shifting cultivation' refers to two distinct practices. The first of these is also known as 'pioneer forest farming', where farmers slash and burn existing growth, cultivate the land and then abandon it. The other system, called 'long fallow cultivation' or 'forest fallows', is one where a particular piece of land is cultivated for some years, then abandoned for the period required to restore its fertility by natural vegetative growth and subsequently cultivated again.

The distinguishing feature of shifting cultivation is that neither organic fertilisers nor manure are used to retain soil fertility (FAO, 1995). A number of authors have shown that shifting cultivation practices in general are not ecologically destructive, and that they generally become problematic only in combination with other variables, including poorly designed government interventions (Conklin, 1954; Dove, 1993; Ramakrishnan, 1992; Ruthenberg, 1980; Sunderlin, 1997; Watters, 1960). The basis of sustainable shifting cultivation in its pure form is identical with that of true sustainable forestry. The biomass is allowed to recover to the level at which it will, after clearance, permit a new harvest as good as the previous one. Two elements are involved in the case of farming: the biomass itself, and

the action of growing trees in drawing on mineral resources unavailable for food crops, so that these can in turn be released into the soil (Brookfield, Potter and Byron, 1995).

The method of shifting cultivation traditionally employed by farmers in Orissa is long fallow cultivation. In recent years, however, the fallow period has decreased dramatically as a result of land scarcity, with consequent impacts on soil fertility. The village of Mangara is a good example of this process, where a shorter rotation cycle has meant that forests are not allowed sufficient time to regenerate.

Shifting cultivation as it is practised in Orissa has not been properly documented or analysed. No studies have been carried out to measure the extent of soil loss at the outflow of a shifting cultivation watershed, or to assess its other environmental impacts. Government policy on the issue has largely been developed by non-tribal policy makers who have little understanding of the complexity of this agricultural system, the processes involved, the large number of crops that are grown, and the linkages with jhola and lowland cultivation.

- **Gochar**

All of the gochar, or pasture land, located in the hamlet of Khariguda is used for cultivation. Villagers appear to be unaware that this land is currently classified as gochar and among themselves have allocated the land to the landless for cultivation.

Patta land

Patta land (legally private land) in Mangara amounts to 241 hectares, constituting 28 per cent of the total land area of the village (excluding reserved forests). Most of this land is owned by members of the Paroja community (see table 2).

The majority of patta land is located around Khariguda and Dayanidhiguda hamlets. The record of rights for Mangara village was completed in the mid-1950s and land pattas were issued in the name of 76 families. Today, with the number of households in Mangara village at 314, most such holdings have become fragmented as they have been passed down to the heirs of the original patta holder over several generations. As a result, most households in Mangara now own less than one standard acre of land.

Table 2: Patta land by social group, Mangara village (2003)

Social group	Percentage of households	Beda land (%)	Bhata land (%)	Dongar land (%)
Paroja	56	67.74	63.43	80.29
Domba	27	21.40	19.19	7.37
Kondha	14	10.86	17.38	12.34
Others	3	0.00	0.00	0.00
Total	100	100	100	100

Source: Field survey, 2003.

According to the customary system of land inheritance, following a man's death his sons or closest male relatives divide his land amongst themselves. This division is affected by mutual understanding and no formal measurements are taken. Customary law regards descendents cultivating land as its owners, whether or not they have an individual patta in their name. Revenue taxes on the land are normally paid jointly by all men who have inherited a share. Only a small percentage of this land is recorded in the record of rights in the name of the heirs, rendering the record of rights for private land out of date.

For those who inherit land in this manner, tenure over their holdings remains insecure. They are not eligible for settlement of these lands until such time as a case is filed against them for cultivating government land, at which point their occupation becomes a matter of official record. Nor are such individuals able to benefit from legal provisions that allow the state to grant land to the landless. Since the record of rights does not record a transfer in their names, they are not officially accounted for as landless under the provisions of the Orissa Prevention of Land Encroachment (OPLE) Act 1972 (section 7(a)), and are thus not eligible to receive land from the government.

Reserved forest

The hills next to Mangara village are classified as forest. In the past, much of this area was used for shifting cultivation. Today, almost all the forested areas have been converted to reserved forest and the villagers have been forced to discontinue shifting cultivation.

Reserved forests are legally under the control of the Orissa government's forest department and are not included in the area of a revenue village. In Mangara, the reserved forests of Bisipani and Malikurchi are located on the outskirts of the village. Shifting cultivation continues to take place in these forests despite the fact that the practice has been banned. Similarly, paddy fields exist in certain patches within the Bisipani Reserved Forest, although this is now considered to be encroachment under the law. In Khariguda, residents are involved in activities to protect and regenerate forests in the surrounding area (see box 2). But their dependence on shifting cultivation and forest products is much lower than that of other hamlets.

Table 3: Forest reservation, Rayagada Forest Division

Year	Number of reserved and protected forests	Area (hectares)
1959	10	30,252
1970	1	580
1975	5	1,147
1976	10	4,019
1977	1	2,080
1978	1	50
1979	14	19,157
1980	12	8,240
1982	62	71,737
1983	15	7,639
1984	2	3,116
1985	8	8,864
1986	2	21,093
1987	1	1,283
1989	1	4,640
1992	1	3,590
Total	136	187,487

Source: GOO, 1998.

The non-recognition of rights over shifting cultivation areas during the Settlement and Survey operations had major implications on the designation of reserved forest land in Koraput. Reserved forests in Koraput district fall into different forest divisions—the Bisipani Reserved Forest is included in the Rayagada Forest Division while the Malikurchi Reserved Forest falls under the Jaypur Forest Division—and are therefore not under the jurisdiction of the same forester and forest guard. In the Rayagada Forest Division, which covers parts of Koraput and Rayagada districts, there were only 10 reserved forests and demarcated protected forests in 1959, with a total area of 30,252 hectares. From 1970 to 1992, however, 136 more reserved forests were declared, with a total area of 187,487 hectares. Of this number, 62 were declared in 1982 alone, the year in which the Bisipani Reserved Forest was formed (see table 3).

Thus, almost 82 per cent of the reserved forest in this division was declared after 1959—that is, after the decision had already been taken not to settle shifting cultivation areas with the tribal communities. In the case of the Bisipani Reserved Forest, there seems to have been little consideration that the areas being declared as forests were being used for shifting cultivation. A look at some of these forest areas on the Survey of India toposheets, prepared in 1981–82 by the Survey of India, and providing evidence of forest conditions prior to 1981, shows that many of these were open forests or scrublands, including the Bisipani Reserved Forest. The existence of open forest and scrub vegetation indicates that most of these areas were being used for shifting cultivation at that time.

Box 2: Forest protection, Khariguda hamlet

Since 1996, villagers of Khariguda hamlet have been protecting an area of approximately 80 hectares located in the portion of the Bisipani Reserved Forest that adjoins their hamlet. Their initiative is intended to manage the forest, protect it from degradation and preserve it for the long term. Pragati, a Koraput-based NGO, has since 2001 been supporting the hamlet in this forest protection initiative.

Khariguda's forest protection efforts have led to a well-stocked, regenerating forest in the protected patch. The hamlet set up a committee with both women and men as members to oversee the forest protection effort. The committee employed a forest watcher who receives a salary in cash and in kind, contributed by all the households in the hamlet. The committee developed rules for managing the

forest that have evolved to meet practical needs and requirements. Breaking these rules invites punishment by the committee. As this is a self-initiated community forest protection and management effort, the rules are not statutory, have no legal validity, and are enforced by the committee and members of the community without intervention or support from the forest department.

The Khariguda committee's rules for forest protection include:

- No one may cut any green tree in the protected forest patch;
- A person who has an urgent need for small timber or wood must seek permission from the committee. If the committee approves, the person may take from the protected patch whatever has been approved;
- No one may carry any sharp tools inside the protected forest patch;
- No one may carry out podu (shifting) cultivation inside the protected forest patch;
- Anyone setting a fire inside the forest may incur a penalty of up to 5,000 rupees. Villagers carrying out shifting cultivation next to the boundary of the protected forest patch are responsible for protecting the forest from fire;
- Hunting wild animals inside the protected forest patch is not allowed;
- Anyone may collect dried twigs and leaves from the forest for their domestic needs;
- Anyone may collect tubers, fruit and other non-timber forest products as long as doing so does not damage the trees;
- Everyone must assist the forest watcher if he requires help in curbing the activities of those who are violating the rules.

The forest department in 2002 approached the Khariguda committee to form a joint forest management (JFM) committee but the Khariguda committee refused because it did not accept the structure imposed by the forest department. The main reason for resisting JFM is that it would take away the autonomy of the village committee and open the community's forest management initiative to greater control by the forest department, which does not enjoy the trust of the villagers.

The forest protection initiative is part of a larger community land use planning effort in Khariguda that also allocates land for cultivation in the gochar (grazing) area. None of these efforts have statutory cover and, because they are being carried out on government land, are technically illegal.

Revenue Forest

Revenue forests consist of land within a revenue village, designated as forests under various categories during the time of survey and settlement. These lands are generally included within the boundary of a revenue village and are controlled by the Orissa government's revenue department. Certain provisions of forest laws apply to such areas: the felling of trees in revenue forests is regulated by the Orissa Forest Act (OFA) 1972, while under the FCA these lands cannot be converted to any other purpose without prior clearance from the central government.

Wasteland

Most of the cultivable and uncultivable wasteland owned by the revenue department is under shifting and permanent cultivation.

CHANGES IN ENVIRONMENTAL CONDITIONS

According to older residents, in the early 1950s the village was surrounded by lush forests and perennial streams. The hills around the village, once covered in dense forest, now support scrubland and open forests with no large trees. Almost all low slopes are under agriculture and present a degraded appearance. Crop yields and forest produce are said to have been abundant, and villagers were not required to turn to daily-wage labour in order to meet their needs. At that time, it was not unusual for livestock to fall prey to wild animals.

During the preparation of this study, a participatory rural appraisal exercise was undertaken in Dayanidhiguda hamlet to assess the perception of local communities regarding changes in

environmental conditions and natural resource availability over the last 60 years. The exercise sought the villagers' perceptions about the current availability of various resources, compared to previous decades, as well as changes in agricultural yields and climatic conditions. Villagers attribute the depletion of natural resources to the destruction of forests. According to them, widespread felling occurred during the 1950s and '60s, when forest areas were leased to private contractors and the Orissa Forest Development Corporation for harvesting.[5] Villagers note that construction of the Visakhapatnam–Kirandul railway line, which passes through the village and adjoining forests, has also led to deforestation. While forest land was cleared to make way for the railway, the line itself has led to further forest depletion by improving access to forest areas along its route. Residents of the village felt that with the increased dependence on charcoal making and fuel wood collection, additional pressure is now being exerted on already depleted forests.

The Bisipani Reserved Forest is degraded, although rootstocks are present. Regular hacking for charcoal making and fuel wood headloading has meant that almost all large trees have disappeared. Only one part of the forest, the portion protected by Khariguda village, shows good regeneration from rootstock and bears dense vegetation cover. Soil erosion is present, especially along watercourses down the hill slope. Forest department plantations have been hacked repeatedly and are practically non-existent. The forest still contains rootstock and coppice, and can regenerate if provided protection.

Villagers claim that the destruction of forests has led to increased soil erosion, the drying of streams in the off-season, and the siltation and sand casting of agricultural land along the stream beds. They believe that soil fertility has diminished because of the lack of nutrients from forested hillsides. The villagers noted that the availability of major non-timber forest products such as *harida* (Chebulic myrobalan, *Terminalia chebula*), *bahada* (Beleric myrobalan, *Terminalia belerica*) and *amala* has also fallen by nearly 90 per cent over the last 40 years, suggesting that species loss is also taking place.

There is strong awareness among local communities regarding the impact of forest destruction on livelihoods. It is also apparent that, in the absence of alternative sources of income, villagers are compelled to use forests destructively for short-term gain.

LIVELIHOODS

The most important source of livelihood in the district is rain-fed agriculture. According to official data for the district, average landholdings per household amount to 4.5 acres (GOO, 1993). These statistics also show that marginal farmers, whose holdings range from less than 0.04 acres to 2.47 acres, constitute 41 per cent of the total number of families in the district but own only 13 per cent of the total legal agricultural land. Tribal communities carry out shifting cultivation on hill slopes, even though this practice is banned by the government. Agricultural activities are supplemented by the collection of forest products including charcoal, fuel wood and non-timber forest products. Over the last few decades, wage labour in the agriculture and non-agricultural sectors has increasingly become a major source of income.

Table 4: Primary occupation, Mangara village (2003)

Occupation	Number of households	Percentage of total households
Forest products (collection, sale)	136	43.46
Agriculture	75	23.96
Wage labour	61	19.49
Government service	15	4.79
Business	10	3.19
Retired (pensioner)	10	3.19
Animal husbandry	6	1.92
Total	313	100.00

Source: Field survey, 2003.

Forests, land and other natural resources together form the livelihood base of at least 60 per cent of households in the study area. Agriculture, including shifting cultivation, has traditionally served as the main source of livelihood for the residents of Mangara village. Over the last decade, however, this pattern has begun to shift, largely as a result of villagers being evicted from shifting

[5] The Orissa Forest Development Corporation was created in the 1960s to undertake the commercial exploitation of Orissa's forests.

cultivation patches. The percentage of households depending on agriculture as a primary occupation has fallen from 48 per cent in 1958–59 to just 24 per cent in 2003 (Census of India, 1961). Simultaneously, the number of households depending on income from the sale of forest products (primarily charcoal and fuel wood) and wage labour has increased. Together, these activities now serve as the primary occupation for nearly 64 per cent of households (see table 4).

Today, 43 per cent of households state the collection and sale of forest products to be their primary occupation, with agriculture falling to second place, while 19 percent of households depend primarily on wage labour. Although most households no longer depend primarily on agriculture for their livelihood, farming is the single most important secondary occupation for nearly 40 per cent of households in Mangara. Wage labour also serves to supplement income, with nearly 21 per cent listing this activity as their secondary occupation, while forest product collection is the secondary occupation for a little over 7 per cent of households (see table 5). Other livelihood opportunities are insignificant despite the fact that large industrial establishments such as Hindustan Aeronautics Limited and the National Aluminium Company operate within 50 kilometres of the village.

Table 5: Secondary occupation, Mangara village (2003)

Occupation	Number of households	Percentage of total households
Agriculture	124	39.617
Wage labour	65	20.767
Forest products (collection, sale)	24	7.668
Retired (pensioner)	16	5.112
Business	1	0.319
Government service	1	0.319
No secondary occupation	82	26.198
Total	313	100.00

Source: Field survey, 2003.

A breakdown of primary occupations by hamlet shows clear differences across hamlets (see table 6). Forest product collection and sale is by far the most important source of livelihood in Dayanidhiguda, where 88 per cent of households list this activity as their primary occupation. Similarly, 72 per cent of residents in Talamangara and 44 per cent in Bhitarmangara depend primarily on forest products. In Khariguda, meanwhile, agriculture serves as the most important primary occupation for nearly 45 per cent of households.

Landownership is negatively correlated to dependence on shifting cultivation and forest product collection. Only 37 per cent of Paroja families depend on charcoal and fuel wood as their primary source of income, compared to nearly 95 per cent of Kondha families. Similarly, in Khariguda hamlet where residents own almost 58 per cent of the lowlands and 52 per cent of the uplands in the village, agriculture is the primary occupation among 52 per cent of households. Dependence on shifting cultivation is also lowest in Khariguda hamlet compared to the other four hamlets of Mangara.

Charcoal and fuel wood

Charcoal and fuel wood have become the most important source of livelihood in the study area. Residents collect these materials for sale in the nearby towns of Koraput and Jaypur, where charcoal and wood are used in hotels, roadside eateries (*dhabas*) and other commercial establishments as well as in middle-class homes.

Although the practice itself is not new, dependence on charcoal as a source of income has intensified in the recent years. Today, collecting wood for charcoal production serves as the primary occupation for nearly 44 per cent of households and the secondary occupation for another 8 per cent. But while dependence on these resources has grown, the availability of trees suitable for charcoal making has dwindled.

Charcoal making and fuel wood collection is physically arduous work, and the pay-off is relatively meagre. It is a livelihood of last resort for families with no other source of income. One batch of charcoal takes three days to prepare, from initial processing to final sale in the market, and the average income from a single batch is 120 rupees. Two batches are usually prepared each week by those for whom charcoal selling is a primary occupation. The activity is highly destructive, requiring

the felling and burning of larger trees. It is also illegal, and villagers regularly risk fines or even arrest at the hands of forest department personnel.

Other forest products

Local communities depend on forests and common lands to meet subsistence needs and generate income. Fruit, leaves and tubers collected from the forest supplement food supply, while nearly all material for construction is taken from forests and common lands. For Kondha and Paroja households, forest tubers form an important part of their diet, especially in times of scarcity. Villagers state that in the past they were able to earn a relatively decent income from non-timber forest products such as *amala*, *harida*, *bahada*, *kendu* (also known as '*tendu*', *Diospyros melanoxylon Roxb*.) leaves, *siali* (*Bauhinia vahlii*) leaves, *sikakai* (soap nut, *Acacia concinna*), *jafra* (annatto, *Bixa orellana*) seeds, *jamu koli* (Java plum, *Syzygium cumini*; also known as *jamun*) and mango.

Both food security and opportunities to earn additional income have suffered as forest resources have dwindled. This trend is confirmed by the participatory rural appraisal exercise carried out in Dayanidhiguda hamlet to determine the availability of forest products. The exercise showed that all non-timber forest products extracted by locals are scarcer today than they were 20 and even 10 years ago. For example, villagers claim that in the 1980s more than 25 quintals of *amala* was being collected, while no more than two quintals is gathered today. *Harida* and *bahada* are no longer available, because no large, fruit-bearing trees remain in the forest.

Table 6: Primary occupation by hamlet, Mangara village (2003)

Hamlet	Occupation							
	Forest products [6]	Agriculture	Wage labour	Business	Government service	Retired (pensioner)	Animal husbandry	Total
Bhitarmangara								
Scheduled Tribe	21	1	6	0	0	1	0	29
Dayanidhiguda								
Scheduled Caste	0	1		2	0	0	0	3
Scheduled Tribe	59	0	0	0	2	0	2	63
Other castes	0	0	0	1	0	0	0	1
Khariguda								
Scheduled Caste	0	3	9	0	4	1	0	17
Scheduled Tribe	12	44	23	0	3	2	0	84
Other castes	0	0	3	0	0	0	0	3
Talamangara								
Scheduled Caste	15	4	10	12	3	2	1	47
Scheduled Tribe	26	8	6	0	0	4	2	46
Uparmangara								
Scheduled Caste	8	0	1	7	1	0	3	20
Total	141	61	58	22	13	10	8	313

Source: Field survey, 2003.

Agriculture

In Mangara village, 28 per cent of land within the revenue area is legally classified as agricultural land, all of it rain fed. Apart from patta lands, most tribal families practise shifting cultivation on revenue and forest lands. Permanent cultivation is also carried out on government land, including

[6] Collection and sale, primarily of charcoal and wood.

gochar. For most households, production from agriculture currently provides only a few months of food security each year. The principal crops grown are rice, minor millets and maize. Except for a few jhola patches, all land is cropped only once in the *kharif* season, during the June–October monsoons. Almost no chemical inputs are applied and mostly traditional varieties of food grains are grown.

▪ Shifting cultivation

A traditional practice among the Kondha and Paroja tribes, shifting cultivation is carried out on forested hill slopes. The patches used are more or less fixed, and cultivation rotates between the same patches year after year.

During the months of March and April, trees and bushes are cut and burnt to clear slopes for cultivation. The land is again cleared in May–June, when new shoots are removed. After a shower or two of pre-monsoon rains, the debris and ashes are spread over the field. Hoeing and sowing takes place between June and July.

The same patch will be cultivated for two years in succession and then left fallow for four to 10 years, while farmers move to the next patch. Three to five such patches may be cultivated by the same household in rotation. During the fallow period, the forest regenerates and is subsequently cleared during the next cycle, providing nutrients for the crops.

In the past, almost 90 per cent of families in Mangara carried out shifting cultivation. The practice was not only an important source of food but also provided households with much-needed cash income. In 1982, most of the areas used for this purpose were included as part of the Bisipani Reserved Forest, where the forest department gradually put an end to shifting cultivation.

Today, only 35–38 per cent of the original area used for shifting cultivation is still farmed. Since 1998, farming in Kantamali, Lohaguli and Muskudki has stopped more or less completely, while patches in Boda Pahada and Kalikado Dongar are still cultivated. Parts of the Bisipani and Malikurchi forests near Talamangara hamlet are also used for shifting cultivation, since the area is at some distance from the road and is seldom visited by forest department personnel.

Restrictions on shifting cultivation in reserved forests and the resulting shortage of shifting cultivation land have meant that the patches in revenue lands that are still used for this purpose are farmed more intensively. The increased pressure has led to the expansion of shifting cultivation to more marginal lands which are not suitable for the purpose (less soil, less fertile, more prone to erosion). Both of these processes are leading to the degradation of revenue land, with low regeneration of secondary growth and higher soil erosion. The restrictions have also meant that some tribal communities who previously depended entirely on this type of cultivation have now been forced to shift to selling fuel wood and charcoal as a full-time occupation. Reduction in the shifting cultivation cycle has not been accompanied by increased investment in land conservation or changes in land use to agroforestry or plantations since the cultivators have no secure tenure over government land.

Wage labour

Nearly 20 per cent of households in Mangara list wage labour as their primary occupation. Most such families are either landless or owners of marginal holdings, amounting to less than 1 hectare. Opportunities for employment are scarce, except for work in brick kilns near Koraput town and railway line repairs around Khariguda and Talamangara, where most daily-wage labourers reside. Additional earning opportunities are occasionally provided by the forest department's seasonal plantation programme. In 2003, the average daily wage for men and women working outside the village stood at 45 rupees and 40 rupees, respectively.

Within the village itself, employment opportunities are even more scarce. The Kondha and Paroja tribes practise community labour sharing, where individuals work on each other's land as required and receive food in exchange for their effort.

LOCAL GOVERNMENT

The system of local government, known as Panchayati Raj, consists of four tiers of elected self-government, each with financial and administrative responsibilities and powers. The basic level is the village, whose local government institution is the Palli Sabha. In Orissa, a Palli Sabha consists of approximately 60 households. Each Palli Sabha elects a ward member to represent it in the Gram Panchayat, which is the next level of local government and is composed of a cluster of villages. The Gram Sabha, or inter-village council, is composed of representatives from the Gram Panchayats.

The next higher level of local government is the 'block', which is an administrative sub-unit, demarcated for the purpose of development. Orissa is divided into 314 community development (CD) blocks, each consisting of a few hundred villages. Koraput district has 14 CD blocks. The Panchayat Samiti is the block-level Panchayati Raj institution.

The district-level self-government unit is known as the Zilla Parishad. The Orissa Zilla Parishad Act 1994 provides for proportional representation of Scheduled Castes and Scheduled Tribes in the Zilla Parishad. Districts are divided into tehsils, with a tehsildar in charge of each. Each tehsil is further divided into 'revenue inspector circles', the basic units for land revenue collection. The revenue inspector is the local-level state revenue department functionary who maintains land records for the area under his jurisdiction. A district-level officer of the state forest department is responsible for administration and management of forest lands, including reserved and other forests.

In 1996, Parliament enacted the Panchayats (Extension to Scheduled Areas) Act (PESA) which extends the Panchayati Raj system to the tribal areas of eight states including Orissa, giving tribal communities powers of self-governance on the basis of their customary law, social and religious practices, and traditional community resource management practices. PESA empowers the Gram Sabhas in Scheduled Areas to approve development plans and select beneficiaries of poverty alleviation programmes, as well as to control minor water bodies, minor minerals and non-timber forest resources. PESA provides for consultation with the Gram Sabha before acquisition of land by the government within the Panchayat area. Gram Sabhas in Scheduled Areas also have the authority to control land alienation, impose prohibition, manage village markets and resolve internal conflicts by traditional methods.

After the enactment of PESA, the Orissa government in 1997 amended the Orissa Gram Panchayat Act 1964, Orissa Panchayat Samiti Act 1959 and Orissa Zilla Parishad Act 1991. The amended Orissa Gram Panchayat Act, however, does not give the Gram Sabha control over alienation of land as envisioned in PESA. Nor does it require that the Gram Sabha be consulted before government acquisition of land in the Panchayat takes place. Instead, it is the Panchayat Samiti, the next higher level in the system, that is to be consulted, leaving no veto power to the Gram Sabha.

In practice, the real spirit of PESA has not been implemented in the Scheduled Areas. PESA has not realised its potential, at least in part because certain elements in the bureaucracy, not only in Orissa but across the country, have an anti-tribal and anti-poor bias (Ojha, 2004). It has not become part of mainstream political or policy discourse, in Orissa or elsewhere. Many academics, administrators, policy makers and even parliamentarians remain unaware of it. Tribal communities who are made aware of PESA are enthusiastic but unprepared to negotiate on matters of self-government and development as envisaged by the law.

RESOURCE RIGHTS

Two resource rights regimes operate in Mangara: the customary laws by which the tribal people have traditionally governed themselves and their relationship with their land and the resources on which their livelihoods depend; and the statutory regime administered by the authorities of the state and central governments.

CUSTOMARY RIGHTS

Powerful support for the existence of customary land rights comes from the report of a planning commission study of tribal landholding systems all over India, which states that the decision during the survey and settlement processes not to settle lands held under customary tenure was a “policy decision of the government, as a result of which the preparation of Record of Rights turned into denials of rights which were enjoyed by the concerned population for generations” (GOI, 1986).

Customary land ownership in the study area is determined by the investment of work rather than by the investment of money—the household which clears forest growth and prepares land for cultivation becomes the customary owner of that land and enjoys the right to transfer or mortgage it. These customary rights, evolved over many generations, have been changing in the last few decades in response to increasing population, immigration and statutory tenure systems. Villagers continue to observe customary tenure systems and, by doing so, often come into conflict with statutory provisions.

Grazing areas

Each hamlet within the customary boundary of Mangara village sets aside an area for grazing during the *kharif* cropping season. At other times of the year, cattle are left free to graze. The land recorded as gochar is one patch near Khariguda hamlet and located at a great distance from other hamlets such as Talamangara.

Trees

Tribal communities recognise customary rights in trees, particularly fruit-bearing trees, planted by individuals and communities. Certain trees, the jaggery palm (*caryota urens)* for example, may be held even by individuals within families. There are strict customary norms on using trees belonging to others.

Jhola land

Jhola lands are created by individual households over a period of time. The prevailing image of tribal communities of Koraput as poor land managers is belied by the high levels of skill and the understanding of soil and moisture conservation shown in jhola cultivation (Kumar et al., 2004).

Jhola creation is a dynamic, ongoing process where new jholas are formed and existing ones are expanded. In the process, land now designated as government land of various types is often brought under jhola cultivation—in many such cases, where the cultivator has no recorded right to the land—and is considered to be encroachment under statutory law.

Much of the jhola land currently used by farmers in Mangara is not owned legally by them, although they claim traditional rights over it, and they cannot sell it. Nevertheless, since jholas are generally highly productive, they are often mortgaged, since lenders are willing to loan money against such relatively valuable lands.

Medium lands and uplands

Under the customary system, medium lands (bhata) and uplands (dongar) are also deemed to be private property which may be sold or mortgaged. Traditionally, these lands were created by clearing forest area which was then given over to permanent cultivation.

As the number of households in the study area has increased, new bhata and dongar land has been cleared and brought under cultivation. For various reasons, however, much of this land has not been settled with cultivators and under statutory law this use is encroachment. The main reasons for non-settlement are the lack of awareness on the part of cultivators of the statutory consequences of customary practices, and the laxity or, in some cases, rent seeking, on the part of revenue and other officials.

Shifting cultivation

Tribal communities in northern and north-eastern India practice shifting cultivation. It has been estimated that as much as 85 per cent of total cultivation in north-eastern India is shifting cultivation, and Orissa accounts for the largest area under shifting cultivation in the country. A recent study estimates that out of a total of 37,084 square kilometres under shifting cultivation by 700,000 tribal households in Orissa, 11,528 square kilometres, or almost 40 per cent of the total area in the state, was in Koraput alone (Jyotishi, 2003; Pattnaik, 1993).

Shifting cultivation is generally carried out on hill slopes, since flatter land is the hands of affluent, non-tribal communities. For tribal peoples, shifting cultivation is not just the basis of their livelihood, but also an important part of their way of life, with many rituals and festivals centred on the fields (Ranjan and Upadhyay, 1999).

There have been few studies of the shifting cultivation system as it was practised during the pre-Independence period in Orissa. In most of Orissa, princely rulers and zamindars did not actively discourage shifting cultivation (Mahapatra, 1997). In Jeypore estate, shifting cultivation was discouraged in forests carrying good timber by declaring these forests as reserves, but each family was given permission to fell a reasonable area of unreserved forest for the purpose of shifting cultivation on payment of a token amount (GOO, 1966).

As with jhola, bhata and dongar lands, shifting cultivation patches are customarily deemed to belong to the household that first cultivated the land. But because of the intermittent nature of shifting cultivation, recognition of customary ownership of such land takes longer than recognition of land under permanent cultivation. Each community has its own traditional area in which cultivators from that group may clear and claim shifting cultivation patches, with the Kondha and Paroja communities controlling separate patches.

The laws passed since Independence in the State of Orissa have ignored customary rights of tribal communities on lands used for shifting cultivation by the simple expedient of not mentioning the practice or, as in the case of the OFA, expressly forbidding it.

STATUTORY RIGHTS

The current statutory regime and the systems that administer it are firmly rooted in the British colonial period, from the mid-18th century until the mid-20th century. All laws currently in force, however, were enacted post-Independence.

Survey and Settlement

> "It has been mentioned to the members of the study group by knowledgeable persons that the tribals look upon the Survey and Settlement Operations as an operation of confiscation of their land rights" (GOI, 1986).

Under the zamindari system prior to survey and settlement, individuals were allowed to "own" land in the sense that their holdings were inheritable and transferable. In effect, however, such individuals were nevertheless tenants because they could be evicted by the estate for failure to pay rent. It is reported that such evictions were not common in the Jeypore estate (GOO, 1965).

MELA, which applied to the zamindari estates of the Madras Presidency, covered various aspects of land revenue administration under the zamindari system including the responsibilities of landlords, the relationship between tenants (*ryots*) and landlords, rules for settling land and preparing records of rights, and the determination of land rents. The law also provided safeguards for tenants in the form of protection from eviction and the requirement that proper records be maintained. Many of these protections were, however, not properly implemented in the Jeypore zamindari tracts (GOO, 1965). For instance, although MELA required records of rights to be maintained, no holdings of individual tenants were mentioned in any records. As a result, no formal record of land ownership or the tenancy of individual cultivators existed for the district.

The primary purpose of the 19th century survey and settlement operations launched by the British in the Madras Presidency was to determine land revenue dues, rather than to record rights in land. In Koraput, ownership and tenure remained unrecorded until the survey and settlement exercise that was conducted during the period 1938–64. During this process, records of rights for different areas were prepared and published. Since no formal record of ownership or tenancy had been maintained prior to that date, the 1938–64 Koraput survey and settlement was extremely important since it was the first time that land ownership was recorded in exhaustive detail. The process was all the more significant because rights that were not recorded were effectively lost.

Alienation of tribal private land to non-tribals has been recognised as a serious problem for almost a century. In former Madras Presidency areas, the prohibition on the transfer of land by members of tribal communities (Adivasis) in favour of non-Adivasis was attempted through the enactment of the Agency Tracts Interest and Land Transfer Act 1917 by the government of Madras (GOO, 1965). Under this law, during the 1938–64 survey and settlement, land transfers after 1917 should have been detected and land reverted to tribal owners. In many cases, however, the transferees had managed to mutate their names in the Jeypore Estate records even though the transfer of land was illegal under the Agency Tracts Act. Unaware of the legal intricacies of land laws, tribal communities were unable to raise the necessary legal objections during the preparation of preliminary records of rights during the settlement (GOO, 1965). As a result, large areas of land were registered in the name of non-tribals.

The survey and settlement process used the definition of tenant (*ryot*) that was set out in MELA, according to which a person who had occupied land continuously for 12 years was defined as a *ryot* (section 3(15)). Cultivable land other than private land and communal land was eligible for settlement with the *ryot*. During the survey and settlement, and in the preparation of records of rights, however, the definition of *ryot* provided in MELA was interpreted in a manner which led to the dispossession of tenants in areas used for shifting cultivation.

Land survey and settlement in Mangara was completed in 1952 and the record of rights was published in 1956. A total of 76 families was recorded as having either a lease or full title to land. The boundary of Mangara village was drawn during the survey and settlement, and most of the land within the boundary was settled as government land.

No documentation or research exists on recorded or unrecorded rights in land used for shifting cultivation. In 1954–55, surveys were initiated to demarcate shifting cultivation areas in a number of villages in the Nandapur area of Koraput district. At the same time, it was decided that in the future no cultivation would be allowed on slopes steeper than 10 degrees and that encroachers would be evicted. The process continued until 1957–58, by which time the demarcation of shifting cultivation areas in 231 villages had been completed. In 1957–58, the Orissa government ordered the survey to be halted (GOO, 1965).

The following year, in a letter dated 12 March 1959, the Orissa board of revenue ordered that all land in the continuous possession of farmers for 12 years, on any slope, was to be recorded in their names. All land on hill slopes which had not been in continuous possession of one tenant for 12 years was to be recorded as government land (GOO, 1965). This order was specifically aimed at shifting

cultivators, since in podu two to three years of cultivation is followed by a long period of fallow. The time during which a podu patch lay fallow was not taken into account when 12-years' continuous possession was calculated. All such areas were consequently recorded as government land. In fact, the Koraput Survey and Settlement Report notes that podu (shifting cultivation) was neither recognised nor assessed (GOO, 1965).

Not only land, but also trees planted on sloping lands used for shifting cultivation were recorded as government property. All mango, tamarind and jackfruit trees on these lands in Mangara village have been legally government property since settlement was completed.

In 1992, the state government issued an order (Letter No. 20321, dated 10 April 1992) which allowed land on slopes of up to 30 per cent to be settled with individual cultivators in Kashipur block in Rayagada district, and which was to be extended to all Scheduled Areas. The process of this settlement has been extremely slow and cumbersome and very few titles to land (pattas) have been issued. Almost 12 years later, in February 2004, the MoEF took a decision to settle all land under cultivation by tribals as of 1993. The order did not provide for recognition of shifting cultivation, was otherwise ambiguous, and was stayed by the Supreme Court later the same year.

The decision not to provide tribal communities any form of tenure in lands used for shifting cultivation, and subsequent inaction on this key land settlement issue, have created a situation in which the classification of a substantial area of land in Orissa does not reflect historical or actual land use. The recording of shifting cultivation areas as government land has meant that the state government owns 70–90 per cent of the land in most villages in the hilly tracts of Scheduled Areas, even though most of these areas were being traditionally used for shifting cultivation. This situation is common in all hilly tracts of Scheduled Areas in Orissa.[52] In Mangara, the large gap between actual land use and legal categorisation of land has created the basis for livelihood insecurity and conflict.

The Godavarman case

All aspects of the current statutory and administrative regimes governing forests must be considered in light of a judicial proceeding that started in 1995 and continues 11 years later—the Godavarman case. In considering the multiple aspects of this omnibus litigation, the Supreme Court has principally relied on official records, on the presumption that all forest lands have been notified following the settlement of rights in accordance with the law. In the case of Mangara, and of many other villages in Scheduled Areas around the country, this presumption is disproved on the ground.

In 1995, the Supreme Court began hearing what is popularly known as the 'forest case' (Writ Petition No. 202 of 1995, T.N. Godavarman Thirumulkpad vs. Union of India and others). This case started as a public interest petition concerning the implementation of the FCA, filed by T.N. Godavarman Thirumulkpad, a former estate owner in Tamil Nadu, to prevent logging in forests that had formerly belonged to his family (*Down to Earth*, 2003). Also in 1995, the Supreme Court took up a case related to the settlement of rights in national parks and sanctuaries under the Wildlife (Protection) Act 1972 (Writ Petition No. 337 of 1995, The Centre for Environmental Law, WWF vs. Union of India and others). Orders under this case have involved the FCA as well.

A comprehensive examination of the history of these cases is beyond the scope of this study. What follows is a summary chronology of how a case that began as an effort to curtail logging in the forests of Tamil Nadu has evolved into an action with potential to threaten the livelihood security of tribal, forest-dwelling peoples in the study area and elsewhere in the country

The 'continuing mandamus' intervention approach the Supreme Court has taken with these two cases has made it the country's principal decision-maker on issues related to forests and wildlife. Rather than issue a final judgment, the Supreme Court continues to hear related applications and issue

[52] For example, a study in Keonjhar district found that in five tribal villages the land recorded in favour of tribal peoples constituted only 2.38–23.50 per cent of the land these communities had cultivated (GOI, 1986). Another study on shifting cultivation in five villages in three different regions of Orissa found that 45–95 per cent of village area was recorded as wasteland, with only one village having less than 70 per cent wasteland (Jyotishi, 2003).

orders. Since 1996, there have been more than 1,600 such interlocutory applications in the forest case and almost 100 in the protected areas case.

The Indian Forest Act 1927 does not define the term 'forest'. On 12 December 1996, the Supreme Court issued an order in the forest case that, among other things, stipulated that the term must be understood according to its dictionary meaning. This order covers all statutorily recognised and recorded forests, irrespective of ownership. The same order also enforced the requirement that logging and all other activities in any forest throughout the country must have prior approval of the central government and immediately suspended those that did not, banned the movement of timber by any means from any of the seven north-eastern States, and required all states to constitute Expert Committees and submit reports to the Supreme Court. The Supreme Court's strong criticism of poor implementation of the FCA created pressure on state governments to improve their administration of forest lands.

Encroachment became an issue in the context of the forest case beginning in 1999, with an interlocutory application filed to ban logging and non-forest activities in the Little Andamans, and to remove encroachments from the tribal reserve there. An intervention petition filed on 23 November 2001 in the Andamans application raised the issue of encroachments in forest land in the entire country, noting that states had not removed encroachments from forests following the enactment of the FCA. It asked the Court to require state governments to clear post-1980 encroachments, prevent further encroachments, and not allow any existing encroachments to be regularised without the Court's permission, apparently ignoring a series of six circulars on regularising or settling claims of forest dwellers—primarily tribal peoples—issued by the MoEF in 1990. Since the survey and settlement process was flawed and records of rights were known to be inaccurate, this petition opened the door for subsequent actions that were to have far-reaching effect (*Down to Earth*, 2003).

On 18 February 2002, the Court ordered state governments to respond to questions about forest encroachment and on April 1 noted that the states had indicated that the central government would issue directions within six weeks. The MoEF on 3 May 2002 sent a circular to state officials and forest authorities in the entire country, directing them to evict by 30 September all forest encroachers "not eligible for regularisation". Following considerable political opposition, the MoEF on 30 October 2002 issued a clarification specifying that pre-1980 encroachments were still eligible for regularisation and asking the states to show progress in doing so (*Down to Earth*, 2003).

Pursuant to another order in the forest case, on 17 September 2002 the MoEF established the Central Empowered Committee (CEC) as a statutory authority under section 3(3) of the Environment (Protection) Act 1986, with a five-year mandate to monitor compliance with the orders of the Court. Since its establishment, the CEC has considered almost 1,000 applications on a wide range of issues related to the case; some of the interlocutory applications filed with the Supreme Court have contested orders of the CEC.

This ongoing process has led to fundamental changes in the pattern of forest management and governance. As it continues, in 2006 the MoEF issued a tender for consultancy services to assist in developing a definition of forests in the Indian context. Work is expected to begin in the first quarter of 2007 and continue for 20 months.

Land

The Constitution of India grants concurrent jurisdiction over forests (Seventh Schedule, List III, item 17A), which means that both the central and state governments have the power to legislate on matters concerning forests. States have the power to legislate with regard to land (Seventh Schedule, List II, item 18). All laws governing land in Orissa are therefore state laws (see table 7).

▪ Revenue land

The principal laws governing revenue lands are the Orissa Government Land Settlement Act (OGLSA) 1962, the Orissa Government Land Settlement Rules 1983, the Orissa Prevention of Land Encroachment (OPLE) Act 1972 and the Orissa Prevention of Land Encroachment Rules 1985. Revenue lands of all classifications are controlled by the revenue department.

Table 7: Legal regime governing various categories of land

Category	Applicable laws
Reserved forests	▪ Orissa Forest Act 1972, sections 3–29 ▪ Forest Conservation Act 1980 ▪ Orissa Forest (Grazing of Cattle) Rules 1980, sections 5 and 6 Repealed by the Orissa Forest Act 1972: ▪ *Indian Forest Act 1927* ▪ *Madras Forest Act 1885*
Forests on revenue land	▪ Orissa Forest Act 1972, sections 33–38 ▪ Forest Conservation Act 1980
Revenue wasteland	▪ Orissa Prevention of Land Encroachment Act 1972 ▪ Orissa Prevention of Land Encroachment Rules 1985 ▪ Orissa Government Land Settlement Rules 1983
Pasture (*gochar*)	▪ Orissa Government Land Settlement Act 1962 ▪ Orissa Government Land Settlement Rules 1983 ▪ Orissa Prevention of Land Encroachment Act 1972 ▪ Orissa Prevention of Land Encroachment Rules 1985
Private (patta) land	▪ Orissa Survey and Settlement Act 1958 ▪ Orissa Land Reforms Act 1960 ▪ Orissa Scheduled Areas Transfer of Immovable Property (by Scheduled Tribes) Regulation 1956 ▪ Orissa Scheduled Areas Transfer of Immovable Property (by Scheduled Tribe) Regulation 2000

Source: Desk review, 2003.

The OGLSA prescribes how land owned by the government may be classified and settled. Under this law, government land is defined as any wasteland belonging to the government, whether cultivable or not (section 2(b)). Land that has been demarcated through the survey and settlement process under the Orissa Survey and Settlement Act 1958 may be categorised as either cultivable wasteland (*abad jogya anabadi*) or uncultivable wasteland (*abad ajogya anabadi*). Under the OGLSA (section 3(1)(a)), land within the boundary of a village is to be reserved for specific purposes including *sarbasadharana* (land set aside for communal purposes such as burial or funeral grounds, paths), gochar (pasture land), *gramya* jungle (village forest), *basti jogya* (land suitable for homesteads) and *urnatajogana jogya* (land suitable for future development purposes). The most important categories among these are the village forest and pasture land, and a minimum of 10 per cent and 5 per cent, respectively, of the effective area of the village has to be settled under these categories. Once reserved, such land cannot be leased or settled by the revenue department without first changing its revenue classification. The FCA applies to village forest and forbids its conversion to non-forest use.

Revenue lands can be settled by the state government according to the principles laid out in the OGLSA (section 3), which allows revenue officials to settle government land subject to the restriction that 70 per cent of such land in a village is to be settled with Scheduled Tribes and Scheduled Castes (section 3(2)). The government has the discretion to specify the maximum amount of land that may be settled with an individual. Uncultivable government land may not be settled for agriculture but can be settled for other purposes (Government of Orissa Instructions for Reservation of Government Land for Specific Purposes in Rural Areas, dated 28 January 1966). Besides settling land with the landless and other eligible categories of land users (OGLSA, section 3(3)) for agriculture, the government can put all government land to use for development projects, or allot land to industries, projects, government departments, state or private corporations, local statutory bodies, or cooperative societies (OGLSA, Schedule II). In doing so, the government is not accountable to inhabitants of the village in whose boundary these lands are settled, and who may have been using the land for agriculture or as commons.

Under the OPLE, unreserved government land encroached by a landless person may be settled with that person, up to the limit of a total landholding of one standard acre (section 7(a)). The Act allows encroachments to be settled under specified conditions, but only officially landless persons are entitled to this facility. Under the OPLE, a landless household is defined as a family in possession of one standard acre of land or less, and whose total annual income does not exceed an amount that is fixed and revised periodically; currently, that income ceiling is 15,000 rupees.

Although the landless are legally entitled to claim land rights, in practice they must first commit an unlawful act—encroachment, which is subject to summary eviction (section 7(1))—and the revenue inspector must detect the case and report it to the tehsildar (Orissa Prevention of Land Encroachment Rules 1985, section 3(1)). The illegal act thus establishes a record of the claim. The tehsildar is empowered to initiate proceedings in an encroachment case, ascertain if the person is to be evicted

or is eligible for land settlement by virtue of landlessness, and then settle the land in the name of the encroacher (OPLE Rules 1985, section 15). The entire process hinges upon whether or not the encroachment is reported by the revenue inspector in the first place, and whether proceedings are initiated by the tehsildar. There are few or no incentives for these officials to do so and frequently bribes are demanded (Mearns and Sinha, 1998).

▪ Revenue forest

The term 'revenue forest' refers to lands that have been variously classified in the revenue records as *gramya* jungle (village forest), *khesara* forest, *patra* jungle, and *bada* (big) jungle. The revenue department controls revenue forests but the provisions of the FCA and the OFA also apply. In Orissa, 60 per cent of recorded forest land falls into the category of revenue forest. Of the 1,879 square kilometres of forest land in Koraput district, some 1,400 square kilometres (nearly 75 per cent) is classified as revenue forest. In Mangara village, only 0.35 square kilometres (or 4 per cent) of land has been recorded as revenue forest.

Although many of these lands were recorded as private forest in the revenue records, uncertainties about the location and extent of these forests persist and their status under the OFA is unclear. The forest department claims that these are protected forests under sections 33–38 of the OFA, but the statutory process for declaring protected forests has not been followed in many cases. Most revenue forests have not actually been demarcated and local communities have cleared such forests for agriculture. This has created an anomalous situation in many areas where cleared forest land used for cultivation cannot be settled with the cultivators, as the law prohibits it.

The FCA provides that no forest can be transferred to non-forestry use without prior approval of the central government. Before the FCA, revenue forests were being settled as a matter of policy in the name of eligible persons cultivating them. Under the FCA this is no longer permissible (section 2(ii)). In Orissa, the state government has incorporated a corresponding provision in section 6(5) of the Orissa Government Land Settlement Rules 1983, according to which settlement of any land categorised as forest in the revenue records for any purpose is expressly forbidden without government permission. Following the 1996 Supreme Court interim order in the Godavarman case, the state government ordered a joint enquiry by the forest and revenue departments into the location of these forests.

▪ Private land

Private (patta) lands in Orissa are primarily governed by the Orissa Scheduled Areas Transfer of Immovable Property (by Scheduled Tribes) Regulation 1956 (OSATIP Regulation), Orissa Survey and Settlement Act 1958 and Orissa Land Reforms Act 1960. The Orissa Survey and Settlement Act 1958 sets out procedures for carrying out surveys, preparing the record of rights for individuals and settling claims to land.

The OSATIP Regulation, which applies only in Scheduled Areas, forbids the sale of land by a member of a Scheduled Tribe to any person who is not a member of a Scheduled Tribe, but permits mortgages with public financial institutions (section 3(1)). The Orissa Land Reforms Act 1960 enables permanent, heritable and transferable rights over land for cultivators (section 6) and stipulates an individual landholding ceiling of 10 standard acres (section 37). Like the OSATIP Regulation, the Land Reforms Act forbids the transfer of patta land by a member of a Scheduled Tribe to any person who is not a member of a Scheduled Tribe, but provides that such sales may occur with written permission from the revenue officer. This act applies even in non-scheduled areas (Section 22).

Forest

The OFA, which is based on the Indian Forest Act 1927 and replaces it with respect to Orissa, governs forest management in the state, subject to the provisions of the FCA. The OFA sets out a procedure for settling rights in areas declared as reserved forest (sections 5–20). Under the OFA, and similar to the procedure for settling encroachments on government lands generally under the OPLE, the forest department must file cases against farmers cultivating reserved forest land in order to start the process of settling land in their names, according to their eligibility.

The FCA provides that the following actions require prior approval of the central government: de-reservation of forests; use of forest land for non-forest purposes; leasing forest land to any private party; and clearing natural forest growth for reforestation. Non-forest purposes are any purposes other than reforestation (section 2). The penalty for violations is imprisonment for up to 15 days (section 3A). The Indian Forest Act 1927 had allowed state governments to approve the same actions and activities that are listed in the FCA.

Unlike customary law, statutory law does not provide for rights to trees. Under various government programs, however, the state may grant usufruct rights in trees on government land to individual households or a community. In some cases, local communities' customary rights have been recognised under statutory law—they are allowed to harvest certain species of trees from non-reserved forests, for example.

▪ Reserved forest

Reserved forests are declared under the OFA, which prescribes a process allowing for the detailed investigation and settlement of existing rights and land use. Reserved forests are not included in the record of rights of the revenue department, nor are they included within village boundaries (OFA, section 21).

Pre-existing rights over land proposed to be declared as reserved forest must be claimed during the process of reservation (OFA, sections 4–20) and may be recognised, surrendered or acquired. These include rights of way, rights to collect a specified amount of forest products, and rights for grazing a limited number of animals. Section 10 stipulates that no claims related to shifting cultivation may be admitted during the process of settlement of rights for the reservation of forests.

Where there are pre-existing rights over land used for purposes other than shifting cultivation in an area to be declared as reserved forest, the land may be either excluded from reservation or acquired through the application of the Land Acquisition Act 1894 which provides for compensation (OFA, section 11). Once a reserved forest is declared, the land comes under the control of the state forest department and almost all activities, including shifting cultivation, firewood collection, grazing animals and taking timber for non-commercial purposes, that were previously carried out by area residents become illegal unless they are specifically allowed in the notification declaring the reserved forest.

In Koraput, 478.86 square kilometres of reserved forests have been notified, constituting approximately 25 per cent of the total legally classified forest land in the district. The Bisipani Reserved Forest, spread over 2,149 hectares, was declared in 1982.

CONFLICT BETWEEN REGIMES

At the national level, the Indian Forest Act 1927 is an early expression of the dominance of the written rules of statutory law over the unwritten ones of customary law. Its bar against acquiring rights except by written agreement discriminates against illiterate farmers.

Statutory law enacted in Orissa within 15 years of Independence acknowledges that customary law exists and operates—and explicitly overrides it. The Orissa Land Settlement Act 1962 stipulates that its provisions on reservation and the settlement of government land apply "notwithstanding anything to the contrary […] in any custom, practice or usage having the force of law" (section 3). The same law, however, provides that 70 per cent of government land settled in a village is to be settled with Scheduled Tribes and Scheduled Castes, in proportion to their respective populations in the village. These provisions illustrate two fundamental inconsistencies that characterise the interaction between the customary and statutory regimes governing land and resources in Orissa: conflict between ground reality and the formal system, and conflict between the letter and intent of statutory law and the way in which it is applied.

The conflict between ground reality and the formal system was clearly evident in the survey and settlement process. Farmers' rights in land could be recognised if they were able to prove continuous occupation of the land, but the shifting cultivation practised by tribal communities is by definition not

continuous. Although survey and settlement did not recognise any form of tenure in lands used for shifting cultivation, this practice and other customary methods for permanent cultivation as well, have continued for reasons linked to the second fundamental inconsistency, which is the gap between the substance of statutory law and how it is implemented.

Statutory law does provide mechanisms for landless people and others to assert claims to forest land and other government land. Government authorities, however, have the discretion to initiate most of the procedures required to implement them, disempowering the people whose livelihoods depend on access to the land. The difference between actual land use and legal status also means that the government can divert for development and other projects lands that are legally government lands but which are nevertheless being used for subsistence farming, without compensating the de facto land users.

Statutory law has provided a means to resolve the conflicts with customary law. PESA, which grants substantial self-government authority to tribal communities in Scheduled Areas, explicitly makes the link between customary and statutory law, providing that state law “shall be in consonance with the customary law”. PESA, however, like laws that govern land and forests, is not uniformly and equitably applied.

With increasing population and the resulting demands for land, the anomalies between statutory land tenure and actual customary land use and between the law and its application are leading to increasing conflicts and tensions.

Shifting cultivation

In Jeypore estate prior to survey and settlement, certain tribal communities were allowed to practise shifting cultivation on unreserved forest land with the permission of the collector. The Indian Forest Act 1927 recognises the practice in its provision that shifting cultivation in reserved forest land is a privilege subject to control, restriction and abolition by state governments (section 10).

Because shifting cultivation lands were not recognised during survey and settlement, tribal cultivators had no prior right to assert when the reserved forests were declared in 1982 and rights to shifting cultivation within those areas were effectively extinguished. In Mangara, this meant that many shifting cultivators were forced off land they had cultivated for generations.

Nearly 90 per cent of tribal families claim to have practised shifting cultivation in at least one of four shifting cultivation patches—Dhangumi, Kantamali, Lohaguli or Muskudki—prior to the declaration of the reserved forest in 1982, and continued to farm the land after the forest was reserved. The Kondha had carried out shifting cultivation in Lohaguli Dongar while the Paroja cultivated patches in Dhangumi. Both areas are now located within reserved forest, and the communities were forced out by the forest department in 1997–98.

The forest department began gradually to implement the restrictions on shifting cultivation in the reserved forest. Since 1998, following the Supreme Court's 1996 interim order in the Godavarman case, the forest department has been cracking down hard on cultivators, confiscating their farming implements. Most shifting cultivation in the Dhangumi, Lohaguli and Muskudki patches in the Bisipani Reserved Forest has come to a standstill.

Villagers estimate that after 1998, the total land under shifting cultivation in both reserved forest and on revenue land has fallen to 35 per cent of the original area used for this type of agriculture. Some shifting cultivation continues to take place in the Malikurchi Reserved Forest and the Bisipani Reserved Forest near the hamlet of Talamangara, since these areas are far from the road and therefore difficult to police. More recent attempts by the forest department to stop shifting cultivation in the Bisipani Reserved Forest followed the 2002 MoEF order for the eviction of encroachers on forest land.

Jhola land

Local residents claim that Champa Jhola, Niputi Jhola and Road Jhola were created by their forefathers before the 1960s. During the survey and settlement process, these and other jhola areas, especially those created in forested valleys, were not settled with the cultivators. Since the end of the survey and settlement process in 1964, many more jholas have been created that have also not been settled with the cultivators either through the settlement process set out in the OGLSA or the encroachment settlement process provided in the OPLE. The state government did initiate processes to do so, but they were inconclusive.

In 1972, the state government issued orders to constitute official committees to conduct comprehensive surveys of all forest lands to identify areas which would be managed as forest and which would be set apart for agricultural use, releasing land cultivated in forest areas by Scheduled Tribes, Scheduled Castes and other landless persons for settlement with those cultivators. This process was delayed and a state government resolution, dated 8 July 1975, extended the deadline for surveys to December 1975. The identification surveys had not been completed by the time the FCA was adopted in 1980, bringing the regularisation process to a standstill.

Subsequently, as with shifting cultivation land, many of these jhola areas were included in the reserved forests declared in 1982 because the cultivators had no formally recognised rights over the land, which meant that they were not taken into account during the rights settlement procedures provided in the reservation process.

After the 1996 order of the Supreme Court in the Godavarman case, a meeting of the Tribal Advisory Committee under the chairmanship of the Orissa chief minister took the decision to expedite the process of land settlement according to the guidelines in the 1990 MoEF circulars. In 2000, the state government submitted a proposal to the MoEF to regularise 4,429 hectares of forest area in the state (GOI, 2004). In 2002, the state government identified 47,304 hectares of encroachments on forest land and has been taking action to evict the cultivators (GOI, 2004). A timeline of various orders and actions by the state government for settlement of cultivated areas in forest land is given in table 8.

Table 8: Government orders for the settlement of forest lands

Date	Document/number	Action called for
9 March 1959	Forest Enquiry Committee Report, Government of Orissa, 1959	The Forest Enquiry Committee constituted in 1957 submitted its report to the government, recommending the settlement of forest lands under the occupation of tribals, Harijans and landless families (GOO, 1959).
10 June 1972	Not available	The state government in a policy resolution pronounced that forest areas encroached upon by tribal communities, Harijans and other landless persons would be released for settlement. In this connection, the government issued executive orders to all district collectors to constitute sub-divisional committees for the purpose of undertaking a comprehensive survey of all forest lands to identify areas that would be set apart for agricultural use and areas that were to be managed as forests. This surveying could not be completed in time.
8 July 1975	Not available	Through another resolution, the government extended the deadline for surveying to 31 December 1975. The work was not completed by 25 October 1980, when the Forest Conservation Act was passed.
6 November 1992	Letter No. 53861	A letter along with guidelines developed by the MoEF was sent to all district collectors, asking for regularisation of all lands encroached before 24 October 1980.
19 August 1993	Memo No. 10/F(Cons)-121/93-19509	Reminders along with guidelines developed by the MoEF were sent to all district collectors, asking for regularisation of all lands encroached before 24 October 1980.
January 1997		In a meeting of state revenue ministers at Delhi, it was decided to immediately implement the MoEF guidelines on regularisation of encroached land. A meeting of the Tribal Advisory Board under the chairmanship of the chief minister was held where decision

		was taken to expedite the process of land settlement as per MoEF guidelines.
27 September 1997	Letter No. 46901	District collectors and forest officials were directed to take necessary steps for the conversion of forest villages into revenue villages and the settlement of old villages, and to regularise encroached lands as per MoEF guidelines.
24 July 1998	Wireless message No. 37014	All district collectors were told to complete the survey and settlement as early as possible.
1 April 2000		In a celebration to mark Utkal Diwas (commemoration), the formation day of the State of Orissa, Chief Minister Naveen Pattanaik declared in his speech that survey and settlement would be completed by October 2000.
4 May 2000	Letter no. GE (GL)-S-17/2000/ 21060	Reminders sent to all district collectors to complete the work and submit proposals for regularising encroached forest land to the Principal Chief Conservator of Forest by 30 July 2000.
24 October 2000 and 6 January 2001	File No. 8/109/2000	The Government of Orissa submitted a proposal to the MoEF requesting permission to regularise 4429.3755 hectares of encroached land.
Source: Desk review, 2003.		

Figures for encroached forest land that the state government reported to the MoEF are significantly lower than figures cited in official documents (see table 9). Field surveys carried out by NGOs corroborate this discrepancy.[53] Because statutory procedures for settlement must be initiated by government action against encroachment, these discrepancies in official reporting signal an additional obstacle for landless individuals seeking settlement of land in their names.

Table 9: Discrepancies in Orissa government data

Data submitted to the MoEF/Supreme Court[54]	Data from other government sources
Pre-1980 and post-1980 encroached area in Orissa: 42,605 hectares	According to the 1999–2009 working plan for Nowrangpur Division, 35,000 hectares of forest land are under settled cultivation in Nowrangpur division alone (GOO, 1999). This is opposed to the figure of 18,129 hectares reported by the Orissa government in the data submitted to the MOEF. The 1997–98 status report for forests and forestry in Koraput estimates that in 1998, some 46,126 hectares of forest land was under encroachment in Nowrangpur division alone (GOO, 1998)
Total encroached area (pre-1980 and post-1980) in Jeypore division: 1,633 hectares.[55]	Another 879 families live on forest land in Kotpad and Boipariguda blocks within Jeypore Division (GOI, 1991).
Pre-1980 encroachment for Orissa, submitted for regularisation to the MoEF: 4,729 hectares (5,113 families).[56]	In Nowrangpur division, the working plan enumerates 23,039.45 hectares as pre-1980 encroachment.
Source: Desk review, 2003.	

[53] For example, a survey carried out by the Campaign for Survival and Dignity (CSD) in Nuapada district shows that 3,202 families in 108 villages have been cultivating 9,773 acres of land categorised as forest since the 1950s. In the same district, another survey in 22 other villages found that 917 families have been cultivating forest land since the 1950s. However, the official figures show that as of 2002 the Khariar division (covering Nuapada district) had filed a total of 347 encroachment cases involving 780 acres of forest land. Of these, only 27 were included in the regularisation proposal submitted to the MoEF.

[54] This information was submitted by the Orissa government in an affidavit to the Supreme Court in the Godavarman Case.

[55] Jeypore division is home to more than 1,000 villages. A survey of just 99 villages in part of Jeypore division, conducted by CSD, revealed that over 1,400 hectares of land was under cultivation before 1980 (Pradhan, 2003).

[56] The CSD collected more than 20,000 claims for settled cultivation on forest land from before 1980, after surveying a small part of the forested areas of Orissa.

Revenue land

Nearly 70 per cent of the land in Mangara village is classified as various categories of revenue land. Much of this area is cultivated by farmers who have no legal rights to these lands.

In the Khariguda hamlet, for example, villagers were not aware that land being cultivated is currently classified as gochar, which may only be used for grazing animals. Not only are they unaware of the land that is classified as gochar, the informal village committee in Khariguda hamlet, which has no legal authority to do so, allocates this land to landless families for cultivation. This lack of awareness in Khariguda is but one example of the disconnect between the ground reality of customary law and practice, and the statutory system.

The original intent of the OPLE was to enable the government to control encroachment by large farmers on government land and to provide land to the landless. The practice that has evolved operates differently. Under the OPLE, a tehsildar may evict an encroacher and levy a fine or, if the encroacher is landless, file a case against the encroacher. The case notice and the fine receipt become evidence of having cultivated a piece of land, and in case the encroacher is eligible (is landless), and the land is eligible for settlement, settlement may proceed. From the perspective of the state and the revenue department, this is actually an elegant legal solution for dealing with encroachments on government land—file cases against all encroachers and then filter out those not eligible for settlement. The problem with the OPLE is that it provides the power to legalise the occupancy of government land to revenue department officials with no checks and counter-balances. Combined with the villagers' illiteracy and their limited access to statutory processes, these procedures have become a major source of rent seeking and tend to exclude the very poor.

In Mangara, only a few individuals cultivating government land have had cases filed against them. This has meant that even though almost all the revenue land in the village is under cultivation, action to settle these lands has not been taken. As a result, cultivators lack secure tenure.

The filing of a case is not a major issue if the person occupying the land is eligible to have it settled in their name. Informal discussions with lower-level revenue department officials revealed that verbal instructions have been issued from higher tiers not to file encroachment cases against those tilling government revenue land. Possibilities of rent seeking also make lower-level officials reluctant to file cases against encroachers. As long as formal action is not taken, the lower-level officials can continue extracting illegal rent from them annually to allow them to cultivate the land. Once a case is lodged, the matter becomes a matter of official record and officials are required to follow a given procedure which leaves a paper trail (Mearns and Sinha, 1998).

Reserved forest

The statutory process of declaring reserved forests includes provisions for settling rights to land in the area being reserved. Customary rights have rarely, if ever, been recorded under other laws. As a result, when reserved forests are declared, existing customary rights and uses are ignored.

After the declaration of the Bisipani Reserved forest in 1982, villagers claim the forest department lodged cases in the same year against two villagers for cultivation in forest land and used the fear of further legal action to prevent villagers from carrying out cultivation in jhola land that had been included in the reserved forest. Initially, at least, this tactic worked in the case of Champa Jhola and Niputi Jhola, although cultivation appears to have continued in Road Jhola. However, some cultivation has started again in the reserved forest, with families who had originally created jholas returning to cultivate them since being forced out in 1997–98. In all, some 36 households, mostly belonging to tribal communities, were cultivating 94 plots of land in Champa Jhola and Road Jhola in 2003. The villagers allege that individual farmers are forced to pay bribes to forest officials every year to be allowed to cultivate these lands.

Although a relatively large number of households are cultivating jhola land in the reserved forest, since 1982 no encroachment cases have been brought against any villager. There are a number of reasons why forest officials might want to prevent regularisation of encroachment and therefore fail to file cases against encroachers: initiating legal proceedings would provide evidence that an individual

had been cultivating forest land, and that evidence could subsequently be submitted by the individual as proof when applying for regularisation of encroachment; filing the cases would mean extra paper work and would entail appearing in court; filing cases in which the forest department does not have proper documentation could jeopardise the legal status of the original reservation; concerns over losing control over land under the management of their department; and lower officials losing a chance to extract rent, among others.

Regularisation of encroachment can only be carried out in the case of permanent cultivation and not for shifting cultivation patches. The most significant obstacle to regularising encroachment for permanent cultivation on forest land is the FCA. In the event that permission can be obtained from the central government under the FCA, state law does permit the settling of such encroachments in the name of the cultivator, subject to restrictions. Even if settlement is ultimately allowed, the maximum amount of land that can be settled is limited to one standard acre, which is insufficient to support a family. In any case, the state government has rarely exercised this option. Since 1980, a total of 29 hectares of forest land has been regularised for agriculture in the whole of Orissa (GOI, 2004).

The contest for land continues between government departments that are supposed to administer it for the public good, and tribal communities and individuals who need the land for their livelihoods and for their spiritual lives. Tribal communities have the advantage of local presence and proximity to the resources, while government agencies have the force of law and state power behind them. The net result is that the land and forests become degraded, investments made by the state to improve these lands goes to waste and tribal communities become more disempowered and impoverished.

INSECURITY AND CONFLICT

For subsistence farmers, who make up 90 per cent of the population in the study area, the most basic source of insecurity is loss of land, or loss of access to land, for cultivation. The interaction of the customary and statutory law regimes that has resulted in the non-recognition of customary rights during the processes of survey and settlement of land and of reservation of forests is the fundamental cause of insecurity. Other specific factors that contribute to loss of land and to the reduction in the amount of land available for cultivation, and thus to insecurity, are informal mortgaging and the execution of development projects. Landlessness and loss of agricultural land through mortgaging has forced many subsistence-level farmers to shift to other resource-dependent alternatives to agriculture, including charcoal making and the sale of fuel wood, which contribute to depletion of the natural resource base. Population growth compounds these factors. The net result is pressure on the land remaining for cultivation, degradation of its quality, heightened insecurity and potential for conflict.

INSECURITY

The Supreme Court's interpretation of the FCA and the MoEF 2002 order for encroachment evictions have major implications for the security of the study site and for all of the Scheduled Areas of Orissa. A senior forest official in Orissa confirmed that the broad definition of forests stipulated in the Godavarman case opens the door for treating all lands that have forest growth as forests for the purposes of the FCA, meaning that no other land use can be taken up on them without the prior approval of the central government. In Orissa's Scheduled Areas, almost all the land used for shifting cultivation, whether on forest land or revenue land, has forest growth because shifting cultivation is forest fallows by definition.

In Mangara, this would mean that the areas already recorded as forest land as well as much of the village revenue land that is currently used for shifting cultivation could be interpreted as forest land. Currently, since this land is not considered forest and is under the control of revenue department, shifting cultivation on such lands is tolerated even though it is illegal. In the event that these lands are treated as forest land under the FCA, shifting cultivators risk eviction just as they were evicted from reserved forests. It remains to be seen whether action will be taken on this issue before the MoEF's two-year process to re-define 'forest' is concluded. In the absence of any indication from the central government or the Supreme Court as to whether and how this interpretation may be applied, the issue of evicting shifting cultivators from land that may be considered forest land is arising in individual cases in the study area, creating confusion and uncertainty.

Inadequate and inequitable implementation of laws is another source of insecurity. Restrictions on shifting cultivation and on cultivating gochar land, for example, are so unevenly enforced that local people have little basis for discerning or remembering what is legal under statutory law, and where. The shifting cultivation patch in the Malikurchi Reserved Forest escapes enforcement of forest protection law just because it is comparatively inaccessible. Rent-seeking by local officials exacerbates the inequities inherent in inconsistent enforcement. Those who can, pay bribes to avoid sanctions and continue cultivation; those who cannot pay the bribes suffer the sanctions. Local people resent paying the bribes even more so because rent-seeking efforts vary from person to person. There is a constant tug of war between petty officials trying to extract as much as possible and cultivators trying to minimise their losses. In order to secure the cash to pay bribes, villagers often have to take small loans at exorbitant interest rates.

Inadequate implementation is partly due to the fact that people in the Scheduled Areas are at a disadvantage in their interactions with formal government administrative structures as well as with the market, and are therefore unable to assert their rights. Many are unaware of laws that benefit them, including those that prevent land alienation from tribals and regulate moneylending, which makes them vulnerable to petty officialdom, local moneylenders and businessmen. Even where statutory processes provide for public participation and consultation, the extent to which members of the Scheduled Tribes and Scheduled Castes can participate is limited by their lack of awareness. Many are unable to negotiate government systems effectively either because they are illiterate or because they are unfamiliar with the manner in which these formal structures operate. Even though a

household may be legally eligible for settlement of government land in its favour, the family's inability to negotiate with the petty officials or to comprehend complex procedures effectively denies these rights to them.

Informal mortgaging

Loss of land rights through indebtedness creates food insecurity for households and plays a major role in livelihood insecurity. Even where tribals own land, poverty forces them into debt bondage that effectively deprives them of their land rights, further aggravating their insecurity and depriving them of their already meagre land holdings. While illegal sales to non-tribals are a factor in the loss of land, moneylending has been the major cause of patta land loss by tribals in the study area (see box 3). Informal credit has been traditionally a major factor in tribal land loss, which is why protective legislation regulating land transfers from tribals to non-tribals was adopted 50 years ago.

The OSATIP Regulation was introduced to strictly regulate the transfer of immovable property from members of Scheduled Tribes to non-tribals in Scheduled Areas. The Regulation defines land transfers to include mortgage with or without possession, lease, sale, gift, exchange or any other dealing that is not a testamentary disposition and includes a charge or contract relating to the property. It provides that mortgages are permitted only with public financial institutions, and applies only in Schedule V areas. The Orissa Land Reforms Act 1960 extended this protection to non-tribal areas, prohibiting the sale of land by members of Scheduled Tribes to non-tribals without the permission of appropriate authorities.

In spite of this statutory protection, land alienation through sale and effective loss of land through mortgage continues. Uncertain income and lack of institutional credit combine to create a situation in which tribals have little other recourse than to fall back on local informal moneylenders to obtain credit. The problems are exacerbated by the illiteracy of most tribal people and the simplicity of their customary law under which transactions are based on oral commitments, making it easy for non-tribal moneylenders to manipulate them. The informal mortgage system survives because of lack of awareness and illiteracy amongst tribals, their dependence on local moneylenders, the power asymmetry between non-tribals and tribals, their inability to negotiate formal systems of institutional credit, and the fact that most local officials are non-tribals. The tradition of oral agreements and the willingness to honour them in tribal society also means that tribals abide by these informal transactions and that it is very difficult to root out this system of land mortgaging.

The land being lost by tribals is permanently cultivated land which members of Scheduled Tribes can own and which is easier for non-tribals to cultivate, rather than the uplands or shifting cultivation patches. Jholas in particular are mortgaged, because they are productive land and therefore attractive to lenders.

In Mangara village, almost 22 per cent of private land holders, mostly belonging to the Kondha and Paroja communities, have informally mortgaged at least some of their lands to private moneylenders for credit to meet expenses related to social obligations such as marriage ceremonies and funeral rites. Out of these 40 households, only two (5 per cent) have been able to pay off their mortgages. In most of these cases, the mortgaged land has been occupied by the lender, meaning that although the land has not been sold, which is prohibited by law, it is effectively lost to the households that mortgaged their land for loans.

Households that have lost jhola land through mortgaging are more dependent on charcoal and fuel wood selling and on shifting cultivation. In Bhitarmangara, for instance, 42 per cent of Paroja households have mortgaged their patta land and 93 per cent of these families now depend on charcoal selling and fuel wood selling as their primary occupation. There is generally higher dependence among the villagers of Bhitarmangara on shifting cultivation (43 per cent of the households) and the proportion that depends on shifting cultivation is higher still among families who mortgaged their land. This reflects conditions in most tribal areas where private land has been lost through the processes of similar mortgaging as well as outright mortgages.[57]

[57] An earlier study with a sample of 248 tribal households in four districts of Orissa showed that 94 per cent of the households had lost part of their land through various processes and the total land owned by the sample

The sale of land between members of tribal communities is legal and non-tribal purchasers use members of Scheduled Tribes as proxies to buy land from other tribals, as a cover for acquisition that would otherwise be illegal. In 2000, the government amended OSATIP to mandate a review of all land transfers from tribals to non-tribals in the district since 1956, putting the burden of proof on the persons who possess the land. Implementation of this law has just begun but history indicates that there should be a high degree of oversight in this process.

Fifty years after the first statutory laws to protect tribal communities from moneylending were adopted, tribal land loss through mortgaging and sale to non-tribals continues. Loss of agricultural land through mortgaging and proxy sales to non-tribals has meant that the tribals have been pushed to more fragile lands for cultivation, and this has increased their dependence on shifting cultivation at a time when available land is becoming scarce.

Existing laws against lending money to tribals fail for several reasons but principally because the laws are easily subverted due to the illiteracy of the tribal poor and their unfamiliarity with statutory legal procedures. The laws fail also because the market offers few, if any, alternative sources of credit to the tribals. This lack of options forces households to turn to making charcoal and selling fuel wood to earn money, further depleting forest resources.

Box 3: Informal mortgaging

The informal mortgage procedure involves a meeting between the prospective borrower and lender, which is attended by other villagers who serve as witnesses. The amount of *chidni* (fixed yearly instalment paid to a moneylender) is decided in the presence of the witnesses. The *chidni* is often so low that repayment is spread over a period of 20 or 30 years. During that time, the land is cultivated by the lender, who keeps the crops. The *chidni* is low because the land itself is the security for the loan and the produce of the land is the interest. Sometimes the owner of the land may work for the lender for wages.

Development projects

The widespread loss of agricultural land through mortgage and illegal sale is compounded by the loss of land that is acquired by the government for the development of railways and roads, as well as the land reserved as forests.

In Scheduled Areas, the importance of displacement for development projects is illustrated by the fact that while India's tribal peoples make up roughly 7.5 per cent of the population, over 40 per cent of those displaced for development projects between 1950 and 1990 belonged to tribal communities. Since 1990, this figure has risen to 50 per cent (Kothari, 1995). One of the important consequences of non-recognition of land rights on government land is that displaced people or communities who cultivate these lands are not eligible for compensation when these lands are given over to development projects.

In Orissa, approximately 81,176 households have been displaced by development projects, including irrigation, hydroelectricity, mining and industrial initiatives in the period 1950–93 (Pandey, 1998). Moreover, this is likely to be a low estimate since displacement data is not available for a number of projects. In many cases, the number of households officially shown to have been displaced may be much lower than the number of persons actually displaced. For example, official statistics for the Hirakud dam show that 110,000 persons were displaced (GOO, 1968) while other sources put the figure at more than 180,000 (Patnaik et al., 1987). A study with a sample of 248 tribal households in four districts of Orissa showed that almost 10 per cent lost their patta land through acquisition for development projects (Viegas, 1991).

households reduced by 56 per cent (Viegas, 1991). In this sample 36.9 per cent of the respondents had lost their land through indebtedness (land-mortgaging) whereas 31 per cent had sold their land.

In Koraput district, development projects have led to the displacement of approximately 5,435 families. To date, approximately 28,558 hectares of land in the district has been used for projects including the Kolab dam, the Hindustan Aeronautics Limited factory, the National Aluminium Company bauxite mining and alumina refinery, and construction of the railway through Dayanidhiguda for the Visakhapatnam–Kirandul line. Most of the land dedicated to these projects was being used by tribal communities for either permanent or shifting cultivation. Because no form of private or communal tenure had been officially recognised on most of this land, the government could easily use the land for development projects without having to pay compensation of any sort.

Since 2004, the Telingiri Medium Irrigation Project has placed additional pressure on land resources in the study area. The project will submerge approximately 35 hectares of private land and 22 hectares of government land. In all, 59 households owning private land and 32 landless families cultivating the government land in Talamangara hamlet will be directly affected. While landowners are expected to receive some compensation for the land they lose, those cultivating government land are not eligible for compensation or land grants. The irrigation project has introduced uncertainty and insecurity amongst the residents of Talamangara, since even those with legal title to their land are not certain about how much compensation they will receive, or whether they will be resettled elsewhere. The households being evicted will be forced to move to even more marginal lands on the hill slopes to eke out a living or to take to charcoal making and fuel wood selling to survive. Experience with similar projects indicates that either of these livelihood options will lead to further degradation of the land and forests, and increase livelihood insecurity.[58]

Inadequate resettlement of individuals and communities displaced by development projects has significant environmental and social impacts particularly for tribal peoples whose cultural and religious beliefs are linked to their land and who are disproportionately affected by these projects. As people lose access to resources which form the basis of their livelihoods, they are trapped in a vicious circle of exploiting available resources, which in turn undermines their livelihood base even further.

The absence of secure tenure in cultivated government land also leads to the inability to invest in land improvement. Cultivators are reluctant to invest, in terms of both capital and labour, because of the possibility that the land will be taken away once they have developed it. Lack of secure tenure means that even those willing to invest in the land are unable to get legal, institutional credit.

The loss of shifting cultivation areas in reserved forest has meant that shifting cultivation has increased on revenue land, with a reduced fallow cycle because the land must be more intensively farmed, resulting in soil erosion and reduction of soil fertility.

Restricted access to land has forced many local inhabitants to shift to the ecologically destructive practices of charcoal and firewood selling to sustain their livelihoods. When alternative sources of income become scarce, villagers resort to breaking statutory law by using forest resources for short-term subsistence. Villagers caught attempting to sell forest products such as charcoal and fuel wood are arrested and fined by the forest department or bribes are extracted in lieu of legal sanctions. Fines and arrests have limited effect, however, on people who have few, and unfavourable, alternate sources of livelihood.

These relationships are becoming increasingly embittered over time, as the pressure on land mounts both from internal population growth and the need for land for public-sector development projects and for private industrial and plantation investments. An aggravating factor is the fact that the state government can, without consultation or compensation, take government land away from cultivators whose livelihoods depend on it, to dedicate it to development and industrial projects.

[58] A study on Indrawati Dam Project, for which approximately 5,534 families were displaced in neighbouring Nabarangpur District, showed that landlessness among the displaced increased from around 49 per cent before displacement to over 85 per cent after displacement. The study showed that while 76 per cent of the families studied were cultivating an average of .6 hectares of government land/household pre-displacement (reflecting the general situation in the area), after displacement only 23 per cent were still cultivating government land and their average cultivated area was less than .01 hectares (Ota, 2001).

CONFLICT

The fundamental cause of insecurity—loss of rights to land and rights to access land—is also the primary trigger of conflict. In the study area, these conflicts range from verbal exchanges to physical violence and damage to property.

Plantations established by various state government authorities to 'rehabilitate' shifting cultivation patches have been a source of conflict for 50 years. From the 1950s until the 1980s, the state soil conservation department established large-scale plantations of cashew trees on land formerly used for shifting cultivation. Most of these plantations were subsequently leased to the Orissa Cashew Development Corporation, which harvested and sold cashew on a commercial basis. None of the benefits from the commercial operations were shared with either the evicted shifting cultivators or local communities, leading to resentment and conflict. Older villagers reported that in the 1960s they were specifically promised that the plantations would be handed over to them. That did not happen and the villagers destroyed the plantations.

In 1998, the Orissa Cashew Development Corporation tendered long-term leases of all cashew plantations under its control in minimum lots of 5,000 hectares each. Many private corporations were interested in taking up these plantations. Thus, land traditionally used for shifting cultivation would have ended up in the hands of corporations. NGOs and activist groups took up the issue, and after much protest the proposal was shelved. Subsequently, villagers in five separate communities south of Koraput town occupied the plantations within their village boundaries, and are harvesting and selling cashew on a community basis. The villagers believe the government had forcefully occupied their land and that they are taking it back. Legally, however, the villagers are the occupiers.

In Koraput, the main plantation crop has been cashew, although sisal, coffee and other plantation crops have also been promoted. Before 1980, most of these plantations were developed under various soil conservation programs which made no provisions for any usufruct rights for local people. Cashew and coffee plantations in former shifting cultivation areas have been burned repeatedly by tribal people. Plantations developed by the forest department have also failed to survive as they are seen as taking away traditional access to land by local communities. In the reserved forest around Dayanidhiguda, Uparmangara and Bhitarmangara, the forest department in 1998 planted teak in areas previously used for shifting cultivation, leading to conflict, including physical violence.

Villagers have also come to blows with forest department officials over land use and the collection of forest products. Following notification of the Bisipani Reserved Forest in 1982, the forest department is alleged to have forced villagers to vacate jhola land inside the reserved forest boundary, leading to the loss of livelihoods for those cultivating such land and adding to the resentment against forest department officials. Between 1982 and 1997–98, the forest department continued to make sporadic attempts to move cultivators out of reserved forests. These efforts were largely unsuccessful, since villagers would return to their cultivation patches a few years after eviction. This cycle of eviction followed by reoccupation led to regular conflict between villagers and forest department officials. At the same time, it opened up an avenue for corruption, with villagers reported to have paid bribes to be able to continue cultivation.

In 1997–98 the forest department stepped up efforts to put an end to shifting cultivation inside reserved forests, strictly enforcing the ban. This time, villagers were unable to return to their cultivation patches. Tempers flared and tension continued to mount until in 2002 a plantation on Lohaguli Dongar, established by the forest department under joint forest management (JFM), caught fire. The forest department accused villagers of setting the plantation ablaze. The following year, these tensions boiled over into physical confrontation. In 2003, a scuffle occurred in Road Jhola when forest department officials tried to prevent cultivation. Today, tensions in the area continue to run high.

During the second field visit of the study team, villagers were extremely reluctant to talk about the issue of conflict. Apparently, local forest officials had come to know about the study and had asked the villagers not to raise controversial issues.

The Telingiri Medium Irrigation Project that will submerge Talamangara hamlet is also a source of chronic conflict with local officials, with agitation over the issue of displacement. Experience with the Indrawati dam project, for which approximately 5,534 families were displaced in neighbouring

Nabarangpur district, indicates that conflict continues to be an issue after displacement. Access to common property resources such as forests, grazing land and burial grounds causes conflicts and feuds between the displaced people and the original inhabitants of the area (Ota, 2001). Kondha tribals displaced by the Indrawati dam migrated to forested areas of Nabarangpur and cleared forest land for agriculture. This in turn caused conflicts with local tribals, who resented the intrusion of outsiders. Conflicts resulted from Kondha intrusions into forests being protected by the local inhabitants.

RESPONSES TO CONFLICT

Government

The concept of JFM was promoted in the National Forest Policy 1988. JFM guidelines issued by the MoEF in 1990 along with implementing resolutions at the state level are the basis for this programme; JFM is not enabled by statute.

The philosophy behind JFM is to enable communities living in and near forests to participate in forest management and share in the benefits, through partnerships with state forest departments. Under these partnerships, communities and the forest department share equally the cost of managing forest resources. As of 2000, JFM has been introduced in 22 states.

A study on JFM carried out for the MoEF with a view to revising the JFM Guidelines noted that there is “a morass” of policies, laws and non-legally binding documents, many of which are conflicting, ambiguous, or can be superseded on the basis of legal technicalities, governing the implementation of JFM in many states. The study pointed out the issue of traditional rights and the conflicts arising out of restrictions on these with the implementation of JFM, and recommended that existing policy and statutory law on a range of governance and forestry issues be reviewed in light of JFM (TERI, undated).

Orissa adopted its JFM resolution in 1993. It specifies that village communities should protect the forests, lays down the structure of the community institution for JFM and provides for preparation of a micro-plan for forest management.

The Ministry of Tribal Affairs in 2005 introduced the Scheduled Tribes (Recognition of Forest Rights) Bill in the Lok Sabha, the lower house of parliament. This proposed law would ensure recognition of tribal rights on all forest land, including land controlled by forest departments. While tribal communities and their advocates support the bill, which recognises communal property rights and guarantees that shifting cultivators will not be treated as encroachers on their ancestral lands, there has been resistance to it because of the potential impact on forests and wildlife.

Civil society

A number of national initiatives over the past 10 to 15 years have focused on helping tribal communities become more aware of their constitutional and statutory rights. A campaign for asserting rights over ‘*jal-jangal-jameen*’ (water-forest-land) was aimed at making tribals aware of their rights under the Constitution, particularly Schedules V and VI. Leading up to the adoption of PESA in 1996, there was a major campaign to inform members of Scheduled Tribes and Scheduled Castes of the extension of Panchayati Raj to Scheduled Areas. The Campaign for Survival and Dignity is a nationwide coalition of grassroots movements fighting for tribal and forest dweller’s rights to land. Its campaign and mobilisation provided the impetus for the preparation of the Scheduled Tribes (Recognition of Forest Rights) Bill to recognise the rights of tribals and forest dwellers in forest land.

Local communities

The roots of insecurity and conflict were put down 50 years ago if not earlier still. Faced with threats to their livelihoods, many communities are attempting to reverse the degradation of their land and forests. Community forest protection emerged in Orissa before JFM was introduced. Over the last two decades, tribal communities in Orissa have begun to respond to these chronic issues by reclaiming forests through their own forest protection initiatives, independent of government action. Most of these efforts are self-initiated in response to forest degradation, as community control of village common resources is a traditional practice. For the villagers, forest protection is also an assertion of traditional rights and control over land used for shifting cultivation areas and thus also an assertion of tribal identity.

Initiatives to protect forest patches have emerged all over Koraput District (see table 10). These initiatives may be at hamlet or at revenue village level and include joint forest protection and management efforts being carried out by more than one village. According to a survey conducted by Pragati, which works with communities involved in forest protection, 586 communities in Koraput district are involved in protecting forests on government land (Pragati, 2003). Khariguda hamlet in Mangara village is an example of one such initiative. Forest protection efforts similar to those in Koraput district are common all over Orissa (Human and Pattanaik, 2000; Kant et al., 1991; Singh, 1995).

Table 10: Village-level forest protection, Koraput district (2003)

Block	Revenue villages	Number involved in protection
Bandhugaon	147	106
Boipariguda	265	126
Borigumma	149	25
Dasamantapur	167	38
Jeypore[60]	113	—
Koraput	92	22
Kotpad	99	—
Kundra	85	23
Lamtaput	167	22
Laxmipur	101	21
Nandapur	218	106
Narayanpatna	126	15
Pottangi	101	19
Similiguda	85	63
Total	1,915	586

Source: Pragati, 2003.

The villagers do not differentiate between protection and management. When they say they are protecting forests, they include both protection and management. In the Koraput area, management is not very sophisticated but in other parts of Orissa, villagers managing such areas intensively have adopted local rules for harvesting trees.

These forest protection initiatives are mostly carried out by tribal communities that practise shifting cultivation. Individual community circumstances vary but the approach in most cases is similar. The community sets aside some of the forest area for regeneration, prohibiting the felling of trees and restricting shifting cultivation inside these areas, while it designates other patches for shifting cultivation, and exercises social control and monitoring to ensure compliance. In many villages, areas on the more vulnerable higher slopes are kept aside for maintaining forests while lower slopes are used for shifting cultivation.

Communities protecting forests ensure livelihood security by generally allowing the collection of minor forest produce including food items by all, including people from other villages. Collection of fallen and dried fuel wood is also allowed. In Malkarabandh, a village in Koraput district, the community donated privately owned land to landless shifting cultivators to use for growing vegetables so that the patch they were using for shifting cultivation could be regenerated as forests for the whole village (Kumar et al., 2004).

The major restrictions in community protected areas are on clearing land, felling green trees, making charcoal, setting fires and carrying out activities that degrade the forest. Hunting in protected patches may also be banned. These bans are imposed by ingenious methods, for example not allowing any sharp edged tools in the forest to ensure that no one can cut down trees.

[59] Institutions for forest protection and management may exist at hamlet level or at revenue village level or joint forest protection and management may be being carried out by more than one village. The number of revenue villages is provided for comparing the scale of forest protection.

[60] Statistics for forest protection and management groups in Jaypur and Kotpad were not available.

Because these community initiatives are being carried out on government land, technically they are not permitted under statutory law. Yet these efforts are excellent examples of the rationalisation of land use, wherein part of the landscape is used to maintain forests and other parts for cultivation. The difference is that management decisions are being made by communities rather than by bureaucrats.

In response to the problem of lack of access to formal credit and the abuses of informal mortgaging, self-help groups are becoming active in many Scheduled Areas, becoming an alternative source of credit.

SYNTHESIS AND RECOMMENDATIONS

The fundamental issues of resource rights and livelihood security in Mangara, Orissa and Scheduled Areas around the country—insecure land tenure, lack of accessible credit for the poor, non-existent or limited opportunities for the poor and particularly for Scheduled Tribes and Scheduled Castes to participate decisions that impact their livelihoods—have been acknowledged for decades. Attempts since Independence to deal with these chronic problems through the statutory legal system have been largely unsuccessful because they have been to a great extent based on the flawed process of survey and settlement initiated pre-Independence which ignored pre-existing customary tenure, thus ensuring that customary rights were not taken into account in subsequent settlement exercises. Even where statutory law has attempted to remedy problems, its effectiveness has been limited and subverted by a pervasive pattern of inequitable and exploitative implementation. The results are parallel customary and statutory systems of land use and a legacy of mistrust and fear that makes resolving the inequities even more challenging. Solutions will lie in understanding the interactions between resource rights regimes, livelihoods, environmental sustainability and conflict, and in establishing transparent processes involving all stakeholders to use that information to resolve the problems.

Having been removed from much of the land they traditionally cultivated and without security of tenure on the rest of their communal lands, tribal communities have not been able to make the transition to agricultural intensification that might have occurred in a more secure situation. As the Mangara case shows, loss of agricultural lands has led to the intensification of the shifting cultivation cycle and at the same time forced them towards ecologically unsustainable alternative livelihood practices such as making and selling charcoal and selling fuel wood.

Officially, environmental degradation in Mangara is interpreted as a consequence of population growth, the poor agricultural practices of tribal communities and the lack of enforcement of environmental laws. What is missing from this analysis is the cumulative impact of the history of non-recognition of customary tenure dating back at least to the early 20th century, and the subsequent interaction with statutory law and its implementation since the 1950s, that has combined to produce natural resource degradation, livelihood insecurity and conflict.

The controversy over shifting cultivation is an example of how debate has been shifted away from the question of resource rights. The issue is not shifting cultivation per se, but the fact that statutory laws and processes have been interpreted to deny tribal farming communities their customary rights over these lands. In fact, the existing literature on shifting cultivation and communal land tenure throws doubt on the orthodox view of the environmental ill effects of shifting cultivation.

Government attempts at ecological rehabilitation have foundered on the issues of resource rights and tenure. Conservation efforts by the state that were conceived without taking local people into account have not only threatened livelihoods but have at the same time increased pressure on resources elsewhere. The process of forest reservation, for example, failed to take into account customary land use at the time of reservation. This loss of agricultural land created severe hardship for local communities who were then forced to turn to unsustainable livelihood alternatives such as charcoal making in areas where they continued to enjoy access.

Current community forest protection initiatives demonstrate that it is possible to balance livelihood needs with those of conservation. The Khariguda example and other, similar cases in Koraput district illustrate the capacity of local communities to sustainably manage resources at the landscape level and to develop adaptive responses to resource degradation. The anomaly in these cases of successful natural resource management is that the actual land uses do not coincide with those of the formal system. The two land use systems exist in parallel at the discretion of state authorities in the case of land and at the discretion of central government authorities in the case of forests.

Investment and development schemes have also failed because they did not take into account the resource rights roots of the problems of poverty and environmental degradation. Soil and watershed conservation projects, forest plantation projects, and state revenue generation schemes, particularly those implemented as alternatives to shifting cultivation, have not survived for several reasons but primarily because they were implemented without taking into account parallel land use systems. Many

of these projects miscarried as a direct or indirect consequence of not taking the chronic issues of rights over land and forests into account and addressing them in project design and implementation. Because Orissa has not fully implemented PESA, acquisition of land for such projects continues without oversight from the Gram Panchayat.

Mangara is a reflection of the situation in most Scheduled Areas of Orissa and, to some extent, of tribal areas all over central India. Issues of rights in land and forests, loss of land because of the lack of credit and abuses of informal mortgaging, and displacement due to development projects are common themes across the tribal belt in central India. If these issues of tenure and rights are handled in a sympathetic and creative manner, their resolution can have multiple positive effects, including rehabilitation of degraded natural resources as well as improvement in livelihood security and mitigation or elimination of the sources of conflict.

The debate surrounding the Scheduled Tribes (Recognition of Forest Rights) Bill provides an opportunity for national, state and local-level consideration of the relationship between resource rights, livelihood security and conflict mitigation. These issues require extensive and open examination at the public policy and grassroots levels, as well as political mobilisation to ensure that the conclusions are put into practice. To be effective, these discussions must be inclusive and transparent processes that take into full account the historical context as well as current ground reality.

Two related processes require thorough and comprehensive review, leading to proposals for amending existing statutory law: settlement of rights in government/revenue land; and forest reservation and the settlement of rights that is supposed to accompany it.

This study indicates that, at a minimum, statutory law needs to be amended to provide for recognition of community tenure and customary rights, to allow flexibility in the kinds of management practices prescribed, and to specifically require the government to work with communities to develop locally-appropriate land and resource management regimes. In particular, amendments should acknowledge some form of community rights interest in land that is used for shifting cultivation, which is currently excluded from the statutory regime.

The possibility of communal tenure for Schedule V areas similar to that afforded to Schedule VI areas could be explored. Recognition of communal land tenure would mean that the community as a whole could be compensated for the loss of common lands.

In the Scheduled Areas of Orissa, as reserved forests have been declared without proper enquiry into existing land uses and customary rights in the area, a moratorium on reserved forest creation in Scheduled Areas should be considered until a review of the legal validity of declarations of reserved forests can be completed and solutions proposed where irregularities are discovered. The possibility of establishing an enquiry commission for this purpose under the National Forest Commission should be considered.

Land which was being cultivated prior to 1980 should be immediately settled with Scheduled Tribe and Scheduled Caste cultivators. Procedures like the ones being currently used in Maharashtra to settle forest land—which rely not only on official evidence of encroachment cases, which are generally not filed, but also allow for evidence from the Gram Sabha—could be used with appropriate adaptations for Orissa.

Reform of land settlement processes needs to be carried out in tandem with the empowerment of local government in Scheduled Areas, in accordance with PESA. The land settlement process can be streamlined by giving the Palli Sabha and the Gram Sabha management authority over revenue wastelands within a village, the power to allocate these lands to farmers within the village and to develop procedures to facilitate this process, and the authority to control alienation of land. Community forest protection groups and initiatives should be recognised and legally enabled in the context of PESA and local government. The results of these reviews may entail another survey and settlement process.

The expanded definition of forest in the Supreme Court order has raised the possibility that lands currently administered by the revenue department could be classified as forest land and transferred to

the forest department. If that were to happen, before transferring revenue department-controlled land to the forest department, rights over these lands should first be settled by the revenue department. Any eventual transfer of land to the forest department without first settling pending issues of rights and use would be simply repeat the earlier, flawed settlement process with predictable consequences for insecurity and conflict.

The proposed review process should also carry out a plot-wise survey to ascertain the incidence of illegal land transfers and of informal land mortgages and work out plans for redeeming them. Existing laws against informal moneylending need to be enforced, accompanied by support for a range of micro-financing alternatives, including self-help groups.

These review processes could be funded by channelling part of the development funds being spent by the central and state governments in Scheduled Areas to rationalise the tenure and rights regime. Multilateral development banks as well as the government need to view the security of resource rights as an essential prerequisite to development and poverty alleviation, and include security of resource rights as an objective of all development initiatives.

For example, funding for watershed development should be used for a baseline survey of land tenure and ownership in the watershed area (Kumar et al., 2004). Such a survey should be designed to detect cultivation on revenue department-controlled land and forest land, and ascertain the feasibility of settling rights in the cultivated lands. Soil conservation and watershed development projects that focus on hill slopes being used by shifting cultivators should bring them on board, take their interests into account, and work with them to develop creative strategies for stabilising hill slopes while simultaneously meeting their livelihood requirements.

Part of the development funds flowing to Koraput district should be allocated to streamline the operations of the revenue department, especially to bring up to date records of transfers of land rights within families and improve the department's capacity to handle field work. Development funds could also be used to fund entirely or partly a new survey and settlement process that is based on the review processes proposed.

The problems with the existing resource rights and tenure regimes have been raised time and again, including in protests and movements launched by tribal communities themselves. A detailed analysis of these rights issues, linking them to environment, conflict, security and livelihoods, had not been carried out until this study. The few existing analyses tend to be legalistic and do not get beyond the statutes to the underlying reasons for their ineffectiveness. In Orissa, there is little understanding of the rights issues, little reliable data on ground-level reality, and scant attention to their interaction. This study is but the first of many that need to be carried out, particularly with respect to government land. As the proposed reviews are undertaken, there needs to be a concurrent effort to make their findings known in the Scheduled Areas and to build consensus to implement their recommendations.

ANNEX: SCHEDULED CASTES AND SCHEDULED TRIBES

The term 'Scheduled Caste' is used to describe historically disadvantaged Indian castes of low rank in specified traditional religious hierarchies. 'Scheduled Tribes', meanwhile, refers to indigenous peoples who are not part of religious hierarchies. Scheduled Caste peoples are also known as Dalits, while Scheduled Tribe peoples are also referred to as Adivasis. The Government of India Act 1935 introduced the term Scheduled Tribes, whereas Scheduled Castes were first listed in the Government of India (Scheduled Castes) Order 1936. Following Independence and the adoption of the Constitution of India, Scheduled Castes and Scheduled Tribes were listed in the Constitution (Scheduled Castes) Order 1950 and the Constitution (Scheduled Tribes) Order 1950, respectively. The Scheduled Castes Order specifies that only persons who profess the Hindu, Sikh or Buddhist faiths may be deemed members of a Scheduled Caste. The 1950 Orders have been amended several times, most recently in 2002 and 2006.

The Constitution provides that the President may, in consultation with the governor of a state, specify the Scheduled Castes (article 341) and Scheduled Tribes (article 342) in that state. Article 341 specifies that Scheduled Castes include "castes, races or tribes or parts of or groups within" them. Article 342 specifies that Scheduled Tribes include "tribes or tribal communities or parts of or groups within" them. Special constitutional provisions for Scheduled Castes and Scheduled Tribes reserve seats for their members in the national parliament and state assemblies (articles 330 and 332, respectively), provide the option of preferential treatment in selection for national and state civil service posts (article 335), and create national commissions (articles 338 and 338A, respectively).

In order to manage tribal unrest and rebellions, the British created Completely Excluded and Partially Excluded Areas to administer tribal-dominated regions. The concept was maintained post-Independence and the Constitution provides that Scheduled Areas may be designated for Scheduled Tribes (articles 244 and 244A, and schedules V and VI). Tribal areas in the states of Assam, Meghalaya, Mizoram and Tripura are administered under the provisions of article 244A and Schedule VI to the Constitution. All other Scheduled Areas are administered under article 244 and Schedule V.

The Scheduled Area in Orissa was originally specified by the Scheduled Areas (Part A States) Order 1950 (Constitution Order 9, dated 23 January 1950) and the Scheduled Areas (Part B States) Order 1950 (Constitution Order 26, dated 7 December 1950). It was re-specified by the Scheduled Areas (States of Bihar, Gujarat, Madhya Pradesh and Orissa) Order 1977 (Constitution Order 109, dated 31 December 1977) after rescinding the Orders cited earlier in so far as they applied to Orissa. The following areas are under Schedule V in Orissa: Koraput, Malkangiri, Mayurbhanj, Nabarangpur, Rayagada and Sundargarh districts in whole; Balliguda, G.Udayagiri and Khondamal tehsils of Khondamal district; Barbil, Champua, Keonjhar and Telkoi tehsils of Keonjhar district; Kuchinda tehsil of Sambalpur district; Lanjigarh, Rampur and Thuamul blocks of Kalahandi district; Nilagiri block of Balasore district; R.Udaygiri tehsil, and Gumma and Rayagada blocks of Parlekhemundi tehsil in Parlekhemundi sub-division; and Suruda tehsil of Ghumsur sub-division in Ganjam district.

In Orissa, Scheduled Areas cover 69,613.8 square kilometres (44.7 per cent of the total land area of the state) with a population of 8,870,884 (1991 census), of which 68 per cent belong to Scheduled Tribes while 20 per cent are members of Scheduled Castes. There is often close interaction between Scheduled Castes and Scheduled Tribes, with many of the mainland tribes adopting caste symbols and rituals. The degree of overlap varies from tribe to tribe. For example, some tribes eat beef, even though their festivals may have incorporated Hindu deities. Although the Scheduled Areas cover about 45 per cent of the state's land area, they contain almost 70 per cent of the forest areas of Orissa.

The executive power of a state extends to the Scheduled Areas located in it and a governor may direct that any national or state law does not apply to a Scheduled Area in that state. A governor also has discretion to issue regulations governing Scheduled Tribes in Scheduled Areas in that state to regulate the allotment of land to tribal members and prohibit the transfer of land by or among them, as well as regulate persons who lend money to them. This provision was added to Schedule V to protect tribal communities from losing their land and is implemented in Orissa by the OSATIP Regulation. Section 3 of the Regulation states that any transfer of property by a member of a Scheduled Tribe shall be absolutely null and void unless it is made to another member of a Scheduled Tribe. Section

3(iii) stipulates that a member of a Scheduled Tribe may not transfer any land if the extent of the land remaining with the person after the transfer is less than two acres of irrigated land or five acres of unirrigated land.

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Livelihoods, Security and Conflict

KOSHI TAPPU, NEPAL

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ABBREVIATIONS

BCE	Before the Christian era
BS	Bikram Sambat
BZMR	Buffer Zone Management Regulations
CFUG	community forest user's group
DDC	district development committee
DFO	district forest officer
DNPWC	Department of National Parks and Wildlife Conservation
GIS	geographic information systems
HMGN	His Majesty's Government of Nepal
ICIMOD	International Centre for Integrated Mountain Development
IUCN	The World Conservation Union
KTWR	Koshi Tappu Wildlife Reserve
LSGA	Local Self-Governance Act
NGO	non-governmental organisation
NPWCA	National Parks and Wildlife Conservation Act
PPP	Parks and People Programme
UNDP	United Nations Development Programme
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
VDC	village development committee

GLOSSARY

bigha	unit of land measurement; roughly equivalent to 0.65 hectares (1 hectare = 1.54 bigha)
guthi	tenure system developed in the Licchavi period; land is held in trust for the upkeep of religious or welfare institutions
kipat	customary system of communal land ownership
terai	plains; Nepal's terai region is an extension of the Gangetic plains of India; defined ecologically as alluvial land lying between 60 metres and 300 metres above sea level

INTRODUCTION

The relationship between resource scarcity and conflict is explored in a 2002 publication, *Conserving the Peace: Resources, Livelihoods and Security*:

> Our thesis is that environmental mismanagement and resource scarcity, alone or in conjunction with other forces, can have such a destabilizing impact on communities and societies that they may experience high levels of insecurity and even succumb to violence and conflict (Matthew et al., 2002).

The report recognises three main reasons for scarcity: increasing demand, declining productivity and restricted access. These factors are in turn impacted by the resource rights regime.

The question of rights, particularly in the case of women and indigenous peoples, is today a key governance issue in Nepal. The rights of communities to access and use natural resources has been the focus of work by the Federation of Community Forestry Users, Nepal, as well as several community forestry projects such as the Nepal Australia Community Resource Management Project, Nepal Swiss Community Forestry Project, and Livelihoods and Forestry Project. Non-governmental organisations (NGOs) such as ActionAid, Women Acting Together for Change, Oxfam Nepal and the International Centre for Integrated Mountain Development have also focused on the issue of rights. The Community Forestry Programme, launched by Nepal's Ministry of Forest and Soil Conservation, and aimed at enhancing the rights of communities to manage local forest resources, has been hailed worldwide as an innovative and successful initiative. Community rights are less secure over other natural resources such as fish, water and minerals, and in the high mountains and other areas outside of the terai (plains) districts where the Community Forestry Programme has primarily been promoted.

This study aims to analyse resource rights, livelihoods and conflict in one of Nepal's protected areas, focusing on the interaction between statutory law and customary practice, and examining their link to livelihoods and conflict. The site selected for this study is the Koshi Tappu Wildlife Reserve (KTWR) and its buffer zone, located in the south-east of Nepal.[1] This area was selected because, apart from research on traditional irrigation management in the western terai, few studies exist on customary natural resource management practices in Nepal's terai region.

Conflict between customary practice and statutory law, and its impact on livelihoods, has not been well documented for Nepal. Rights have been studied with respect to land tenure, while natural resources have been studied from the perspective of management and use, but rights over resources have not been adequately examined.

Accounts of the historical evolution of land tenure in Nepal have focused on land ownership rather than access and control over natural resources in general. The Sherpas in Solu, for example, were shown to recognise three types of tenure—private agricultural land, cooperative ownership over forests and pasture in the immediate vicinity of villages, and collective usufruct rights over high-altitude pasture in the name of the village headman—although statutory law does not recognise cooperative or collective rights on land (March, 1977).

Recent research has also shown that many communities practise customary natural resource management, often in direct contravention of statutory law but without serious conflict with the state. Several studies have been carried out with respect to livestock and pasture management in high-altitude areas of the country (Ale, 2000; Bishop, 1998; Karki and McVeigh, 2000; March, 1977; Rai and Thapa, 1993; Robinson, 1993). Community management of forest resources has been better documented for the mid-hills of Nepal than with respect to other resources or areas (Bartlett and Malla, 1992; Chhetri and Pandey, 1992; Fisher, 1989; Fisher, 1991; Fürer-Haimendorf, 1984; Gautam, 1991; Parajuli and Sharma, 2000; Tamang, Gill and Thapa, 1993). Customary irrigation management has also been studied (Aryal, 2002; Poudel, 2000a and 2000b; Pun 2000; Thapa 1993).

[1] At the time that this study was conducted, the buffer zone had not been officially declared although an area had been mapped and the maps published in 2001. The Koshi Tappu Wildlife Reserve Buffer Zone was formally declared in August 2004, after field work for this report had been completed.

Past studies on conflict related to natural resource management have pointed to the existence of various types of disputes: (i) conflict between protected area authorities and local communities (Bhatta, 1994; Kharel, 1993; Sharma, 1991), (ii) intra-community conflict, and (iii) conflict between communities and government authorities on forests and other natural resources (Bhatia, 1996; Kharel and Regmi, 1996; Poudel, 2000a and 2000b; Upreti, 2002). Most such studies have failed to examine the question of whether or not the clash between customary practice and statutory law has been a major factor for conflict.

In the case of disputes between protected area authorities and local communities, senior government officials themselves recognise that "activities such as control of movement and right of way, penalties for the illegal grazing of animals, and restrictions on the collection of firewood are the main causes of resentment among local people" (Upreti, 1985). Similarly, an analysis of conflict in the Sagarmatha National Park, located in the north-east of the country, shows that the enforcement of protection-oriented statutory law undermines customary protection by local communities and deprives them of resources, leading to local resentment against protected area authorities (Stevens, 1997). Poorer households are the hardest hit by such policies and local politicians have been reluctant to challenge park management policies—especially those that have an impact mainly on poorer households.

This study explores the changes in resources rights and access regimes, and the impact of these changes on conflict and livelihood issues.

METHODOLOGY

Preparation for this study commenced in July 2003, field work was completed by mid-2004, and research and analysis was finalised in 2006. The first phase of the work included developing a common research framework for all four country studies, reviewing secondary literature on customary natural resource practices in Nepal and analysing statutory provisions on community rights over natural resources.

Field work for this report was conducted in 40 settlements, spread over 15 village development areas. Field study consisted of several visits to the Koshi Tappu area, involving the use of participatory rural appraisal tools (focus group discussions, including oral histories, timelines and key informant interviews) to examine past or existing customary resource management practices and their conflict with statutory law. Other tools employed included individual livelihood assessment, participant observation, mapping and transect walks.

The research relied heavily on participatory qualitative assessment, including purposive and deliberate cluster sampling using both the hamlet and the individual household as the unit of analysis. In-depth discussions were held with over 440 individuals belonging to 15 ethnic groups, and covering 40 different settlements at the study site. In addition, key informants residing outside the study area were interviewed. Information was also obtained from national and local government authorities as well as NGOs.

Owing to political insecurity, field research was not undertaken in Tapeshwori, one of the more remote village development areas of the buffer zone. The study team was hampered in some cases by the reluctance of local residents to speak with outsiders, particularly regarding conflict issues. For many communities, moreover, co-operation with research teams in the past had failed to result in any tangible livelihood benefits. This 'research fatigue' led many residents to initially express their disinterest in participating in this study; others requested anonymity. Direct communication with study participants posed a challenge as well, since several languages are spoken in the area. To overcome this difficulty, a local resident was engaged as translator.

DESCRIPTION OF THE STUDY AREA

Nepal is divided into four main physiographic zones: the terai (plains) in the south, the low-lying Siwalik hills, the middle hills or mid-hills that run along the length of the country from east to west and are higher than the Siwaliks, and high mountains that also span the length of the country from east to west.

The study site, covering the KTWR and its buffer zone, falls within the Koshi River floodplain located in the eastern terai near Nepal's border with India.[2] The terai region stretches across the southern part of the country and is an extension of the Gangetic plains of India (Central Bureau of Statistics, 2003). The buffer zone covers parts of three districts: Saptari, Sunsari and Udayapur. The site was selected partly because resource- and livelihood-related conflict has been known to occur in the area. The creation of the KTWR and the construction of the Koshi Barrage have greatly reduced access to natural resources, thereby directly affecting the livelihoods of communities residing in the area (Christie, 2003; Sah, 1997; Sharma, 2002).

Following the 1954 "Agreement Between the Government of India and the Government of Nepal on the Kosi Project" (Kosi Agreement), a barrage and embankments were constructed on the Koshi River which flows from Nepal into India. Construction of the Koshi Barrage began in 1958. Spanning half a kilometre, the barrage along with its eastern and western embankments were completed in 1964.

The barrage, embankments and administrative offices are known collectively as the Koshi Project. These structures and the associated offices, all of which fall within Nepal, are managed by the Indian government. Water from the barrage is used primarily to irrigate fields in the Indian state of Bihar.

Under a 1966 amendment to the Kosi Agreement, approximately 5,000 hectares of land in the area was leased to the Indian government for a period of 199 years, for the operation and maintenance of the barrage and associated structures (Basnet et al., 2004).[3] All of the families residing in the 5,000 hectare area were moved out and some compensation was reportedly provided. Nevertheless, some former landowners who vacated their land when the lease came into effect are still awaiting compensation.

The KTWR was established in 1976, primarily for the purpose of protecting the country's last remaining population of Asiatic wild buffalo (*Bubalus bubalis*) numbering about 170 animals. The reserve is roughly rectangular in shape, covering a distance of approximately 16 kilometres from north to south and approximately 9 kilometres from east to west. Its southern boundary lies 6.5 kilometres from the Koshi Barrage.

When the KTWR was created, the area declared to be protected covered 6,500 hectares. The reserve was expanded in 1979 by the designation of an additional 11,000 hectares, and the Department of National Parks and Wildlife Conservation (DNPWC) calculated the total area of the reserve to cover 17,500 hectares. This figure has since been revised. According to data compiled by the DNPWC in 2001, based on GIS mapping, the total area of the KTWR stands at 14,960 hectares (DNPWC and PPP, 2001).

In 1987, the KTWR was declared a Ramsar site—Nepal's first wetland of global importance. The area covered by this study includes not only wetland ecosystems but also forest, grassland and sandy river beaches.

The KTWR is home to 467 species of migratory and resident birds, and sees congregations of over 50,000 migratory waterfowl during the winter months. The area is also the largest known heronry in

[2] The Koshi River is also known as the Sapta Koshi ('Sapt Koshi', or 'country of the seven Koshis', refers to geographic divisions determined by the landscape). The name Koshi is sometimes written as 'Kosi'.

[3] Under the terms of the 1966 amendment and an exchange of letters between the two governments on the date the revised agreement was signed, the Indian government pays to the government of Nepal a fixed annual fee of five Nepali rupees per bigha. This amounts to an annual sum of approximately 38,000 rupees (550 US dollars), which is less than the per capita income of three persons in Nepal (one dollar is roughly equal to 70 Nepali rupees). According to data for the year 2002, the per capita GDP of Nepal stands at 230 dollars (UNDP 2003).

Nepal. The reserve supports a variety of wildlife, accounting for 45 per cent of all vertebrate species recorded in the country including the Asiatic wild buffalo. The Gangetic dolphin is found in the Koshi River which runs through the area. This river is home to two endemic fish species, *Barilius jalkapoorei* and *Pseudeutropius murius*, both known locally as *jalkapoor*. Over the last few decades, severe resource degradation has been reported as a result of overfishing and poaching, the invasion of wetlands by water hyacinth and other exotic plants, and siltation in wetlands. Forest and grassland have been lost as a result of river cutting, with the progressive erosion of land on the river banks.

The KTWR Buffer Zone was mapped and proposed in 1992, although it was formally declared only in August 2004. The buffer zone covers an area of 17,300 hectares (DNPWC and PPP, 2001), and includes land leased to the Indian government as well as private holdings and communal land. Recent field verification of the originally notified boundaries of the reserve shows that part of Ramdhuni Forest seems to fall inside the buffer zone, which was previously not thought to be the case.

A total of 16 village development committees (VDCs) spread over three districts (Saptari, Sunsari and Udayapur) are included in the buffer zone. The reserve headquarters are located in the buffer zone, in Kushaha, Sunsari district, 2.6 kilometres north-west of the Mahendra Rajmarga (East-West Highway) and approximately 57 kilometres west of Biratnagar, the country's second-largest city, by road.

Table 1: Ethnicity and caste distribution by household

Caste or ethnic group	Households (number)	Population (% of total)	Type of community
Bantar (Satar), Jhangad, Musahar	1,482	13.9	Terai ethnic
Chaudhary, Tharu	1,361	12.7	Terai ethnic
Kumale, Majhi, Mali, Mallaha	518	4.8	Terai ethnic, largely wetland-dependent
Chy, Gaderi	266	2.5	Terai ethnic
Kayastha Jha, Mishra, Rajput, Sharma, Sikh, Singh, Teli, Thakur, Yadav	3,406	31.9	Terai Hindu
Miyan, Muslim	1,286	12.0	Terai Muslim
Chamar, Dum, Sudi	430	4.0	Terai Hindu dalit
Brahman, Cheteri, Thakuri	1,123	10.5	Hill migrant, 'high-caste' Hindu, mostly farmers
Gurung, Limbu, Magar, Newar, Rai, Tamang	635	6.0	Hill indigenous, recent migrants to the area
Damai, Kami, Sarki	186	1.7	Hill migrant, dalit Hindu
Total	10,693	100	

Source: Adapted from DNPWC and PPP, 2001.

DEMOGRAPHICS AND ETHNIC COMPOSITION

Although no excavation has been carried out at the study site itself, archaeological remains discovered elsewhere in Sunsari and Saptari show that settlements have existed in these districts for centuries. Local respondents were, however, unable to give a clear account of the history of their settlement. Some talked of having lived in the area for several generations while others contradicted these assertions. It is therefore difficult to verify exactly how long ago the area was first settled by its present-day inhabitants.

Field research carried out in 1993 revealed that more than 50 per cent of households were recent migrants, most of whom (60 per cent) had arrived in the area between 1963 and 1980 (Sah, 1997). Many residents of the study area do not possess the necessary documentation to prove that they are Nepali citizens. Migration from the area is not considered significant (Sharma, 2002).

The population growth rate of Saptari and Sunsari districts during the period 1991–2001 stood at 3.4 and 2.2 per cent respectively, compared to the national average of 2.2 per cent (Central Bureau of Statistics, 2001).

Today, some 78,000 individuals make their home in the study area, living in approximately 11,000 households. The population is diverse, comprising more than 15 different castes and ethnic communities (see table 1). Over 42 per cent of the area's residents are 'high-caste'

Hindus, another 34 per cent belong to various terai ethnic groups, 12 per cent are Muslims, 6 per cent are recent migrants, and the rest are terai dalits ('low-caste' Hindus). Some 3,300 households in the study area belong to traditionally wetland-dependent ethnic communities such as the Bantar (Satar), Kumale, Mallaha (also called Gongi), Musahar and Tharu (Bhandari, 1998; Sharma, 2002).

SOCIO-ECONOMIC STATUS

Although the three districts in which the study site is located are not ranked among the poorest in Nepal (UNDP Nepal, 2004), nearly 67 per cent of the population is unable to grow sufficient food for more than six months in the year (see table 2). While 73 per cent of households officially own land, the majority (70 per cent) of these households own less than one hectare (see table 3). Among the remaining households, 15 per cent do not own any land but are tenant farmers and 12 per cent are landless.

Table 2: Household food sufficiency

Duration of food sufficiency	Households (%)
Less than 3 months	36.0
Up to 6 months	30.8
Whole year (no surplus)	22.2
Whole year (surplus sold)	11.0
Source: DNPWC and PPP, 2001.	

Table 3: Land ownership

Area owned (hectares)	Households (%)
Less than 0.05	39
0.05–1.0	31
1.0–3.0	20
More than 3.0	10
Source: DNPWC and PPP, 2001.	

Overall literacy in the study area stands at 47 per cent, with higher rates for men (58 per cent) than for women (37 per cent).

In the absence of employment opportunities at home, young people seek work in India (Delhi, the Punjab and other areas) for six months in the year, earning 1,500–2,000 rupees per month. This is true also of the Musahar, whose name literally means 'people who eat rats', a landless community whose members engage in daily-wage labour (Bista, 1967). Adults from Muslim communities and individuals belonging to relatively prosperous hill communities travel to the Middle East seeking employment. In 2001, an estimated 2 per cent of the residents of the Koshi Tappu area migrated seasonally in search of work. This figure is suspected to have risen in recent years as a result of the Maoist insurgency across the country.

KEY LIVELIHOODS

Estimates for the number of households in the study area, and for the activities they carry out to support themselves, vary significantly. According to some sources, 57 per cent of the poorest households in the study area are dependent on wetland resources, while others put the number as high as 88 per cent. Whatever estimate is accepted, at least 50 per cent and possibly as much as 90 per cent of the poorest households in the study area rely on wetland resources to sustain their livelihoods.

Although wetland resource collection is critical to the subsistence of poorer households, it was not classified separately in a 1993 study that identified 132 fishing households, 90 per cent of them landless, in the study area (Heinen, 1993). Nor were wetland-dependent activities listed in the DNPWC's 2002 estimated breakdown of occupations in the study area. Rather, such occupations have been counted in various categories—including other activities of farmers, collection of non-timber forest products, and other trades—as additional activities undertaken by households.

This study, which covered 40 different settlements, developed a socio-economic profile of the settlements based on public records of land holdings and participatory consultations that identified 26 settlements as being particularly poor.

Ten of the poorest communities in the study area have traditionally depended on wetland resources as their primary source of livelihood, carrying out activities such as fishing or using wetland plants to weave mats and baskets for sale in the market. In 13 of the poorest communities, the importance of wetland resources in sustaining livelihoods is second only to agriculture, manual labour and hunting.

Bantar, Musahar and Tharu women and children also collect snails (*ghongis*) and wild vegetables from the wetland for consumption and sale. Only three of the 26 poorest communities do not depend on wetland resources for their livelihoods.

Some wetland-dependent communities are disadvantaged in terms of land ownership. On the western side of the reserve lie 10 VDCs, parts of which fall within the buffer zone. In four of these VDCs, 115 households depend solely on fishing, and 90 per cent of the ethnic communities engaged primarily in fishing are landless (Sah, 2000). Among the Godhi and Musahar, 90 per cent are landless and dependent on fishing.

Communities that depend on wetlands suffer directly as a result of access restrictions imposed on rivers and other wetland resources within the reserve and in the barrage area, while unregulated access permitted in communal land puts heavy pressure on available resources. Recent reports indicate that fishing as an occupation is on the decline as a result of restrictions on fishing in the Koshi River, with younger men from fishing communities seeking unskilled labour in other countries, particularly India (Kathmandu Post, 2004a).

Locals claim their livelihoods are further threatened by factors such as population growth. Since the analysis of population growth trends is beyond the scope of this study, and no independent studies have been carried out on the subject, this assertion cannot be verified.

In addition to wetland resource collection, local livelihoods include subsistence agriculture by landowners and tenant farmers, and wage labour performed locally or outside the area. Of the landowners and tenant farmers, 96.87 per cent raise livestock. Ownership is unevenly distributed, however, with 10 per cent of farmers raising 26.5 per cent of all animals. Recent estimates indicate that 3 per cent of the local population is engaged in the collection and sale of non-timber forest products, while 11 per cent of residents are involved in timber trading, the sale of firewood and other businesses (DNPWC, 2002). Other occupations include retail sales and trade in non-forest goods (4.8 per cent), and employment in various institutions (6.8 per cent). Among 13 per cent of households in the area, younger members of the family travelled to India to work as wage labourers.

Grazing

People living in the vicinity of the reserve, including the 26 poorest local settlements, have long used its grasslands and forests to graze livestock (Sah, 2000). According to local informants, this traditional practice predates permanent settlement, particularly on the eastern side of the river. Elders belonging to the Yadav clan, members of which have traditionally owned large herds of cattle and buffalo, say they have grazed their animals here for centuries. Jhangads and other groups too have long engaged in livestock raising as their primary livelihood. Such claims are difficult to verify independently because no clear records exist. Despite the apparent tradition of grazing in this area, local informants were unable to provide any evidence of a traditional pasture management system. Grazing seems to have been carried out freely in forests and on riverbanks until the people started to clear land for cultivation, set boundaries and claim the land as their own.

Even today, Yadavs own sizeable buffalo herds that are illegally grazed inside the reserve. Until the mid-1990s, close to 12,000 head of livestock (mainly cattle and buffalo) belonging to 50 Yadav households were grazed inside the reserve daily (Sah, 2000). Taking into account other domestic livestock such as goats and sheep, upward of 15,000 animals were taken inside the reserve each day for grazing. Although livestock numbers are reported to have declined in recent years, poorer farmers in the vicinity of the reserve continue to graze their animals inside the protected area. In their own defence, communities living to the west of the reserve claim that the absence of boundary markers makes it difficult to know when they have strayed inside the perimeters of the protected area.

While local residents are not permitted to graze livestock inside the reserve, animals from the reserve frequently enter farmland in the surrounding areas, causing significant damage to crops. To minimise crop losses, farmers join forces to keep watch over their fields. For the system to work, however, it is necessary for farmers to synchronise plantation. As a result, residents claim they have stopped cultivating several local varieties of rice, which are grown at different times of the year, so that all

farmers may sow the same variety during the same season. Despite this effort, crops continue to be damaged by animals from the reserve.

LOCAL GOVERNMENT

A VDC is responsible for a village development area consisting of nine wards, each with a population of roughly 10,000. A group of VDCs in turn makes a district. Nepal is divided into 75 districts. Under the Local Self-Governance Act (LSGA) 1999, each district is governed by an elected district development committee (DDC).

The last local bodies elections in Nepal were held in 1997, followed in 1999 by elections for the house of representatives. Two years later, in response to the Maoist insurgency, the government of Nepal declared a state of emergency (Gyawali, 2004). Parliament was dissolved on 22 May 2002. When the term of local representatives expired in 2002, the government decided not to hold fresh elections, stating that polls could not be conducted safely or effectively, nor was the term of local elected representatives extended.

The jurisdiction of a VDC extends to the protected area itself in mountain protected areas but not in terai protected areas. As such, VDCs in the study area have no authority within the boundaries of the KTWR. In the buffer zone, VDCs have jurisdiction over government land, but not over private lands or the leased area.

LAND USE

Koshi Tappu Wildlife Reserve

Despite the ban on settlement within the reserve and frequent pressure from the authorities to vacate the area, a small cluster of around 50 houses stands inside the embankment in the south-west corner of the reserve. This wetland-dependent community does not hold legal title to the land and is therefore considered ineligible for compensation. These families have apparently been allowed to stay on because, as DNPWC officials privately admit, it has been recognised that they have nowhere else to settle if evicted (DNPWC official, personal communication, 2003). Local residents are, however, no longer able to access traditional cremation grounds on the banks of the Koshi River inside the reserve.

Koshi Tappu Wildlife Reserve Buffer Zone

The buffer zone encompasses government and privately owned land, as well as the area leased to the Indian government for the Koshi Project. Approximately 3,000 hectares of leased land is included in the buffer zone.

Since 1995, a project supported by the DNPWC and the United Nations Development Programme has been operating in the area that is now the KTWR buffer zone to promote livelihoods, conservation activities and community group formation. Initially known as the Parks-People Programme, in 2002 this initiative was renamed the Participatory Conservation Programme.

Under this programme, reserve authorities transferred management responsibilities for a small amount of land to local communities. These arrangements, which were in accordance with the laws governing national parks and buffer zones, remain in place following the formal designation of the buffer zone in 2004. This land has been put to use for forest plantation or for the construction of ponds for fisheries, and access to these areas is restricted to the communities concerned.

Harvesting thatch grass from the buffer zone is generally permitted in either December or January each year. Prior to 2001, harvesting was open to anyone. Access has since been limited to the communities living in the buffer zone in order to compensate them for damage to and/or loss of crops and domestic animals, and to reward them for their contribution to the conservation of the KTWR.

Koshi Project (leased land)

Several hundred people continue to live and carry out cultivation in the leased area. These individuals, who occupy the land illegally, include families who were lawful owners of the same land before the lease came into effect, as well as more recent encroachers. In 2004, it was reported that some 500 families in Saptari and Sunsari districts were given notice of eviction and informed that their homes were to be demolished (Himalayan Times, 2004a).

Although the reserve administration has no legal authority over the leased land, it has taken an interest in bird protection in the water impoundment area behind the barrage, where water is collected for diversion to India. This step was prompted by the need to curb rampant poaching reported in the area. Since 2001, a watchman has been employed every winter, when thousands of migratory birds arrive, to protects the birds from hunters (Singh, 2003).

Government land

While some government land is controlled directly by line agencies, in other cases government land is under community management. This includes land within or in the vicinity of villages, used by villagers and considered to be communal land. The term 'communal land' is not defined or used in the LSGA or the Land Acquisition Act 1977. The Land (Survey and Measurement) Act 1963 defines public land to include land used "on a communal basis" (section 2(f)). For this study, the term 'communal land' is used to mean public land used on a communal basis.

▪ Government land controlled by line agencies

In the buffer zone, this category includes land supporting government infrastructure such as the KTWR headquarters, range posts, army posts, roads and canals.

Local respondents allege that encroachment has taken place on government land for both settlement and cultivation. According to the KTWR draft management plan, however, private cultivated land comprises nearly 70 per cent of land in the buffer zone, which is roughly equal to the total amount of cultivated land in the area, as calculated in 1992 (DNPWC, 2002). This suggests that more or less all cultivated land in the study area is privately owned, and that little or no government land has been encroached upon for farming. Both reserve authorities and locals agree, though, that the hunting and poisoning of birds and animals does take place on government land, posing a significant threat to wildlife.

▪ Communal land

Communal land includes ponds and lakes, such as the 160 hectares of communal wetlands in Haripur, Laukahi, Madhuban, Prakashpur, Sripur and West Kushaha VDCs (DNPWC and PPP, 2001). The northern and southern part of the buffer zone also includes sections of the Koshi River. Access to the northern stretch of the Koshi River before it flows into the reserve is unregulated, while the Koshi Project office exercises control over specified activities, including boating and fishing, in the southern portion of the river. Other sections of rivers to which access is unregulated include the northern section of the Koshi River in the Prakashpur village development area and the Trijuga River in the Tapeshwori village development area.

Except for areas managed by local communities under the Parks-People Programme/Participatory Conservation Programme, access to communal lands is unregulated and these lands are generally degraded.

Private land

Approximately 70 per cent of land in the buffer zone is under private ownership. This includes private wetlands as well as cultivated land.

Cultivated land increased from 10,680 hectares in 1978 to 11,945 hectares in 1992, largely as a result of land conversion (DNPWC and PPP, 2001). In the buffer zone, 'ownership' includes both statutory land rights and de facto occupation as cultivator/owner, the latter being the case in the land leased to India. All cultivated land in the study area lies within the buffer zone. Land inside the reserve has not been encroached for cultivation.

Some 261 hectares of privately owned wetlands are found in the Haripur, Laukahi, Madhuban, Prakashpur, Sripur and West Kushaha VDCs in Sunsari District (DNPWC and PPP, 2001). Tenant farmers also live in the area but specific information regarding the number of such households is not available.

On the eastern side of the reserve, 10 per cent of private land is waterlogged as a result of seepage from river embankments. In such areas, the accumulation of sand behind the barrage and embankments has left the river bed higher than the surrounding agricultural land. The waterlogged land is less productive and owners claim they should be compensated for this damage. Others argue that without the embankments, the Koshi River would by now have eroded their land completely.

RESOURCE RIGHTS REGIMES

Various resource rights regimes apply to different categories of land in the study area. These rights regimes are based on statutory law as well as customary resource use practices. Not surprisingly, the statutory regimes in particular are not neutral but rather reflect political choices that favour the interests of dominant economic, political and social elites.

Under most land ownership arrangements, use practices differ significantly from statutory provisions. In some instances this is because the concerned government agencies have recognised the needs of local residents. In other cases, local authorities are themselves unfamiliar with legal provisions related to resource rights. But for most communities, obeying the law involves a high cost in terms of their survival. Such communities and individuals are faced with the choice of breaking the law or losing the basis for their livelihoods.

Several tenure arrangements are in force in the Koshi Tappu area, where the statutory regime varies according to the status of the land in question. The study site includes a protected area (the KTWR) and its buffer zone, the latter made up of private, government and communal land, as well as the area leased to the Indian government. At the famous temple of Ramdhuni, located near the study area, some land is held in the temple's name under a traditional arrangement known as *guthi*, although it could not be definitively determined whether this site falls within the study area.

STATUTORY REGIME

Koshi Tappu Wildlife Reserve

The KTWR was established in 1976 under the provisions of the National Parks and Wildlife Conservation Act (NPWCA) 1973. This law, as amended, defines a "wildlife sanctuary" or wildlife reserve as an area set aside for the conservation and management of wildlife resources and their habitats (section 2(c)). Under the NPWCA, land within the perimeters of a protected area is the property of the state (section 3(2)). Permanent settlement is not allowed in such areas, except with written permission from the authorities (sections 5(b) and 5(c)).

Although the NPWCA allows the government to entrust management of conservation areas to any institution whose objective is conserving nature and natural resources (section 16B)), the DNPWC, part of the Ministry of Forests and Soil Conservation, has opted to manage KTWR through a warden who has broad discretionary powers. The NPWCA does not provide for a management board or other organisation to assist and advise the warden or the DNPWC. Although the NPWCA empowers the warden, in coordination with local authorities, to form users committees to manage fallen trees, firewood and grass in protected areas (section 16C), no such committee has to date been established in the reserve.

The NPWCA and the Wildlife Reserve Regulations 1977 (1985 amendment), which extend to all national parks and wildlife reserves in the country, prohibit a wide range of activities within protected areas. These include settlement; clearing; farming; grazing; hunting; lighting fires; cutting and removing vegetation; fishing; watering domesticated animals; excavating rocks, stones or soil; and blocking, diverting or placing hazardous materials in rivers, streams or other water bodies. Under the NPWCA (section 5), however, written permission may be obtained to carry out any of these activities.

In the case of fishing, the 1977 Regulations allow fishing to be carried out in rivers and ponds within a wildlife reserve, subject to conditions imposed by the warden regarding the time of year and location where fishing is permitted. The 1977 Regulations (section 10) also provide that fishing may only be carried out by means of a rod, and upon payment of a daily fee of 50 rupees, conditions which discourage subsistence fishing.

Although the NPWCA and the 1977 Regulations restrict resource harvesting and access, certain allowances have been made to cater to the needs of local communities. People living on the western side of the reserve, particularly the north-west, negotiated the right to access the Trijuga River inside

the reserve for the purpose of watering domestic animals throughout the year, without obtaining a permit or paying fees. This concession was granted after the expansion of the reserve in 1979.

Similarly, in 1976 the ban on collection of wild grass in the Chitwan National Park was relaxed in the case of local communities living around that protected area (Lehmkuhl, 1988). This was done under section 16 of the NPWCA which allows reserve authorities to hunt, remove vegetation or undertake similar activities for the purpose of management in a national park or reserve. Subsequently, communities in the KTWR were also permitted to harvest thatch grass each year during a specified season, upon payment of a small entry fee (currently 10 rupees). Since 2001, however, only those residing in the area that was in 2004 officially declared as the buffer zone are permitted to harvest grass inside the reserve.

The NPWCA and the 1977 Regulations contain no provisions allowing the performance of religious rituals or funeral rites within protected areas. A warden, however, has the discretion to grant permission for the harvesting of fuel wood and timber for weddings, funerals or other special occasions. This was done in 2004 when firewood was provided for a Muslim conference held locally.

The warden supervises game scouts whose duties include monitoring for illegal use of wildlife. The NPWCA empowers the warden and assistant wardens to search homes, buildings, land, vehicles and goods; to arrest suspected offenders without a warrant; and hold detainees for 24 hours (sections 23 and 24). Offenders and their accomplices may be fined and/or imprisoned, depending on the gravity of the offence, for engaging in any of the prohibited activities listed above and for killing, injuring or trading in protected birds and animals (sections 26 and 27).

Since the reserve was created in 1976, a 240-strong company of the Royal Nepalese Army has been deployed in the area to protect the reserve and its resources. Until recently, protection efforts were hampered by the Maoist insurgency that had swept across Nepal. In the study area, army posts were abandoned and management was centralised to the KTWR headquarters, leaving most parts of the reserve unprotected.

Koshi Tappu Wildlife Reserve Buffer Zone

The NPWCA defines a buffer zone as an area adjacent to a national park or reserve, set aside to allow local communities to use forest resources (section 2(e2)). The Buffer Zone Management Regulations (BZMR) 1996 and the Buffer Zone Management Guidelines 1999 were issued under the NPWCA to regulate land use, ensure compatibility with protected area management goals, facilitate public participation in the conservation and development of the area, and allow for benefit sharing. A nine-member Buffer Zone Management Council for KTWR was formalised in April 2005.

Under the BZMR, the warden of a protected area is responsible for preparing a management plan for that protected area's buffer zone (section 5). The plan, to be approved by the DNPWC, must include activities to promote community development, environmental conservation and the balanced utilisation of buffer zone resources. The government may channel 30–50 per cent of the revenues generated by the reserve (such as earnings from tourism) to local communities for conservation and development activities (NPWCA, section 25A).

The law is silent on the effect of only part of a VDC falling within a buffer zone, or of a buffer zone covering all or part of more than one VDC. The KTWR warden's office works in coordination with all VDCs to avoid duplication of development activities in the buffer zone.

The law provides that the warden may, in coordination with settlements and local authorities, divide the buffer zone into units to facilitate management (BZMR, section 4). The warden is also empowered to form users committees for the buffer zone, in coordination with local government authorities (NPWCA, section 16C; BZMR, section 8), in order to manage fallen trees, dry timber, fuel wood and grass inside a national park, reserve, conservation area or buffer zone. In practice, however, users committees have only been established in buffer zones around national parks and wildlife reserves.

There are altogether nine buffer zone users committees in the KTWR buffer zone, with a number of sub-committees established under them. A users committee may implement activities specified in the

approved plan for its unit. A users committee may apply to the warden to take responsibility for managing any forest in the buffer zone area designated as "buffer community forest" (BZMR, section 21). Similarly, a religious authority, group or community may apply to the warden to take responsibility for a "buffer religious forest", defined as any religious place situated in the buffer zone, provided that religious activities do not negatively impact the environment or the rights of other users (BZMR, section 22). The Forest Act 1993 (sections 35–37) also provides for the handing over of religious forest under conditions similar to those related to buffer religious forest areas.

The warden may dissolve a users committee for a buffer community forest or a buffer religious forest if the users committee is unable to implement work plans, or if it contravenes rules and regulations (BZMR, section 14). Procedures for dissolution, as stipulated in the BZMR, include a provision for appeal by the committee to the director-general of the DNPWC.

Under the BZMR, a number of activities are prohibited in a buffer zone, unless specific permission has been granted by the warden (BZMR, sections 17 and 19). Such activities include harvesting trees, carrying out cultivation and any other destructive practices inside forests; mining, quarrying stone, soil or sand, or removing any substances in a way that is likely to have significant adverse impact on the environment; using hazardous pesticides or explosives in a river, stream or source of water flowing inside a buffer zone; and hunting wildlife.

Of the 5,000 hectares of land leased to the Indian government under the 1966 amendment to the Kosi Agreement, approximately 60 per cent (3,000 hectares) falls within the buffer zone. Although the Koshi Project office is a stakeholder with interests in the conservation of the KTWR and the development of the buffer zone and surrounding areas, the BZMR do not require coordination with project authorities. The warden nevertheless consults with the Koshi Project office as needed.

Koshi Project (leased land)

According to the revised Kosi Agreement of 1966, the government of Nepal retains "sovereignty rights and territorial jurisdiction" in the leased area, including the authority to enforce Nepali law (clause 5(v)). The KTWR warden is responsible for enforcing the NPWCA and the BZMR in the leased land located within the buffer zone. The Saptari and Sunsari district administration offices, meanwhile, are responsible for general law enforcement in the leased area.

Resource use restrictions imposed under the Kosi Agreement are not intended for natural resource conservation but to ensure the security of the barrage. The revised Kosi Agreement provides that all fishing rights in the Koshi River in Nepal remain with the Nepal government (clause 11). Fishing within two miles of the barrage is allowed only with a special permit issued by the appropriate Nepali authority in consultation with the executive engineer of the barrage.

The Kosi Agreement does not explicitly restrict the extraction of any resources other than fish from water or land in the project area. But a notification issued in 2002 by the Ministry of Agriculture and Cooperatives, under the amended Aquatic Animals Protection Act 1961, without exception forbids fishing one kilometre upstream and downstream from the barrage, and prohibits the killing, capturing or harming of three species of fish, 12 varieties of turtle, two types of crocodile, two otter species and one dolphin variety.

Under the authority awarded to DDCs by the LSGA (section 217(a)), each year the Saptari DDC issues a licence for fishing in wetlands in the leased area, outside the one-kilometre limit upstream and downstream from the barrage, by floating an annual tender. For the Nepali financial year 2060–61 BS[4] (2004–05), the licence was issued upon payment of 54,000 rupees (Yadav, 2004). Local residents allege that Koshi Project staff also allow fishing, as well as driftwood collection, at and near the barrage, upon payment of a bribe.

[4] The Bikram Sambat (BS) calendar, devised in 57 BCE by the Indian king Bikramaditya (or Vikramaditya), is 57 years ahead of the Gregorian calendar. It was adopted as Nepal's official calendar in 1903 AD.

Government land

▪ Government land controlled by line agencies

In cases where the government seeks to acquire land, provisions for acquisition and compensation are outlined in a number of laws including the Public Roads Act 1974 (section 4), Land Acquisition Act 1977 (section 3), Electricity Act 1992, Water Resources Act 1992 and Forest Act 1993 (Belbase and Thapa, 2004).

▪ Communal land and community forest

The LSGA deals with the rights and management responsibilities of elected local bodies such as the VDCs, municipalities, metropolitan authorities and DDCs, with respect to communal land as well as natural and cultural heritage that lies within such land. Under the LSGA, all communal land is the property of the VDC concerned (section 68(1)).

The statutory regime does not explicitly recognise rights over communal wetlands. If wetlands are interpreted to be 'natural heritage' under the LSGA, then wetlands within a village development area would also fall under the jurisdiction of the VDC.

VDCs are empowered to prepare and implement programmes concerning forests, vegetation, biodiversity, soil conservation and environmental conservation at the village level, and to sell timber, fuel wood, twigs, branches, grass, straw and other resources from the village development area (LSGA, section 189). Village-level projects are to be carried out by consumers' committees (section 49).

Under the Forest Act, all forests except for those under private ownership are defined as national forests (section 2(e)). National forests are managed by the government (sections 20–22), or handed over as community forest (section 25), leasehold forest (section 31) or religious forest (section 35). District forest offices and range posts enforce forest management regulations.

The Forest Act authorises a district forest officer (DFO) to hand over any part of a national forest to community forest user's groups (CFUGs) as a community forest, entitling the CFUGs to develop, conserve, use and manage the forest and to sell and distribute forest products according to an approved work plan (section 25(1)). Some forests, such as the Ramdhuni Forest, are found in the north-east of the buffer zone but most 'forest' areas standing today are recently-established community plantations.

The LSGA, meanwhile, stipulates that the natural heritage of the village development area, as well as forests granted by prevailing forest laws and forests handed over by the government, are the property of the VDC, which may dispose of or sell its property with the permission of the government (section 68(1)).

Some local government officials mistakenly believe that all forests within the area of a VDC or DDC are the property of that VDC or DDC. In fact, both the Forest Act and the LSGA specify that forests must be explicitly granted before they become the property of a VDC or DDC. To date, no forest has been allotted to a VDC.

Prohibitions on harvesting certain species, as laid down in the Aquatic Animals Protection Act 1961, NPWCA 1973, Soil Conservation and Watershed Management Act 1982, and Forest Act 1993, also apply to communal lands.

▪ Water resources

While rights to wetland resources are poorly defined in statutory law, water resources are well-regulated and rights clearly specified. The Water Resources Act 1992 vests in the state ownership of all types of water above or below ground and in "whatever form" (section 3, read with section 2(a)). The state has the right to regulate who may or may not use water resources, how and where resources may be used, and in which order of priority. If the government takes over water resources previously used by the public, the state must pay compensation for any land, equipment or structures

used in connection with them (section 10(3)), but is not required to compensate the loss of the use of the water itself.

The Water Resources Act prohibits the use of water resources, except with a licence (section 4). Licences are not required for personal or domestic use either individually or collectively, for irrigation, for water mills and water grinders used in cottage industries, for non-commercial transportation by boat, and for the use of water located within an individual's own land.

The Water Resources Act allows the use of water resources "for collective benefits on an institutional basis" through water users associations (section 5) which are recognised as autonomous corporate bodies (section 6). The government may transfer to users associations water-related projects it has developed or acquired from others (section 11). Such projects are then owned and operated by the users association. There are no water users associations in the KTWR or the buffer zone.

▪ Grassland

In the study area, grasslands occur in both the KTWR and the buffer zone. All grasslands in the buffer zone are communal land and under the BZMR could be managed by users committees created for that purpose (BZMR, section 10, read with section 5(2)). Within the reserve, however, grasslands occurring inside community forest or government forest are managed as forest resources rather than grassland resources.

▪ Minerals

According to the Mines and Minerals Act 1985, the state owns minerals occurring on private or government land (section 3). Minerals are defined broadly as any inorganic material found on or below the soil surface (section 2(a)) including rocks, sand, soil and stone. At present, the Department of Mines and Geology and the DDCs require CFUGs to give up such areas on lease, except where the groups have been strong enough to resist district-level political pressure. In most cases, CFUGs have relinquished control over mineral resources within the forests handed over to them, either to the DDC or to the Department of Mines and Geology (Belbase and Thapa, 2004). Under the BZMR, users committees could in theory manage minerals as well as other resources in a buffer zone, but it is unlikely that they or the warden would be more successful than CFUGs in resisting pressure to hand over control.

Private land

The law is clear on the status of private land and provides for compensation if such land is to be acquired by the state. The Lands Act 1964 sets a ceiling on the size of holdings that an individual or company may own (section 7). Exemptions are granted in cases where a company is able to demonstrate the need for additional land, such as for the establishment or expansion of tea estates, horticulture farms, factories, agro-forestry enterprises, hotels and resorts. Exemptions are not made for individuals.

The Land Acquisition Act 1977 sets out conditions under which the government may provide compensation for land acquired for a public purpose. Section 16(2)(a) provides that the market value of the land at the time of acquisition shall be taken into consideration in determining compensation, which does not necessarily mean that compensation will equal market value. A committee is to be formed to determine the amount of compensation to be paid (section 13) and individuals whose land has been acquired have the right to appeal the acquisition. The government has the power to acquire land under "extraordinary circumstances" (section 25). In such cases, people whose land has been acquired have the right to appeal the amount of compensation, but not the acquisition itself. The government may acquire land for one purpose and subsequently use it for another (section 33) and may sell land it has acquired (section 35).

The Forest Act contains detailed provisions regarding the acquisition of land for the purpose of establishing national forests, and for compensation in such cases (chapter 2, sections 3–19). The NPWCA has no such provisions.

Nepali law also recognises prescriptive rights to land. The Land (Survey and Measurement) Act 1963 stipulates that land may be registered as private holdings on the basis of an unofficial deed if the area in question has been in an individual's possession for 15 years (section 6(5a)).

While taking wildlife is prohibited in protected areas under the NPWCA (section 5), prohibitions on species harvesting in the Forest Act (section 38) and the Aquatic Animals Protection Act (section 4(b)) do not apply in private land. Reserve authorities claim that hunting and the poisoning of birds, activities banned in the KTWR and the buffer zone, continue to take place on private land, with negative effects on wildlife within the reserve.

Inconsistencies in the statutory regime and its application

The regulatory regime for protected areas contains a fundamental inequity. Under the Himalayan Parks Regulations 1979, communities living in the vicinity of mountain protected areas enjoy greater access to natural resources in those areas than do communities in the vicinity of terai protected areas (Belbase and Thapa, 2004). Communities living in the Koshi Tappu area suffer this basic disadvantage in addition to the difficulties created by inconsistencies in the quality and security of use rights created by other laws.

By statute, the rights of users committees formed under the NPWCA and BZMR, and of consumers' committees created under the LSGA, are less secure than the rights of CFUGs that may be formed under the Forest Act or water users associations provided for in the Water Resources Act. CFUGs and water users associations are formed at the initiative of the resource users themselves, and are registered as autonomous corporate bodies (Forest Act, sections 41–43; Water Resources Act, section 6), while users committees are formed at the discretion of a warden in coordination with local officials (NPWCA, section 16C; BZMR, sections 8 and 9). Both users committees and CFUGs may be dissolved and their registration cancelled by the warden or DFO under specified conditions; in both cases, there is a right of appeal (BZMR, section 14; Forest Act, section 27). The LSGA does not specify how consumers' committees are to be created or dissolved.

There are no formal mechanisms for interaction among users committees, consumers' committees, CFUGs and water users associations. There are cases of overlaps of membership in CFUGs and water users associations, but there is no experience in the KTWR and no report or documented evidence of experience elsewhere in the country in such cases, or of any other type of interaction.

The relationship between the powers of different types of users groups and those of the VDC/DDC where they are located is not clear. The Local Bodies (Financial Administration) Regulations 1999 require that users groups implementing programmes and projects do so in accordance with directives and policies issued by the respective local bodies (section 71(j)). Because locally elected officials do not necessarily have the same stake in resource management as the direct users of those resources, the LSGA and the 1999 Regulations create the possibility that benefits would not accrue to direct user/managers as intended by the NPWCA, Forest Act and Water Resources Act. Where a users group is responsible for resources located in more than one VDC/DDC, this creates the potential for conflict between VDCs/DDCs and the possibility that legitimate users group members from other VDCs/DDCs would be excluded on administrative grounds. To date, no workable mechanism has been developed under the LSGA to accommodate users groups.

Dispute resolution is another area of inconsistency between the LSGA and the Forest Act. The LSGA vests in a VDC the right to initiate and decide cases relating to pasture, grass and fuel wood in a village development area (section 33(1)). The Forest Act delegates similar responsibility to DFOs, who may hear and dispose of cases when the penalty is a fine of 10,000 rupees or imprisonment of less than one year (section 65).

In the study area, statutory restrictions on resource use are not applied consistently. For example, KTWR authorities allow access to the Trijuga River for domestic animals to drink and bathe, but not to graze, and tolerate the continued existence of a small settlement inside the reserve's western boundary. Similarly, communities residing in the buffer zone are permitted to collect thatch grass from within the reserve. Fishing is also permitted in the KTWR, upon payment of a fee, and subject to restrictions that may be imposed by the warden. All other use of natural resources within the reserve

is prohibited. Even so, local communities continue to fish, harvest forest products and grass, and graze their domestic animals in the reserve.

While local residents have been denied traditional resource uses inside the reserve, de jure if not de facto, protected area officials and the army are perceived to benefit from access to these resources. The NPWCA empowers protected area officers to provide specified forest products or other services in exchange for specified fees (section 16A), but neither permits nor prohibits protected area officers and military personnel from using fuel wood or other resources from national parks and reserves free of charge. The inequity perceived by local communities has created resentment against both the reserve and the military (Sah, 1997).

CUSTOMARY PRACTICE

Custom and customary law are usually associated with local tradition. They are considered to be sets of rules that are legitimised by generally accepted social practice, distinct and different from the rules of the state.

Land tenure studies of the Licchavi state as well as modern Nepal note the existence of customary tenure arrangements. The Hindu Licchavis initially retained the customary tenure arrangements of the non-Hindu Kirata rulers who had preceded them (Sharma, 1983) but gradually replaced customary tenure with centralised land ownership by the king.

During the rule of the Licchavis, a tenure system called *guthi* was developed under which land was held in trust by communities for the upkeep of religious or welfare institutions. Income from a share of the products of such land and rent is given to the priest, and used for the temple's upkeep. The *guthi* system was developed by the Newar ethnic group but was adopted by others who wanted to give land in trust. All such land held in trust is now considered *guthi* land. *Guthi* also enjoys statutory cover through the Guthi Corporation Act 1976, most recently amended in 1993, which expands the definition of *guthi* to encompass any movable or immovable property or any income-yielding fund used for any religious or philanthropic purpose (section 2(c)).

A similar customary system of communal land ownership, known as *kipat*, exists in Nepal to this day (Regmi, 1999 [1977]). For ethnic communities residing in the eastern and middle hills of Nepal, *kipat* was an important land tenure system until the late 1960s. The *kipat* system was discontinued in 1968 by means of land reform legislation but its erosion is considered to have started as far back as the late 18th century with the unification of Nepal under the conquest of a Hindu king, Prithvi Narayan Shah. Although the system was officially abolished, the move has not been fully implemented. As a result, the *kipat* system continues to be practised across the country.

Other customary natural resource practices have comparatively recent origins. For example, community forest management in the mid-hill districts of Sindhu Palchok and Kabhre Palanchok started as late as 1951, in response to declining forest resource availability in the area. This practice continued even after all forests were nationalised in 1957 (Fisher, 1989).

The suppression of customary tenure practices under statutory law has been opposed by communities in the past. Between 1914 and 1917, for instance, the Limbus, an ethnic group belonging to Ilam[5] in eastern Nepal, "were compelled to present a united front against the authorities when the district became the locus of a concerted effort on the part of Kathmandu severely to restrict—indeed, virtually to abolish—lands held under the *kipat* system" (Caplan, 1970). Similarly, in 1951 the Limbus submitted a petition to the king in an attempt to retain this form of land ownership.

Little is known about customary practices in the study area. The *guthi* and *kipat* systems of tenure do not exist although ethnic communities now living in the study area have followed these practices elsewhere in the country. In the case of natural resources as well, even communities with long-standing ties to the area are unable to give an account of customary management practices.

[5] The district of Ilam is located in eastern Nepal, adjoining the Indian state of Sikkim, and covers mostly middle hills.

Whether communities have lived in the Koshi Tappu area for centuries or settled here a few generations ago, it is interesting that current residents are unable to recount any customary tenure or resource management practices, particularly since these communities depend at least partially on natural resources for their subsistence. Field research carried out for this study failed to uncover any evidence of past or current customary resource management practices. Local informants claimed that for nearly a century, access to fishing and grazing was open to all. Since most local communities in the Koshi Tappu area do not fish or graze animals in a single location, it is difficult if not impossible to secure their customary rights to use resources in any particular area.

Why customary law governing resource management apparently failed to evolve in the study area is an interesting question. There are a number of possible reasons for this seeming anomaly. Establishing use rights may have been impractical. In the KTWR area, the Koshi River changes course annually during the monsoon within the confines of the embankments on both sides. It is a braided river with several channels and the river changes its channels. Along with seasonal fluctuations come variations in the depth of the water, the bend of the river and the vegetation growing along its banks. As a result, the most plentiful fishing sites also vary with the seasons. Fishing communities may have had little to gain by asserting their rights over a specific section of the river and would have found it difficult to stake a claim on the entire river.

Perhaps establishing use rights was unnecessary. It is possible that resources were abundant in the past and that no need was felt to develop a management system. By the time that resources grew scarce, major demographic changes had taken place in the area as a result of population growth and migration. Social change would have hindered the development of an enforceable customary system of resource management.

Alternatively, rules for resource management may not have been required in the past because, until relatively recently, the population of the area was small enough that unregulated access for all provided enough for all. The subsequent influx of migrants and the changes in land tenure that followed may have occurred quickly, leaving the original inhabitants with no time to assert their traditional rights.

Another possible explanation is that customary laws and management practices fell into disuse, and were eventually abandoned. Having lost their relevance to the lives of the people, such practices may simply have vanished from the collective memory of local communities.

Customary law governing communal resource access and use may not have evolved in the Koshi Tappu area but in some parts of the world use patterns established over an extended period of time have been considered a basis for the establishment of rights. In neighbouring India, for example, proof of extended use of a resource has been drawn on to establish statutory rights. This was the case in Chennai, where a community successfully asserted its legal right to fish with stake nets in a particular area, based on proof of 30 years of use (Narsayya v. Sami, 12-Madras; in Krisnan, 1998). If courts in Nepal were to be persuaded by a similar argument, this would give certain communities in the KTWR area the opportunity to assert their own fishing and grazing rights.

INTERACTION BETWEEN CUSTOMARY AND STATUTORY REGIMES

Customary practice and statutory law do not always come into conflict. Beginning in the 1990s, some aspects of customary practice have been incorporated into legislation for various sectors, as is the case with provisions for community forest management in the Forest Act and farmer-managed irrigation systems in the Water Resources Act. Over the years, control over resource access and use by local communities in Nepal's protected areas has become less stringent and new types of conservation zones have been created such as the Annapurna Conservation Area, located in the north-central part of the country, near the border with Tibet (Stevens, 1997).

Nevertheless, in the Koshi Tappu area disparities continue to exist between customary resource use and statutory law. Strictly speaking, statutory restrictions currently in place cannot be said to conflict with customary law as such, because no body of customary law is known to exist in the area. The conflict between local communities and reserve authorities may therefore be considered a conflict between statutory law and long-standing practice.

The LSGA provides that public properties, including ponds and grazing fields, are the property of the corresponding VDC (section 68). Similarly, forests that have been granted to a VDC by law, or otherwise handed over to a VDC by the government, are the property of that VDC. Natural heritage is also the property of a VDC. The LSGA does not define the term 'natural heritage', which could be interpreted to cover other natural resources not specifically mentioned in that law.

A VDC is permitted to sell assets under its jurisdiction, including the products of public ponds and gardens, straw, grass, and forest products such as dry timber, firewood, branches, twigs and roots—all of which are also used by local communities. Depending on how a VDC manages its assets, there is a potential for its actions to interfere with individual community-level use and/or customary practice.

A VDC is not authorised to tax subsistence or community-level use of natural resources but is permitted to levy a Natural Resources Utilisation Tax on the commercial exploitation of natural resources and heritage within a village development area (LSGA, section 55(j)). Since VDCs are elected bodies, more accountable to their constituencies than are central government agencies, it is unlikely that a VDC would deny local people access to the natural resources on which their livelihoods depend, in favour of commercial exploitation. The law does, however, provide an incentive for VDCs to generate income by promoting commercial exploitation and taxing such activities, which has the potential to conflict with subsistence use and small-scale community livelihood support activities.

INSECURITY AND CONFLICT

The Koshi Barrage and the KTWR are a significant presence in the study area. This is true both in terms of the expanse of land covered by the reserve, buffer zone and Koshi Project lease, as well as the number of related officials, including Koshi Project office staff, reserve personnel and members of the armed forces, who manage or patrol these areas. Conflict most frequently occurs between KTWR officials and local residents. The issues at stake are access to and use of reserve resources, and the impact of the reserve on private land and livelihood opportunities.

Conflict over natural resources in the study area is rooted in perceived as well as actual inequities and threats to livelihood security. Such conflict is rarely violent, appearing rather in the form of disputes that arise as a result of the conflicting needs of stakeholders: protected area authorities seek to enforce their mandate, while local communities strive to secure access to the resources on which their livelihoods depend.

Compensation for land acquired by the government has remained a contentious issue in the KTWR and the leased area. Contradictory statutory provisions of various laws, particularly those related to the relationship between local elected authorities and statutory resource users groups, have also given rise to conflict. Disputes over hunting or the collection of birds and animals occur across the study area. Conflict also arises because specific resource use restrictions have been imposed in certain areas. Major conflict issues in the study area are summarised in table 4 below.

During the course of this study, it emerged that an intra-community conflict had arisen over fishing in the study area. This is a potentially important development, particularly since no such disputes have been reported in the past. Further research will be required to see whether the conflict reported was an isolated incident, or if it is a sign of things to come.

Forty years ago, before the Koshi Barrage and the KTWR were established, people living in the area enjoyed unregulated access to fish, thatch grass and other wetland resources. Forty years later, access to these resources is regulated and restricted. Although local communities and individuals legally no longer have the same rights, they persist in the same practices because their options as they perceive them are limited. Conflict and insecurity arise because, in the four decades since the

Table 4: Major conflict issues in the Koshi Tappu Area

Land category	Issue
Koshi Tappu Wildlife Reserve	▪ Ban on collection of wetland resources, fuel wood, timber and driftwood ▪ No access to cremation grounds ▪ Ban on grazing of domestic animals ▪ Hunting of birds and animals from the reserve ▪ Inadequate or no compensation for private land acquired by the government for reserve expansion ▪ Intra-community competition over fishing ▪ Removal of domestic cattle and buffaloes from the reserve ▪ Punishment of “offenders” by the army and reserve officials
Leased area	▪ Fishing and driftwood collection allowed by barrage authorities (at the barrage) and by the DDC (near the barrage); both practices are illegal ▪ Hunting of birds and animals ▪ Settlement not allowed in the area (although some settlements exist illegally) ▪ Inadequate or no compensation for private land acquired by the government
Communal/government land under DDC and VDC jurisdiction	▪ Hunting of birds and animals banned under various laws ▪ No management of such land by concerned authorities ▪ Some community plantations and fish ponds promoted by the reserve under uncertain legal tenure ▪ Unclear resource ownership as a result of contradictory laws (such as those governing water and minerals)
Private land	▪ Hunting of birds and animals banned under various laws ▪ Waterlogging from seepage from the river ▪ Damage to and loss of crops and homes, as well as human life, caused by wild animals and feral cattle from the reserve ▪ Crop damage by animals from the reserve; impact on traditional crop varieties

Koshi Barrage was constructed and the KTWR created, there has been no satisfactory resolution of the problems caused by cutting communities off from the resources on which the security of their livelihoods depends.

The laws that allocate rights to resources in the area do enable local communities to participate in resource management and share in the benefits of sustainable management. Disparities in the quality and security of those rights, however, and apparent overlaps in jurisdiction to administer resources, diminish their effectiveness as instruments for ensuring livelihood security.

The poorest, most marginalised individuals and communities are those whose livelihoods are most insecure. While existing law offers soft resource rights to members of various users groups, the very poor confront substantial obstacles to participating in groups that could assist them. Language barriers and the lack of adequate information are two such hurdles, as is the fact that the very poor rarely have the luxury of taking time off from subsistence activities to participate in such initiatives. Even in groups established to facilitate benefit-sharing, moreover, the tendency is for elites to dominate decision-making and monopolise benefits. The widely lauded community forestry programmes, for example, are now starting to be questioned regarding their ability to improve livelihood security for the poorest of the poor, as new elites emerge within user groups (Upreti, 2000).

Compensation

Residents of the study area report claims for compensation arising from three sets of circumstances: for land lost when the Koshi Barrage was constructed in 1958–64 and additional land was leased to the Indian government in 1966; for land lost when the KTWR was created in 1976 and expanded in 1979; and for land waterlogged as a result of seepage from the barrage embankments.

Over the years, the government has formed 12 separate commissions to investigate claims related to the KTWR but to date these claims have reportedly not been resolved to the satisfaction of the majority of claimants (Kathmandu Post, 2003). Wildlife authorities had indicated that compensation would be paid gradually but that was not done and people continue to live landless on public land (Kathmandu Post, 1999).

Displaced families from Sunsari district complain that no compensation has been paid to them even following the 12 commissions formed to settle the issue. Locals from Saptari district, meanwhile, allege that their land ownership certificates were taken by the KTWR administration and misplaced, and say that without legal ownership certificates they have no means to prove their entitlement to compensation. It is also alleged that those lacking political or personal connections with compensation commission members have received no compensation and that when the government provides land to the landless, the decision is subjective and tends to favour those who are affiliated with the governing political party.

Some who were displaced without compensation are said to have turned to local courts but specific information about their cases is not available.

Resource use

Other causes for conflict revolve around resource use restrictions. Most communities living around the reserve rely on its natural resources for their livelihood. Although activities such as fishing, and fuel wood and fodder collection, are technically illegal, it is estimated that nearly half of the reserve area is accessed by those living in the surrounding areas (DNPWC and PPP, 2001). Local people as well as reserve authorities claim that poaching takes place inside the reserve.

While KTWR authorities restricted fishing in the Koshi River because the poison used by fishers is said to have endangered rare species of birds and water animals (Kathmandu Post, 2004a), traditionally wetland-dependent groups report they have no choice but to enter the reserve illegally in order to fish. Fishers have attempted to find alternative means of employment but are faced with limited options apart from seasonal work (Kathmandu Post, 2004a). Forced to rely on the resources of

the reserve to earn a livelihood, they risk fines, confiscation of their catch and gear, as well as verbal and physical abuse from army troops and reserve staff.

Damage caused by wild and feral animals

Fewer than 200 wild buffalo are believed to live in the KTWR, which was created primarily to protect this species. Local residents are not permitted to graze domestic animals inside the reserve. Even so, some 7,000 domestic cattle as well as 500 feral cattle are reported to exist within its perimeters. Wild buffalo and feral cattle raid crops in the surrounding areas, wandering into farmland as far as 10 kilometres from the reserve boundary (Resources Himalaya, undated). Because there are more than twice as many feral cattle as wild buffalo, it is likely that the feral animals cause significantly more damage than the wild buffalo. In practice, however, it is difficult to determine which animals are responsible for the bulk of the damage to farms and crop losses. The frequent occurrence of crop raiding has led to severe animosity between local farmers and reserve authorities.

Migrant elephants travelling between the reserve and the Indian state of Assam also cause damage to crops and homes, occasionally injuring or even killing humans (Kathmandu Post, 2004b).

There are no statutory provisions allowing compensation to be awarded for damage caused by wild animals. A practice has developed that each national park and reserve allocates a certain amount of its annual budget to compensate those who have suffered physical injury from wildlife or lost domestic animals to wildlife. No compensation is provided for the loss of or damage to crops. In all national parks and reserves where a buffer zone is in place, such compensation is provided under the Buffer Zone Programme. Since there is no legal requirement to provide compensation, the amounts awarded are often minimal.

Removal of cattle

The KTWR was created to protect a wild species that today escapes from the reserve and damages crops. While its domesticated relatives are not permitted to graze in the reserve, thousands do. Attempts have been made by reserve authorities to remove domestic cattle and buffalo from the KTWR. These efforts include rounding up domestic animals and auctioning them, granting permits to local residents to ‘extract’ animals, and permitting the army to shoot domestic buffalo. At least 167 buffalo have been shot inside the reserve since 2001 (Heinen and Kandel, 2004). News reports note that the drive to remove domestic animals from the reserve has been largely ineffective, while the shooting of domestic animals inside the reserve has created hardship among local communities and bred resentment against reserve authorities (Himalayan Times, 2004b; Kathmandu Post, 2003).

Punishment of ‘offenders’

Those caught in violation of the NPWCA—fishing in the reserve or collecting materials such as driftwood, fodder, timber, grass, stones and firewood—risk having their tools and collected materials confiscated by reserve staff and army personnel. Locals consider this treatment to be unfair harassment. In the past, villagers have been subjected to physical and verbal abuse, and claims have even been made of sexual violence against offenders. National human rights groups sent a letter to the army headquarters, demanding that such abuses be checked (Siwakoti, 2004). In 2002, all army posts around the reserve were in any case abandoned and staff relocated to the reserve headquarters. During the research carried out for this study, informants did not openly discuss any such mistreatment. Given the heightened insecurity in the area in response to the Maoist insurgency at the time, local residents were clearly reluctant to talk about the army.

Intra-community competition

A case of intra-community conflict over fishing resources was reported to the study team in 2003. That year, fishermen living on the western side of the reserve, who traditionally depend on fish as their primary source of livelihood, clashed with their Muslim neighbours over fishing. According to the

traditional fishermen, Muslims residing in the same area had recently taken up fishing, thereby becoming direct competitors. The conflict was not brought to the attention of local authorities since both groups were fishing illegally inside the reserve to begin with. No other communities interviewed for this study mentioned any such competition or violence in the area.

LOCAL RESPONSES

In the four decades since the Koshi Barrage and the KTWR came into existence, government measures in response to particular incidents of conflict in the area have for the most part been ad hoc, applied to groups in some areas while not applying to others. This has contributed to perceptions of inequity among communities residing in the study area.

A series of commissions has to date been unable to resolve disputes over compensation for the loss of rights to land. The single government response to conflict that has been generally successful is the one that provides local communities and individuals with certain soft rights to resources on which their livelihoods depend—the creation of the KTWR buffer zone.

Alternative sources of livelihood

Rather than continue in conflict with the reserve, communities and individuals have in many cases adapted their livelihoods to compensate for the loss of access to resources. Residents of the Koshi Tappu area have adapted to restrictions on resource access and use by turning to livelihood options which they consider to be less desirable. Many fishers, for example, have been forced to abandon their traditional lifestyle and instead turn to manual labour (Kathmandu Post, 2004a) as a result of fishing restrictions.

Land commissions

The government has set up 12 successive national commissions to look into the issue of compensation for those displaced by the creation of the KTWR. A new committee was formed in 2004 to allocate more land to households that were able to prove they had received no compensation (Pandey, 2004). Families who were evicted but are unable to offer legal proof of their tenure are not considered eligible to file claims for compensation.

In response to local communities' conflict with reserve authorities and continuing dissatisfaction over the absence of compensation for land appropriated for the barrage, an NGO, the Koshi Sarokar Samuha (Koshi Concern Group), was formed to assist locals in finding solutions to key issues. Registered in the late 1990s with the district administration office in Saptari, the NGO's main objectives were to build a coalition of farmers affected by the reserve and Koshi Barrage, to seek compensation for those rendered landless, and to ensure that local concerns were addressed appropriately. In 2001, the organisation was banned on the grounds that it was allied to the Maoist insurgency. Members of the NGO argued that only their past president was a Maoist. In 2002, they formed a new organisation, the Koshi Pidit Sangh (Koshi Victims Association).

Buffer zone

In order to resolve park-people conflict, Nepal has in recent years been shifting from a centralised, preservation-oriented approach to a more 'people-oriented' approach (Mehta and Kellert, 1996), and the creation of buffer zones is one of the most popular regimes in practice (Christie, 2003). Authorities have realised that strict regulations prohibiting the use of resources in protected areas surrounded by a dense human population is not feasible.

In the KTWR, the purpose of permitting people to harvest thatch grass for a certain period, and of limiting that permission to those who live in the buffer zone, is to ameliorate park-people conflict. Although users committees established in the buffer zone provide no more than soft rights for local

communities and individuals to access and use wetland resources, even soft rights are preferable to no access rights at all.

Local perceptions

As a recent study of local attitudes towards the KTWR indicates, the right to access a resource that contributes to livelihood security is a determining factor in creating positive attitudes toward conservation (Llam, 2004). Villagers with permission to collect thatch grass and fuel wood, or those who derive part of their livelihood from the reserve in some other way, expressed a favourable opinion of the reserve.

This study of local perceptions also found that while villagers were interested in the potential of the KTWR for tourism, only 2 per cent of them believed that the reserve would offer job opportunities. Crop damage by wildlife was the principal reason for unfavourable opinions of the reserve, followed by restrictions on resource use, discontent with penalties for resource use, and dissatisfaction with the performance of reserve staff and the military (Llam, 2004).

Although the 2004 study suggests that local support for the reserve has grown in recent years, many residents of the area continue to favour the idea of abolishing the reserve altogether. In 2003, a former member of parliament whose constituency includes a part of the buffer zone, was observed canvassing for support. His stand on the KTWR was that, if returned to power, he would lobby for the abolition of the reserve. Local audiences received this pronouncement with much enthusiasm. Not surprisingly, the question of compensation for land acquired for the KTWR was also a major political issue during the 1999 general elections. But while politicians vow to resolve this issue, to date such promises have been forgotten after the elections (Kathmandu Post, 1999).

SYNTHESIS AND RECOMMENDATIONS

The 40-year conflict over resource rights in the Koshi Tappu area is often characterised as a 'parks vs. people' issue. In fact, the problems that continue today originated in disputes over compensation for land appropriated for the Koshi Barrage in the 1950s and 1960s. These disputes were aggravated by similar complaints related to compensation for land appropriated to create the KTWR in the 1970s and remain largely unresolved. Recent causes of discontent have focused on 'parks vs. people' issues including the killing or forcible removal of domestic animals as well as the damage done by feral cattle that live inside the reserve and, along with the wild buffalo that the reserve was created to protect, range outside the boundaries of the reserve and destroy crops.

Each component of this chronic conflict that impacts the livelihoods of local inhabitants is fundamentally an issue of rights—rights to land and resources that are either denied or restricted. The construction of the Koshi Barrage, the subsequent creation of the KTWR, and the consequent restrictions on access to resources in the vicinity of the barrage and inside the reserve have created hardship, especially for the poorest communities, and fuelled conflict between reserve authorities and locals. Restrictions on resource use have also contributed to intra-community conflict. Given the large percentage of people in the area with minimal or no land holdings, restricting the rights of residents to engage in activities on which their livelihoods depend, such as fishing and the collection and sale of wetland products, makes livelihoods insecure, especially where options for other means to secure a living are limited.

The structural sources of this insecurity and conflict are the legal regimes that allocate rights and determine the degree to which these rights are secure. Particularly significant for the wetland-dependent communities in the Koshi Tappu area is the fact that there is no wetlands-specific legislation and no basis for communal rights in wetlands as such. Sectoral laws do provide for communal rights to use water and forest products, and to share in the management of protected areas and the benefits derived from them. There are, however, inconsistencies among these laws, and between sectoral laws and local government laws and regulations which limit the effectiveness of communal rights regimes. In the Koshi Tappu area, the issues are the quality and security of the resource rights that are available, and equity in the application of rights regimes.

Inequity—whether real or perceived—in administering rights regimes is the principal trigger for insecurity. The original, and ongoing, disputes in the area arose from controversy over compensation for land appropriated first for the barrage and then for the reserve, coupled with the government's inability to resolve the issue even after repeated attempts and the lack of transparency in this decades-long process.

The use or abuse of the discretionary powers of reserve authorities, particularly in allowing or denying access to resources and penalising violators, is another trigger for insecurity. Although grazing and watering domestic animals inside the reserve is prohibited, the warden has discretion to permit these activities. Rights have been selectively granted to some individuals and communities, while others are penalised. Communities that depend on the Koshi River for fishing do not enjoy the same level of discretionary access to the river and wetlands inside the reserve that is available to some farming and herding communities. A clash of perceived entitlements and the lack of accountability trigger insecurity and conflict when local communities and individuals observe reserve staff and members of the military using resources from the reserve to which their own access is restricted. There is great potential for applying discretionary powers in positive ways that contribute to securing the livelihoods of local people and reduce hardship caused by restricted access to resources, and this has been done in many cases. But instances of the abuse of these powers have created an overriding perception of inequity that is difficult to overcome and which, as long as it persists, will continue to provide the seeds for conflict.

Since 2002, the lack of locally elected representatives has undermined the ability of communities to hold the government accountable for its actions. The end to the decade-long Maoist insurgency, the drafting of a new constitution, and the focus during the post-conflict period on developing mechanisms for government and civil society to resolve conflicts without resorting to violence, is creating in Nepal an especially positive environment in which to address the sources of livelihood insecurity and related conflicts.

As the government engages with citizens to rebuild trust, government institutions and civil society organisations will be collaborating to a degree never before experienced in the country. The processes initiated to draft the constitution, not to mention the contents of the constitution itself, may be expected to provide the basis for reviewing resource rights regimes, resolving their inconsistencies, and eliminating inequities in both the substance of regimes and their application.

Post-conflict processes provide an opportunity to introduce guarantees of public participation into the constitution, and to integrate mechanisms for participation into law and practice. It has been argued that unless the poor have some measure of political power, even the law is not 'on their side'. Poor people understand that environmental issues are often not legal problems but political problems, and that in such cases political means are required to solve them (Cole, 1992). These observations are equally relevant with respect to rights to natural resources and the sharing of benefits arising from the use of those resources. Communities residing in the Koshi Tappu area, particularly in the vicinity of the Koshi Barrage, KTWR and buffer zone, are by and large ill-informed about laws that determine or affect their rights to access and use natural resources.

The new constitution should guarantee the fundamental rights of all citizens to have made available to them information about decisions which are likely to have an impact on the environment and in particular on natural resources on which their livelihoods depend, and to participate meaningfully in the process of taking those decisions. In this context, 'decisions' may include the process of developing policies, laws and regulations, and of planning for and implementing programmes and specific activities. The new constitution should also guarantee access to justice for citizens seeking to defend their rights to information, to participate in decision-making, and to access, use, and share in the benefits derived from natural resources.

Legislation governing natural resource use and tenure—including the LSGA, Forest Act, Water Resources Act, NPWCA, and their regulations in particular—should be reviewed in light of the new constitution and amended, to bring the laws into compliance with constitutional provisions and to eliminate the inconsistencies among them, clarifying resource rights and creating a transparent framework within which citizens can exercise and defend those rights. These laws should at a minimum include mutually consistent provisions that require reasoned decisions whenever an authority's discretionary power is used, provide for various types of natural resource users groups to cooperate and establish structures for doing so, and create cooperative mechanisms for conflict resolution. Provisions on compensation in laws governing rights to natural resources and legislation related to land acquisition should be made consistent, providing for economic valuation of resources and the rights to them, and should require full compensation based on valuation and/or market prices when land is acquired or resource rights restricted for development and conservation purposes. Direct compensation for damage caused by protected species of wild animals should also be provided through a fair and transparent system.

The NPWCA is in need of even more fundamental reform. Being 20 years older than other laws governing resource rights, and reflecting the approach to protected areas that was current at that time, it is based on the principle of excluding local people from protected areas and restricting or eliminating their traditional use rights. The NPWCA should be amended to focus on conservation and collaborative management rather than exclusively on protection and preservation (Belbase and Thapa, 2004).

Concurrently with the processes to develop the constitution, and to review and amend legislation, ongoing conservation and development programmes as well as projects currently in the pipeline should be evaluated to see whether and how they address the issues of resource rights and livelihood security. This should be done in the context of the country's Poverty Reduction Strategy and Nepal's plan for achieving the Millennium Development Goals.

The processes of drafting and adopting the new constitution, and of bringing existing laws and programmes into compliance with it, will take time. In the interim, steps that require minimal financial investment can be taken within the framework of existing mechanisms to address some of the factors contributing to livelihood insecurity and conflict in the Koshi Tappu area.

The various types of users groups that exist in the study area already provide opportunities for people to participate in making decisions that affect their livelihoods and rights. An effort, possibly initiated by the KTWR warden, could be made to create an informal mechanism for coordination among users groups, the Buffer Zone Management Council, Koshi Project officers and the authorities of VDCs in the Koshi Tappu area to ensure that issues of access to resources are handled consistently.

The coordination mechanism should ensure that the poorest and most marginalised individuals and communities are represented in users groups, have an equal opportunity to share benefits, and are equally accountable to other members of their respective users groups as well as the rest of the community. In addition to ensuring the participation of the poorest and most marginalised individuals and communities in users groups, specially targeted programmes will be needed to assist them in understanding their rights and options for securing their livelihoods. Such programmes should focus on tangible benefits to the individuals and communities involved, and avoid profile activities such as national workshops and glossy publications that in any case have limited effect on them.

One important function of this coordination mechanism could be conflict management. The mechanism could be an avenue to present issues of livelihood insecurity, caused by the inequitable application of regimes governing resource rights and access, to KTWR and VDC authorities in a comprehensive and constructive manner. If successful in the conflict management function, this role could be expanded to one of alternative dispute resolution that could eventually be recognised by the judicial system.

Since the formation of land commissions in the past has not been particularly effective, the coordination mechanism could also be tested as a fair and transparent channel for resolving conflict over compensation. The coordination mechanism could compile and verify past and current claims for compensation, evaluate them, and make recommendations on how such claims are to be settled.

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LEGISLATION

Aquatic Animals Protection Act 1961(2017 BS)
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Buffer Zone Management Guidelines 1999 (2055 BS)
Buffer Zone Management Regulations 1996 (2052 BS)
Constitution of the Kingdom of Nepal 1990 (2047 BS)
Electricity Act 1992 (2049 BS)
Forest Act 1993 (2049 BS)
Guthi Corporation Act 1976 (2033 BS)
Himalayan Parks Regulations 1979 (2036 BS)
Industrial Enterprises Act 1992 (2049 BS)
Land (Survey and Measurement) Act 1963 (2019 BS)
Land Acquisition Act 1962 (2018 BS) repealed by Land Acquisition Act 1977 (2034 BS)
Land Acquisition Act 1977 (2034 BS)
Land Act 1964 (2021 BS)
Local Self-Governance Act 1999 (2055 BS)
Mines and Minerals Act 1985 (2042 BS)
National Parks and Wildlife Conservation Act 1973 (2029 BS)
Public Roads Act 1974 (2031 BS)
Soil Conservation and Watershed Management Act 1982 (2039 BS)
Water Resources Act 1992 (2049 BS)
Wildlife Reserve Regulations 1977 (2034 BS) Amendment 1985 (2042 BS)

AGREEMENTS

Agreement Between the Government of India and the Government of Nepal on the Kosi Project. Signed at Kathmandu, 25 April 1954; in force upon signature.
Amended Agreement Between His Majesty’s Government of Nepal and the Government of India Concerning the Kosi Project. Signed at Kathmandu, 19 December 1966; in force 19 December 1966.

Livelihoods, Security and Conflict

DIR KOHISTAN, PAKISTAN

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ABBREVIATIONS

AI	Amnesty International
BOS	Bureau of Statistics
P&DD	Planning and Development Department
DG	Director General
ERNP	Environmental Rehabilitation in North-West Frontier Province and Punjab
ICG	International Crisis Group
IUCN	The World Conservation Union
NDCP	National Democratic Consultative Process
NWFP	North-West Frontier Province
PATA	Provincially Administered Tribal Area
UNDP	United Nations Development Programme
USDOS	US Department of State

GLOSSARY

Gujjar	nomadic herders
jirga	tribal council; adjudicating body of nominated village elders
khan	chief
Kohistani	original resident of Dir Kohistan
nawab	general title for ruler, used in the Indian subcontinent; conferred upon the ruler of Dir by the British in 1895
Shariah	Islamic law
serai	customary form of land grant; later established as permanent land entitlement
wesh	system of communal land ownership based on the periodic redistribution of landholdings; property remained under the control of the same tribe permanently, while within the tribe ownership would be rotated; wesh holdings were contiguous parcels of different types of land

INTRODUCTION

The district of Upper Dir is located at the confluence of the three highest mountain ranges in the world: the Karakoram, the Himalayas and the Hindukush. Historically, the region served as a bulwark against Russian expansionism during colonial rule. Today, the area is once again of strategic importance, this time from the perspective of political stability within Pakistan as well as the country's geopolitical interests abroad.

The region, part of Pakistan's North-West Frontier Province (NWFP), is among the most politically volatile in the country. Not infrequently, this instability has boiled over into open conflict with the state, the most notable example being a conflict over timber royalties in the 1970s which culminated in the aerial bombing of the valley by the Pakistan Air Force in 1976 (field interviews, 2003). The region is also known to serve as a conduit for the illicit trade in narcotics and weapons (Matthew, 2001).

Already one of the most conflict-prone areas in the country, recent decades have brought a dramatic rise in Islamist sentiment across the region (Shah, 2006). In the 1990s, local religious groups spearheaded a campaign to establish Shariah law and by 1994 gained almost complete control of the area (ICG, 2004).

The roots of this chronic instability lie in a host of factors including the political history of the area and the unusual administrative arrangements that have been in place here since Pakistan's independence in 1947. Upper Dir is one of the least developed districts in Pakistan. The local economy is based on subsistence agriculture, with poorly developed infrastructure and public services. The social structure is dominated by a traditional tribal culture, where castes and clans are known to participate in running feuds, and enmities have in some cases been kept alive over several generations (Jan, 2002).

This study attempts to explore one aspect of this complex picture: the interrelationship between resource rights, livelihood insecurity and conflict. The study takes the view that human security represents not only protection from violence but also the enhancement of life choices and improvement of the quality of life (UNDP 1994). Social, economic and environmental aspects are therefore implicit in the idea. Conflict in this paper is defined as a clash of interests which is not mediated. It occurs with positional differences over values and belief systems, self-determination and access to and distribution of resources and power (Ury et al., 1989; Walker and Daniels, 1997; Warner, 2001).

The study focuses on the impact of resource rights—or the lack of rights—on the livelihoods of natural resource-dependent individuals and communities. The term 'livelihood' is interpreted broadly to include the capabilities, material, and social resources and activities required to earn a living that is able both to withstand and recover from stresses and shocks, and maintain or enhance these capabilities and resources (Chambers and Conway, 1992). The discussion of livelihoods focuses on exploring the rights that resource-dependent people have for access to and control over forest resources. In the cases in which rights are customary, the study seeks to clarify the interaction between customary resource rights and the statutory rights regime.

Research for this study was conducted at the grassroots level and centres on the livelihood concerns of communities. The intent is to sensitise policy makers in the hope that they will engage with communities during the policy-making process, rather than formulating reactive policies in a relative vacuum. The study affirms the importance of promoting participatory mechanisms and structures aimed at ensuring that conservation contributes to sustainable livelihoods and that sustaining livelihoods also contributes to conserving the resources on which rural livelihoods depend.

METHODOLOGY

This study was carried out over a 20-month period, from May 2003 to December 2004. Preparatory research combined site visits with information obtained from secondary sources. Observational data were supplemented by information gathered from community focus group discussions, and interviews with policy makers, representatives of non-governmental organisations and staff of the Environmental Rehabilitation in North-West Frontier Province and Punjab (ERNP) project working in Dir Kohistan.

Stakeholder interviews were conducted in person, while focus group discussions were held separately with members of different ethnic communities, to minimise inter-ethnic discord. Participants were selected to represent a cross-section of that community. The Pathan-Gujjar mix did not present problems as the interests of both groups over royalty distribution were identical. Preliminary study findings were presented at a national workshop in Islamabad in December 2003. Subsequently, community elders participated in an August 2004 regional workshop in Kathmandu, where the draft study was presented.

DESCRIPTION OF THE STUDY AREA

The district of Upper Dir is spread over a reported area of 127,070 hectares (BOS, 2004). The area included in this study in turn covers some 75 per cent of Upper Dir (95,302.5 hectares), stretching from the village of Charot in the north to Rondesh in the south, and from Badgowai village in the east to Kato Awar in the west.

The study area includes the Dir Kohistan valley along with a number of converging valleys (Badgowai, Bela, Dhok Dara, Ganshal, Gawaldai, Jandrai, Junkai, Kumrat, Lamotai, Shandoor, Siasun and Sundrai). The Panjkora River, approximately 70 miles in length, bisects the main valley and is fed by perennial streams flowing through the converging valleys.

Fairly reliable development indicators based on government census data are available for the district as a whole, and apply more or less to the study area. But many sectors and activities with a direct relationship to the livelihoods of local communities are not documented by government statistics. In such cases, the only data available comes from one small valley, Dir Kohistan, situated in the extreme north of the study area, which was the subject of a long-term study carried out in the 1990s. Although it is not possible to extrapolate from this data statistical information for the entire study area, findings from the Dir Kohistan valley provide a snapshot of the conditions that might reasonably be assumed to exist elsewhere in the study area.

Situated in the extreme north of the study area, the Dir Kohistan valley covers an area of 16,702 hectares, bordering the districts of Chitral to the north and Swat to the east (ERNP, undated). With a total length of approximately 150 kilometres, the valley lies an elevation of between 1,400 and 2200 metres above sea level (ERNP, undated). Here, the climate is temperate with mild summers and harsh winters. Much of the valley is blanketed in snow from December to February, accounting for most of the 1,100 millimetres of annual precipitation in the area (ERNP, undated).

The Dir Kohistan valley is self contained, branching off to the east form the main Dir road before it reaches the town of Dir itself. The geographical boundaries of the valley extend well beyond the outlying villages. The northern-most village in the valley is Thal, although alpine pastures are situated further north and there are no permanent settlements in that area. Similarly, Sheringal marks the lower part of the valley but is not where the valley begins.

Three distinct vegetation types (oak forests, coniferous forests, and alpine pastures) characterise the valley ecosystem (Shakeel, 2002). Oak (*quercus ilex*) forests radiate upwards from the valley floor and terminate laterally in the mid-valley section. Small stands of chir pine (*Pinus roxburghii*) and isolated *chilghoza* (*pinus gerardiana*) trees are scattered among them. Mixed coniferous forests are found near the upper ridges of the mid-valley section. In the northern uplands, coniferous forests begin at the valley floor and spread up the valley slopes (Shakeel, 2002).

In the uplands, the predominant species are kail or blue pine (*pinus wallichiana*), silver fir (*abies pindrow*), *deodar* (*cedrus deodara*), *chilghoza* and spruce (*picea smithiana*). These forests also serve as a repository of non-timber forest products such as mushrooms and medicinal plants. The alpine pastures extend beyond the tree line to permanent snowfields and are dotted with fairly large freshwater lakes. Agricultural land consists of silt and sediment deposits along the valley bottom and alluvial fans and terraced encroachments in oak forests. At higher elevations, coniferous forests and pastures are converted for cultivation.

The Dir Kohistan valley is rich in biodiversity. The oak scrub habitat at lower altitudes is inhabited by a variety of wildlife including the *chakor* (partridge), wolf, monkey, red fox, common otter and porcupine, and favours the *markhor* (ungulate) in the summer. The higher altitude mixed coniferous habitat is home to the *chakor* partridge, koklas pheasant, monal pheasant, common otter, common leopard, black bear, wolf, monkey, red fox, flying squirrel, musk deer and porcupine. The snow leopard, brown bear, black bear, marmot, markhor, ibex, musk deer, monal pheasant, Himalayan snow cock and snow partridge populate the alpine pastures.

Although the conservation status of these species is not well documented, there are reports that some populations such as the markhor, snow leopard, musk deer, and pheasant have become endangered

as a result of habitat destruction and illegal hunting. A survey carried out by the wildlife department (Shakeel, 2002) referred to various illegal hunting methods adopted by the locals such as the use of dogs and decoys. Out of season hunting was common, reportedly the greatest risk to wildlife. The survey also confirmed the perception of decreasing wildlife populations.

In the Panjkora River, introduced trout varieties are under threat from illegal fishing, and habitat encroachment. According to anecdotal information provided by netters, trout catches are becoming smaller and more of the smaller, fast-breeding local varieties are being caught.

DEMOGRAPHICS AND ETHNIC COMPOSITION

According to the 1998 census, the population of Upper Dir stood at 576,000, with a density of 156 persons per square kilometre (BOS, 2004). The vast majority of the population resides in rural areas, with urban areas home to just under 4 per cent of the district's total population (BOS, 2004). The average household in the district consists of eight persons (BOS, 2004). The Dir Kohistan valley, meanwhile, is home to a population of 112,000, distributed among some 196 villages and 15,600 households (ERNP, undated).

Little or no information is available about the ethnic composition of the district as a whole or the study area in particular. But studies carried out in the Dir Kohistan valley suggest that three main ethnic groups—the Kohistanis, Pakhtuns and Gujjars—reside in that area. There, Kohistanis are thought to be in the majority, followed by the Pakhtuns and Gujjars (ERNP, undated).

Historical research suggests that Kohistanis are the original inhabitants of the valley (Rome, 2005). Making up between 40 and 50 per cent of the valley's present-day population, the Kohistanis lay hereditary claim to the valley's communal resources (coniferous and oak forests, rangelands and alpine pastures). The alignment of differentiated resource claims with ethnic divisions is a source of insecurity and gives rise to social tensions. The upper part of the valley, where competition over forest resources has most often been witnessed, has a predominantly Kohistani population.

Despite ethnic differences, local communities coalesce around activities that serve their common interests such as water supply and erosion control activities. Ethnic polarisation tends to occur over high-impact issues such as forest royalties, grazing and land disputes.

SOCIO-ECONOMIC INDICATORS

Upper Dir is one of the country's most poorly developed districts. Human development indicators show that Upper Dir ranks 21 out of 24 districts in the NWFP, and 82 out of 91 districts in Pakistan as a whole (Hussain, 2003).

Overall literacy in the district, at 21 per cent in 1998 (BOS, 2004), is less than half the national average of 46 per cent for 1999 (Hussain, 2003). The literacy rate for men (36 per cent) far exceeds literacy among women (6 per cent), and is substantially higher in urban areas (BOS, 2004). In 2003–04, just 729 primary schools were functioning in the district, only 213 of which were for girls (BOS, 2004). Middle schools are fewer still, at 62, with just 11 for girls. The numbers decline steadily as the level of education rises (35 high schools, 3 for girls; 6 higher-secondary schools, 1 for girls). There are no intermediate colleges and one degree college which does not admit women (BOS, 2004).

Health care coverage in the district is equally poor. Two hospitals, 10 dispensaries and less than 50 clinics and health centres served the population in 2003, with an average of 10,653 individuals per health care institution, and not a single registered private medical practitioner (BOS, 2004).

Infrastructure and communications development leave much to be desired, with no telephone connections or telegraph offices in 2002–03, 23 post offices and an average of 0.11 roads per kilometre of area (BOS, 2004). Separate figures are not available for electricity supply but a total of 639 villages in Upper Dir and Lower Dir combined are connected to the national grid (BOS, 2004).

Provisional estimates for 2002–03 show water supply in the district to cover 61 percent of the population, better than only three of the province's 24 districts (BOS, 2004). District-wise figures are not available for access to sanitation but cannot in any case be higher than the national average which, in the years 1990–96, stood at 30 per cent of the population (Hussain, 2003).

KEY LIVELIHOODS

The population of Upper Dir district is predominantly dependent on agriculture, with wage labour and subsistence harvesting of natural resources contributing to household income. Harvesting natural resources is not included in any of the categories defined in census data, perhaps since it is a supplementary activity rather than a full-time occupation. Men from the area are known to travel down-country as well as abroad in search of work but recent figures for migration are not available. Forest royalties contribute to the household income of some communities but these figures have not been tabulated systematically.

In the Dir Kohistan valley, subsistence is based on the simultaneous exploitation of a number of ecological niches and characteristically involves the coordination of various activities.

Agriculture and livestock

Of an estimated employed population of 72,560 in 2003–04, an overwhelming majority (66 per cent) is involved in agriculture, forestry, hunting and fishing (BOS, 2005). The agrarian-subsistence economy of the district is supported primarily by small landholdings. Natural resource-dependent communities must ensure an intricate balance between agriculture and herding, supplementing these activities with extraction of wood and non-wood products from the forests.

Although subsistence agriculture has long been the mainstay of livelihoods in the Dir Kohistan valley, group discussions held with local communities in 2003 revealed that in the previous three or four years, village communities, especially those residing in the mid- and upper-valley regions, had begun to cultivate cash crops such as onion and potato for sale in the market down-country (group discussions, 2003). Climatic conditions limit agricultural activity to one to two crops a year.

The valley's three predominant vegetation types, occurring at different elevations, correspond with specific agricultural practices. In the lower part of the valley, wheat, rice and maize are cultivated. Wheat and maize are grown on northern slopes in the mid-valley area. The upper portion of the valley is mono-cropped, producing either maize or potato. Vegetables are intercropped with the main crops in each zone both for domestic consumption as well as sale. The mid-valley area has good horticultural potential but is underutilised. Potato and onion, both of which are commercial crops, were introduced recently and thrive at the higher elevations, which has led to the clearing of forests and the conversion of grazing lands for such cultivation.

The topography of the area also lends itself to livestock-rearing activities. More than half of the valley area consists of pastures and rangelands. If oak forests where animals also graze are included, the area open to grazing becomes even larger.

Livestock rearing is an important economic activity in the valley, as a source of both meat and dairy products. Herding follows the cycle of water and pasture availability. Highland pastures are most productive during spring and summer and the herds migrate up so as not to interfere in agricultural activities. Animals are moved back down to the villages after the harvest, and graze in the oak forests and fields with supplements of dry fodder.

Livestock-rearing is not listed as a separate employment category in census records, possibly because few communities in the district, apart from nomadic herders, survive exclusively by rearing animals. But 1996 livestock census figures for Upper Dir and Lower Dir combined show that some 1,178,805 domestic animals (including cattle, buffalo, goats and sheep) were reared in these two districts, in addition to 1,982,594 poultry (BOS/P&DD, undated). In the Dir Kohistan valley, each household owns and average of three to five animals.

Livestock owners fall into three categories: land-owning households who rear buffalo and cattle; resident landless tenants or sharecroppers, who own cattle, sheep and goats, and practise vertical transhumance, stall-feeding herds in winter and taking them to the pastures during the spring–autumn cycle; and migrant herders consisting of Gujjars (cattle herders) and Ajars (goat and sheep owners).

Except in the case of landowners who stall-feed their animals and release their livestock into oak forests and fallow fields during winter, grazing in the valley generally follows an annual cycle in tune with the seasons. The grazing season begins in the spring, with migrant and transhumant herds moving through the oak forests where they feed mostly on leaf fodder and thin grass. During the sowing season, animals begin moving up into grazing patches located within coniferous forest. After a short holding period, when the snow is melting, they transit into alpine and sub-alpine pastures. The animals remain here until September, when the reverse movement begins, ending with herders moving out of the valley into low-altitude pastures.

Harvesting natural resources

Forests serve as a source of fuel for cooking, heating and lighting, and provide timber for the construction of homes, bridges and viaducts. Timber is also used to manufacture furniture, and as raw material for making tools and other household items. For some groups and communities, forests provide much-needed additional income in the form of forest royalties.

Non-timber forest products such as resins, and medicinal roots and herbs are harvested. The forests are also a source of sustenance, with wild fruit, vegetables, nuts and edible mushrooms harvested for both sale and domestic consumption. While the rare wild mushrooms found in these forests have great commercial potential, the benefits at present accrue mostly to middlemen. Communities in the valley supplement their diet with fish, mainly trout and *swati*, caught in the Panjkora River.

Wage labour

About 40 per cent of the district's employed population performs wage labour (BOS, 2004). The largest category in this group is construction work (10 per cent), followed by community, social and personal service (9 per cent). The remaining workers of the district are employed in other occupations such as wholesale and retail trade and restaurants (8 per cent), transport, storage and communications (4 per cent), and manufacturing (3 per cent), with a small number of individuals employed in sectors such as electricity, gas and water; finance and insurance; and activities "not adequately defined" (BOS, 2004).

Men of working age also migrate in search of work, both down-country and abroad (mostly to the Middle East). Recent data on out-migration is not available but figures from the 1981 census indicate that between 1971 and 1981, some 11,600 individuals travelled abroad from the area that now constitutes the two districts of Upper Dir and Lower Dir (BOS/P&DD, undated).

This figure is likely to have risen in recent years as economic hardship in the area has grown. Selective village profile data collected for the Dir Kohistan valley supports this view, showing that foreign remittances comprise a large proportion of village income in the sub-valleys of Dhok Dara (20 per cent), Gawaldai (10 per cent) and Patrak (10 per cent) (ERNP, undated). The Pakhtuns and Gujjars are the communities most likely to migrate in search of work. Seasonal labour is also an important source of income although specific data about this activity is not available.

LAND USE

Statistics for land conversion in the district as a whole are not available. In the Dir Kohistan valley, the population has surpassed the carrying capacity of the land. Agricultural activity alone is no longer sufficient to support the valley's households, forcing residents to convert forest and grazing lands to agricultural use (ERNP, 1992). Since the land is not ideally suited to agriculture, large tracts are converted to compensate for low productivity.

Fields that have been carved out of forests are mostly unlevelled and downward sloping, prone to severe sheet and gully erosion. Poorly terraced tracts on upland slopes, and the loss of vegetative cover, also lead to high erosion and erosivity. This erosion, and the low productivity of the land, creates a continuous cycle of clearing and abandoning fields. Most of the rangeland and pasture conversion has been triggered by the introduction of potato and onion crops. While the effects on soil quality of the increasing use of artificial fertiliser are not documented, there is a risk of further productivity loss with the added danger of run-off from farms contaminating the Panjkora river.

Logging, forest fires and heavy grazing in forests and overgrazing of rangelands are major threats, and degradation is severe in most parts Dir Kohistan (de Vries et al, undated).

Agriculture

The total cultivated area in Upper Dir for the year 2002–03 covered 41,750 hectares, accounting for approximately 33 per cent of the district's reported area (BOS, 2004). Culturable waste, according to figures for 1999–2000, makes up 0.51 per cent (650 hectares) of the reported area, while 4 per cent (5,158 hectares) is "not available" for cultivation (BOS/P&DD, undated).

A little more than half (54 per cent) of cultivated land in the district is irrigated, with population density almost twice as high (29 persons per hectare) in irrigated land than on unirrigated land (15 per hectare) (BOS, 2004). Land use intensity in the district is as high as 98 per cent (BOS, 2004).

Land in the Dir Kohistan valley is under severe pressure from agriculture with some 13,727 hectares under cultivation, comprising 82 per cent of the valley area (ERNP, undated). Agricultural land in the form of terraces on mountain slopes is rain-fed and is the result of clearing forests, a practice known locally as *karin*.

Forest

Forests in Upper Dir are spread over 79,510 hectares, covering nearly 63 per cent of the district's reported area in 2002–03 (BOS, 2004). Figures for 1999–2000 also show forest cover to be 63 per cent (79,520 hectares), which is more or less the same as for 2002–03 (BOS/P&DD, undated; BOS, 2004). In 1999–2000, moreover, forest areas are included in the category of "uncultivated area" (BOS/P&DD, undated). This suggests that on paper at least forest areas are not being converted for any other use. This is somewhat misleading since information gathered in the valley of Dir Kohistan suggests forests are under pressure from a variety of fronts including the ever-increasing need for farmland.

Coniferous and broad-leaved species form the majority of forests in the Dir Kohistan valley. Here, according to some estimates, 33 per cent of land is under coniferous forests and 3 per cent under oak forests (ERNP, 1992). These areas are being depleted as a result of land use changes and logging. The subsistence needs of local communities also play a part in the process, especially since wood is the only source of fuel for cooking, heating and lighting. Micro-hydel project interventions have mitigated the problem to some extent, especially with the recent community uptake of these low cost schemes, with the result that the most severe damage to forested areas is caused by the land use changes and activities such as grazing.

Coniferous forests are more severely affected by pressure from grazing, where over-grazing damages new saplings and induces weed growth. This prevents conifer seeds from reaching the soil and hinders regeneration. Oak forests are also degraded, primarily as a result of grazing pressure, but to a lesser degree since as their proximity to the villages ensures some protection. The major portion of these forests occur on lower slopes, are owned by the Kohistanis, and serve as a source of timber, fuel wood and fodder.

In general, the existing environment is more conducive to extraction than sustainable resource use. Today, few pristine forest stands remain in the area (ERNP, 1992). This is all the more disheartening since in some cases judicious use could serve to enhance the ability of local communities to derive greater livelihood benefits from the forests. In the valley area, for example, it is reported that locals cut

down commercially valuable cedar (*Cedrus deodara*, known locally as diyar) for the resinous part at the base of the trunk, which is a good lighting source because it burns slowly.

Rangeland and pasture

According to 1995 estimates, some 48 per cent of land in the province as a whole was classified as grazing land (Aumeeruddy-Thomas, 2004). No reliable statistics are available for the area of rangeland and pasture in the district. Figures from 1992–97 for Upper Dir and Lower Dir combined show that wasteland and rangeland together cover 352,077 hectares (DG Audit, 2002). This figure does not tally with recent statistics according to which the total reported area of both districts combined is 269,210 hectares (BOS, 2004) but does suggest that a large portion of land in these districts is used as rangeland.

In the Dir Kohistan valley, meanwhile, rangeland including alpine pasture is thought to cover some 56 per cent of the land area (ERNP, 1992). Here, pastures are located at different elevations. Three main types of pastures are to be found: oak forest, cleared grazing areas in coniferous forests and alpine or sub-alpine pastures. Pasture and rangeland is being degraded by over-grazing as well as through conversion for agricultural use. The changing composition of grazing herds (more than 50 per cent of herds now consist of goats that are voracious feeders) adds to the problem. Over-grazing has led to the replacement of grass and scrub with non-palatable seasonal shrubs and forbs. Livestock also competes with wild ungulates for rangeland resources (ERNP, 1992).

GOVERNANCE

Upper Dir is counted both as a district in the NWFP as well as a Provincially Administered Tribal Area (PATA). On an administrative level, PATAs are today no different from other districts in the province. The local government system introduced across the country in 2001 has also been extended to the PATA and administrative matters at the local level are handled by a hierarchy of civil servants. But the legal regime in force in the province does not automatically apply to the PATA. Rather, the provincial governor is required to issue a specific notification extending laws to the tribal areas. In addition, the governor may also issue special regulations, with the approval of the president, for the governance of PATAs. The Pakistan Penal Code and the Criminal Procedure Code have been extended to the PATAs (Shah, 2006).

The unique status of the PATAs dates back to 1947, when the British colonial administration quit India and the independent state of Pakistan was created. At that time, the area that today constitutes the districts of Upper Dir and Lower Dir was part of the princely state of Dir, which acceded to Pakistan. For the next two decades, the area enjoyed semi-autonomous status under the authority of a nawab.

In 1969, Dir State was brought under the administrative control of the provincial government of what was then West Pakistan. Under the Dir, Chitral and Swat (Amendment) Regulation 1969, administration of these states was assumed by the provincial government, which designated the former princely states to be districts and included them in what was then the Malakand Division, with a commissioner and deputy commissioner appointed by the provincial government to administer the area (Ayub, 1989; Shah, 2006). The office of the deputy commissioner was gradually awarded executive and judicial functions in addition administrative powers (AI, 2005).

When the province of West Pakistan was itself dissolved in 1970, the district of Dir was included in the newly-designated North-West Frontier Province. Through a number of regulations starting in 1971, courts were set up in the district and laws in force in other parts of the province were extended piecemeal to the area (Shah, 2006).

In 1973, under the new Constitution of Pakistan, Dir along with a number of former princely states was designated a PATA, introducing to the district certain administrative arrangements that remain in place to this day.

The courts set up in the early 1970s continued to function in the PATA until 1975 (AI, 2005). In that year, governance in Dir was placed under the framework of what became known as the ‘PATA

Regulations'—the Provincially Administered Tribal Areas Criminal Law (Special Provisions) Regulation 1975 and the Provincially Administered Tribal Areas Civil Procedure (Special Provisions) Regulation 1975—under which separate civil and criminal procedures were put in place, distinct from the procedures applicable elsewhere in the country (Ayub, 1989). The PATA Regulations allowed for the creation of tribunals which in 1976 were re-named 'jirgas' and awarded enhanced functions (AI, 2005). Although these jirgas were to adjudicate criminal and civil matters, they played an advisory role, submitting their recommendations to the deputy commissioner who was alone empowered to issue judicial decisions (AI, 2005).

This arrangement remained in place more or less unaltered until 1990, when the Peshawar High Court declared the PATA Regulations to be unconstitutional (AI, 2005). The judgment was challenged by the provincial government before the Supreme Court, which upheld the High Court decision and dismissed the appeals in 1994 (AI, 2005; Shah, 2006).

This verdict was followed by growing political unrest in the area, with calls from Islamist political groups such as the Tehrik-e-Nifaz-e-Shariah-e-Muhammadi (Movement for the enforcement of the Shariah) for the introduction of Islamic Shariah law (Shah, 2006). The legal and judicial vacuum created by the Supreme Court ruling was filled in 1994, when the Nifaz-i-Nizam-i-Shariah Regulation 1994 was passed, allowing for the creating of a quasi-Islamic system (AI, 2005; Dawn, 2004). In 1998, this law was replaced by the Nizam-e-Adal Regulations 1999, which changed the designations of judges in PATA, adopting Islamic nomenclature (Shah, 2006). The 1999 Regulations also made it obligatory for the qazi (judge) to consult an Islamic legal advisor before issuing any ruling. In substance, the Pakistan Penal Code and the Code of Criminal Procedure remained applicable (AI, 2005).

It was also around this time that the single district of Dir was itself bifurcated. In 1996, the two new districts of Upper Dir and Lower Dir were created (Shah, 2006). The town of Dir serves as the district administrative headquarters of Upper Dir, while Lower Dir is administered from the town of Timergarah (Shah, 2006).

Today, Upper Dir is counted both as a district of the NWFP as well as a PATA. This creates unique obstacles for efficient governance, primarily because laws applicable elsewhere in the province do not necessarily apply to the PATA.

The people of the PATA elect their public representatives through general elections, as do citizens elsewhere in Pakistan. These elected representatives participate in legislative activities in the national and provincial assembles, but the laws they help to frame do not come into force automatically in their own constituencies (Gillett, 2001; NDCP, c 2001). This incongruity has created legal complications both for ordinary citizens as well as the government machinery (NDCP, c 2001).

Traditional dispute resolution—the jirga

On 29 April 2006, in the remote valley of Nehag Dara in Upper Dir, a jirga (tribal council) declared that anyone filing a police report against the practice of 'honour killing' would themselves be put to death (Jan, 2006; Shah, 2006). This move was in blatant violation of Pakistani law, under which honour killing—a pre-Islamic tribal custom according to which a woman bringing 'dishonour' to her family may be put to death—is illegal. More than 4,000 people, including local government union council representatives, reportedly attended this jirga. Along with the decision supporting honour killing, the jirga ruled that no action would be taken against anyone who killed a robber. It also announced its intention to defend "oppressed persons" taking shelter in the area (Jan, 2006). Six months later, on October 29, another jirga, this time in Bajaur Agency, declared terrorism suspects Osama Bin Laden and Mullah Omar to be "heroes of the Muslim world" (M. Khan, 2006).

Incidents such as these serve to bolster the common perception of the jirga as a bastion of religious extremism, endorsing a social conservatism that even by Pakistani standards is intolerable. But the jirga has also played an important and positive role in the lives of tribal and rural communities. In many such communities, inter- and intra-community conflict has been mediated successfully by a jirga. On an individual level, those without access to state judicial mechanisms, particularly in remote rural areas, have turned to the jirga for justice.

The traditional jirga system dates back to pre-Islamic times. As a consultative assembly comprised of community elders, its collective decision was binding. Traditionally, the emphasis of the jirga was on maintaining peace (*lamo aman*). Thus, in disputes involving women, property or violence, the risk of factional discord and political disintegration had a tempering influence on jirga decisions. Among certain tribes, community leaders were known to expel those found guilty of murder, and victims who chose to accept compensation rather than exacting revenge were lauded by their peers (Keiser, c 2002). Even today, in many tribal cultures, *lamo aman* is a respected value and it is considered a compliment to be referred to as *aman pasand* (peace loving) (Keiser, c 2002). But the role of the jirga has undergone a metamorphosis, reflecting the changing political, economic and cultural dynamics of the times.

The early history of the jirga system in the study area is not well-documented. Originally, the jirga drew its authority from the people. Around the time of British colonial consolidation in India, however, a hybrid form of jirga began to emerge. Instead of deriving its authority from the people, the new type of jirga began to follow the dictates of the ruler. Eventually, the jirga evolved from being a community-rooted, egalitarian institution to a tool which the ruler used to consolidate power.

Following Independence, the jirga in Pakistan began to regain its legitimacy in many parts of the NWFP, partly because of the unique administrative arrangements that prevailed in many parts of the province.

The present-day jirga is an amalgam of the old and the new. On property and resource rights issues, it continues to adjudicate as it did, seeking conciliation between feuding individuals, villages or clans. Invariably, such differences are resolved amicably. In interpersonal, or inter-familial matters, however, the jirga today embodies a mixture of tribal customs and traditions that in many cases conflicts with Pakistan civil and criminal law. Even so, for many individuals, the jirga remains a viable option for conflict resolution. In fact, in many areas it is beginning to support and even supplant the civil courts.

RESOURCE RIGHTS REGIMES

Resource rights in the study area are governed by a statutory regime that focuses on policing and makes few guaranteed provisions to secure the access and use rights of communities. A rich and finely nuanced body of customary law once held sway in the area, based or varying degrees of communal ownership and shared access for all members of the community. Such arrangements are, however, little more than a matter of historical record since these customary rights began to be whittled away more than a century ago, when a relatively egalitarian tribal structure was supplanted by a political order centred around a single ruler, the nawab.

Under the nawabs, the system of patronage that came to determine rights over land, and thereby over the resources on that land, in many cases curtailed the customary entitlements of many communities in favour of groups perceived to be outsiders. These arrangements also vested in the nawab de facto control over Dir State's rich forest resources.

When Dir State was brought under the administrative control of the provincial government in 1969, this de facto control over forest resources was not relinquished. Rather, just two years later, government control over forest resources was given legal cover. By means of a notification issued on 15 September 1971, Dir's forests were declared to be government property (Shah, 2006). Local rightsholders were to receive a 15 per cent share of the income derived from timber sales. Much of the uncertainty today surrounding the issue of royalties and entitlements dates back to that era.

STATUTORY RIGHTS

One of the greatest difficulties in securing the 'hard' rights of communities is the fact that the statutory regime governing natural resources focuses on the management and control of the resource itself rather than the rights of those who depend on the resource for their livelihoods. While welcome provisions have been made in more recent legislation governing forests in the province to include communities in both management and decision-making, these rights are not guaranteed by law and are granted at the discretion of officials. In other sectors, the law fails to achieve even that much, focusing almost entirely on restrictions and regulation.

A related problem arises from this 'management approach'. Since the statutory regime for the most part focuses on the rights and responsibilities of the government, certain types of resources are not provided statutory cover. This is the case with rangelands and pasture, which are key to the survival of many communities who either depend wholly or in part on livestock-rearing, but which are perhaps not a profitable resource for the government. As such there is not a single law anywhere in the country that provides specifically for the management or conservation of range resources.

Problems also arise in the case of the study area which is designated as a PATA. No provincial or national law applies to the area until it is extended by order of the provincial governor, making it difficult in many cases to determine the exact status of a law with respect to its application in the study area.

Forests

Rights to forest resources in the province are governed by the NWFP Forest Ordinance 2002, which has been extended to the PATA. The basic framework for forest management in the Forest Ordinance is derived from the Forest Act 1927, which it replaced, but new provisions are included to provide certain rights to local communities.

The Forest Ordinance creates two broad categories of rights. A "right holder" is defined as an individual without proprietary rights over forests, but who has "rights or privileges over reserved forests, protected forests [and] wasteland" under the record of rights admitted at the time of land settlement, or who has subsequently been recognised as a rightsholder by the government (section 2(34)). An "interested party", meanwhile, is defined as "any person having a bona fide interest in the sustainable development of the forest and natural resources", including forest officials, landowners,

rightsholders, “local beneficiaries and users”, and a range of community- and village-based organisations (section 2(24)).

Five types of forest are classified under the Forest Ordinance, based on management arrangements as well as use rights. Forested areas or wasteland that are government property, or over which the government exercises “proprietary rights”, may be declared reserved forests (section 4). A forest settlement board hears and settles individual claims over such forests (sections 6–8) but once the hearings are concluded, all individual rights in reserved forests are extinguished (section 11). Such forests are strictly controlled by the government and few use rights are permitted (section 26), except to those who have secured their rights through the settlement board. The government may choose to manage reserved forests or may hand over management to village communities. In the latter case, the forests so managed are called village forests (section 28). All of the use restrictions applicable to reserved forests generally apply to village forests as well.

The government may also declare forests or wasteland over which it has proprietary rights, and which are not included in reserved forest, to be protected (section 29). Individual claims in such forests are also to be settled, either by means of survey and settlement records or in another manner that the government deems “appropriate”. The government has wide powers in a protected forest to reserve specific trees or classes of trees, and to close a forest or part for a forest for up to 30 years (section 30). All rights in closed forest are suspended. Prohibitions similar to those applicable in reserved forest are enforced in protected forest (section 33) but management responsibilities lie exclusively with forest officials (section 29(3)).

A guzara forest is defined as a “protected wasteland” that forms part of a village and was set aside at the time of survey and settlement to meet the requirements of landowners and rightsholders, or may be so set aside for the same purpose at a later date by the government (section 2(23)). Guzara forests are owned collectively by landowners in the adjacent village, who may use free of charge for domestic or agricultural purposes trees and forest produce from such areas (section 35). Landowners may sell timber or forest produce with the permission of forest officials, under such conditions as may be prescribed, and must pay the government various surcharges and seigniorage fees.

Management responsibilities for any protected forest, reserved forest or guzara forest may be assigned to village-based organisations or committees (section 101). In such forests, known as community forest, the groups concerned may be permitted to exercise some or all of the government’s rights at the discretion of forest officials. The Forest Ordinance allows for joint forest management but the committees that may be established for this purpose operate at the discretion of forest officers (section 102). The forest department may also lease reserved, protected, guzara or “other” forests for specified purposes, including forest plantation, agro-forestry and social forestry schemes (section 105).

The Forest Ordinance provides for community participation both in management as well as decision-making but these provisions are watered down by qualifications and provisos in most cases. For example, all government-owned forests are to be managed in accordance with forest management plans that are meant to be prepared with the involvement of local communities and other interested parties, but only “as may be possible” (section 98(2)). Similarly, commercial timber harvesting is permitted only in accordance with approved management plans or regeneration schemes which ensure participation of communities, including women, “as far as possible or practicable” (100(2)). The government is to “facilitate” participation of village communities and interested parties in the sustainable development of forests and wastelands, and “will make efforts” to encourage women to participate in the management process (section 99(3)). These are possibilities rather than guarantees.

Despite the provisions related to community management, the focus of the Forest Ordinance remains on centralised control. All provisions for community participation in forest management are weakened by the wide powers that have been awarded to various forest officials to determine the extent or even the possibility of such participation.

Other provincial laws aim to increase the level of participation in forest management. The NWFP Forestry Commission Act 1999, for example, establishes a Forestry Roundtable comprised of representatives of “the major stake-holders in the sector” (section 5). The Roundtable recommends candidates to sit on a Forestry Commission (section 3) and plays an advisory role once the

Commission is established. The Roundtable works as a "think-tank" and resolves "major conflicts" among stakeholders that are likely to hamper forest management (section 6).

Use rights in protected forests are further defined in the NWFP Management of Protected Forests Rules 1975.[1] Trees cannot be felled or removed from the forests to which these rules apply, except with written permission from forest officials (section 3). Trees may be granted free of cost for "domestic needs" to landowners, rightsholders and "other local inhabitants entitled to this privilege", subject to availability and up to the limit specified in the forest department's sanctioned working plans (section 4). Requests for grants must be made in writing to the area range officer (section 5), who forwards the application to the local revenue official for verification (section 6). In the case of applications submitted by "non-residents", the revenue official is required to obtain the agreement of a jirga of landowners or rightsholders (section 6). Trees granted in this manner must be between 24 and 30 inches in diameter, and must stand more than 300 feet away from the outer boundaries of the forest (section 9). This allocation is subject to "silvicultural availability". Those to whom trees are granted under these provisions are required to plant five new trees and tend to them (section 15).

In addition to personal use, "regular commercial sale[s]" are also to be conducted in accordance with sanctioned working plans (section 19). In the case of certain areas, including Dir, 15 per cent of the proceeds from commercial sales is distributed amongst rightsholders (section 19(1)).[2] This amount is paid to administrative officials who are responsible for distributing the funds amongst rightsholders (section 19(2)).

Separate restrictions are placed on the transport of timber from or into reserved, protected and guzara forests. The NWFP Forest Produce Transport Rules 1975[3] allow forest officials to set up check posts to monitor the movement of timber (section 9) and award forest officials wide powers to stop and examine consignments in transit (section 11). Transport may not be carried out between the hours of sunset and sunrise (section 4), and transport permits are required in all cases except where timber is being taken for "domestic requirements" (section 3). The Forest Ordinance also allows the government to frame rules to regulate the transport of timber and forest produce (Forest Ordinance, section 58).

The government's commercial extraction of forest resources is managed by the Forest Development Corporation, established under the NWFP Forest Development Corporation Ordinance 1980 (section 3). The Corporation is responsible for the "economic and scientific exploitation of forests" and well as "regeneration" (section 10). It also establishes primary wood-processing units.

The Corporation is managed by a board (section 5) made up of government and forestry officials, nominees from "loan giving" agencies where applicable, and a governor's nominee with expertise in business and administration (section 6). In addition, the board may appoint officers, advisors, consultants and employees (section 8). There are no requirements for representation from stakeholders belonging to communities where government forests are located.

Forest produce

Statutory provisions governing the extraction and use of forest products are more or less identical to those governing timber. In the Forest Ordinance, for example, individual rights in various types of forest entitle rightsholders to use both the timber and non-timber forest products. Similarly, restrictions on transportation apply equally to trees and forest products. Additional provisions have been made in the Forest Ordinance for the management and protection of the Mazari palm (*Nannorrhops*

[1] The Management of Protected Forests Rules were framed under Section 32 of the Forest Act 1927. Although the 1927 Forest Act in its application to the NWFP has been repealed by the NWFP Forest Ordinance 2002, these Rules remain in force to the extent that they are consistent with the new 2002 Ordinance.

[2] Following the outbreak of violence in the 1970s over the issue of forest royalties, the amount to be paid to communities was increased significantly by means of a notification issued in on 14 March 1977 (Shah, 2006). It could not be determined whether the Management of Protected Forests Rules were ever subsequently amended to reflect these changes in policy.

[3] The Forest Produce Transport Rules were framed under Section 41 of the Forest Act 1927 but remain in force to the extent that they are consistent with the Forest Ordinance 2002.

Ritchieana, known locally as *mazri*),[4] allowing the government to restrict the cutting, possession and transport of this species (section 47), and vesting the management of growing tracts including those that have been denuded with the forest department (section 49).

Other laws, such as the NWFP Protection of Trees and Brushwood Act 1949, apply specifically to trees or brushwood belonging to the government or to local bodies (section 2). The Trees and Brushwood Act prohibits the felling or use of government-owned brushwood and trees without exceptions for communities residing in the vicinity (section 2(e)). In fact, this law holds local residents accountable for crimes committed in their areas if the identity of an offender cannot be determined (section 4). Communities are also required to themselves take on the task of policing, and must report to the nearest police officer or magistrate any information they may posses about the commission of, or intention to commit, an offence (section 3).

Ultimately, the rights of communities to harvest or use forest produce depend in large part on how the term itself is defined under various laws. The Forest Ordinance defines forest produce in the broadest terms to include all "timber, bark, charcoal, gum, natural varnish, resin, rosin, lac, wax, wood-oil and derivatives thereof" wherever these materials are found (section 2(19)(a)), as well as all plant matter, vegetation, materials or substances derived from plant matter, standing or harvested crops, soil, stone, minerals, animal products and wildlife, when these are found in or taken from a forest (section 2(19)(b)).

In the Forestry Commission Act, non-timber products are included in the definition of forests, which are defined comprehensively to include soil, water, trees, shrubs, herbs, grasses, medicinal plants and mushrooms as well as wild animals, birds and fish inhabiting a forest (section 2(vii)). The Forest Development Corporation Ordinance, Management of Protected Forest Rules and Forest Produce Transport Rules all use the definition contained in the Forest Act 1927. There, forest produce is defined broadly to include all vegetation, minerals and animals "whether found in, or brought from, a forest or not" (section 2(4)).

Rangeland and pasture

Pasture and rangeland are not managed separately by statute anywhere in Pakistan. Rather, various laws applicable to other sectors regulate the activity of grazing. In forest areas, for example, prohibitions in place for various categories of forest include provisions related to grazing and animal trespass. Similarly, grazing and trespassing are prohibited in protected areas by the wildlife laws under which such protected areas are designated.

Other laws that regulate grazing are the West Pakistan Goats (Restriction) Ordinance 1959 and the federal Cattle Trespass Act 1871. The Goats Restriction Ordinance allows the provincial government to notify "local areas" in which grazing and keeping goats is prohibited (section 3). It gives government officials the power to arrest without a warrant those found committing an offence and to seize all animals belonging to the suspected offender (section 8). The Cattle Trespass Act, meanwhile, imposes penalties for damage to crops or public property caused by cattle (defined to include "elephants, camels, buffaloes, horses, mares, geldings, ponies, colts, fillies, mules, asses, pigs, rams, ewes, sheep, lambs [sic], goats, and kids" (section 3)). It allows trespassing animals to be impounded (section 10).

Fisheries and wildlife

The sole provincial law related to the management of fishing, the West Pakistan Fisheries Ordinance 1961, does not apply to tribal areas of the province.[5] Whatever the rights to fisheries resources that may be granted by law to individuals and communities elsewhere in the NWFP, residents of the study area have no statutory rights to fisheries resources.

[4] The Mazari palm is used in the manufacture of rope, thread, furniture and household items.

[5] As such, the NWFP Fisheries Rules 1976, framed under section 26 of the Fisheries Ordinance, do not apply to tribal areas.

Wildlife is another subject for which the sole provincial law, the NWFP Wildlife (Protection, Preservation, Conservation and Management) Act 1975, does not apply to the tribal areas. This law does not in any case apply to wildlife outside protected areas (section 1(2)). As such, the hunting rights of communities in the study area remain undefined by law.

Land and tenure

Legislation related to land rights and tenure mostly governs issues such as land reform, acquisition, and the relationship between landlords and agricultural tenants. Since most landholdings in the study area are small—the assumption being that this land is in the hands of small-scale owner-cultivators—this regime does not apply to the study area.

CUSTOMARY REGIMES

In the study area, the customary regime that once governed rights to natural resources was rooted in a system known as wesh, a communal land ownership arrangement based on the periodic redistribution of landholdings (Hunter, 1840–1900). This system of re-allotment is said to have been practised among many Indo-European speaking peoples, as well as Celtic and Germanic tribes (Barth, 1956). According to some sources, the system was introduced in the study area by the Yusufzai who invaded the region in the 16th century (Rome, 2005; Anon, undated). Other sources suggest it was a primitive system of collective tenure that arose almost universally among nomadic communities when they first became sedentary, eventually leading to more fixed types of tenure (Gazetteer, 1887).

Under this system, property remained under the control of the same tribe permanently, while within the tribe ownership would be rotated. Since land in the region differed greatly in terms of accessibility, fertility and the availability of water, this system ensured that all members of the tribe shared equal access to the most productive land. Each allotment included a combination of contiguous agricultural, forest, pasture and wasteland (Rome, 2005).

Within each tribe, sub-tribes re-allotted the land and houses every five to 10 years, depending on what was mutually agreed (Rome, 2005). Houses were initially built near rivers and perennial streams. As land was cleared and terraced, houses were built on the slopes as well. The arrangement may have been equitable on a social level, and in theory at least it allowed resource management and protection to be a collective responsibility (Kohistani, 2005). At the same time, however, it relocated entire villages, took away the incentive to maintain property and may also have encouraged unsustainable levels of resource extraction (Anon, undated).

The distribution among sub-tribes was more actively enforced with respect to agricultural lands, villages and oak forests than it was with respect to coniferous forests and alpine pastures (Rome, 2005). In the more remote coniferous forests and alpine pastures, the main tribal allocations determined access rights. The sub-tribes had common access within these allocations. Grazing was a more wide-ranging activity with a potential for inter-tribal discord. This issue was resolved through the payment of a grazing tax between sub-tribes in the oak forest, and between main tribes in alpine pastures.

In addition to the fixed land boundaries separating the major tribes, occupation and tribal status also created permanent entitlements known as serai (Rome, 2005). These holdings had defined borders and did not include lands that were governed by wesh arrangements. Serai lands were granted by the community to pious families or individuals for the construction of mosques as well as for self-sustenance. A more important type of land grant which subsequently had important political ramifications was made to khans (chiefs) and tribal elders, referred to as khan serai. Originally, these grants provided community leaders with the wherewithal to fulfil their social obligations, including hospitality, which was a critical prerequisite. Although this was not the case to begin with, eventually these grants became hereditary (Rome, 2005).

The serai system may arguably be viewed as the first manifestation of private property in the area. By the early 20th century, however, both wesh allotments and serai grants were subsumed under more formal arrangements and the holdings became permanent (Rome, 2005).

Although forests were the property of landowners, not communal property, all members of the community were either right-holders or concessionists. These rights were never recorded but were common knowledge among the communities concerned. With the consolidation of the wesh system, ownership of forests was claimed and held by the same parties who held wesh land or serai grants (Rome, 2005).

In many areas, forests were not demarcated and villagers enjoyed free access for grazing animals, and to take timber for domestic use. Outsiders were also permitted to collect forest produce such as mushrooms and medicinal herbs. The right to sell trees, however, lay with the clans who held proprietary rights in the land. Serai landowners exercised proprietary rights over forests that were included in their land grants. Gujjars and other smaller communities, who had no share in the land, had no share in the ownership of the forests or in the revenue accruing from the sale of trees (Rome, 2005).

The customary regime governing land and forests underwent dramatic changes as a result of political developments both in the region and elsewhere in colonial India. As the relatively non-hierarchical tribal social structure gave way to a system under which political power was consolidated in the hands of the nawab, resource rights also became concentrated.

Early formal arrangements

Although historical details for the period are sketchy, it is believed that somewhere between 1740 and 1750, an elected leadership began to emerge from within the various tribes in the area. These elected tribal leaders in turn paid homage to the Akhundkhel khans of the Yusufzai tribe whose progeny later became the ruling family of Dir.

As the khans grew in stature, their control over communal resources increased, marking a dramatic shift from the original dispensation under which land was granted to the khan only for the duration of his lifetime. They took control of the forests, imposing penalties for encroachment and unauthorised use of forest resources. They imposed fiscal burdens on the population in return for permitting access to various resources, including land tax and levies on crops, and they extracted labour.

By the 1890s, the region was in the grip of internal strife brought on by battles between rival rulers of the many principalities in the area. These political developments became intertwined with the imperatives of the British colonial expansion. Infighting between various tribes in the area created instability that was exploited by the British who were by this time firmly entrenched elsewhere in India.

In 1897, the British intervened directly, reinstating Sharif Khan to his seat in Dir and conferring upon him the officially status of nawab (Rome, 2005). With this move, political power—and, eventually, control over resources—was firmly consolidated in the hands of the ruler.

The British paid the nawab an annuity of 70,000 rupees and gave him carte blanche in internal affairs. This arrangement strengthened the nawab's position, allowing him to govern by decree rather than through formal legal codes. The arrangement also increased the nawab's hold on community resources.

The nawab took control of forests, forcing communities to provide him with timber and, later, to allow his designated contractors to fell trees. The commercial felling and export of timber is also thought to have started in this period (Rome, 2005). Between 1902 and 1927 the Dir nawabs sold thousands of trees to contractors from outside Dir.[6]

While the nawab's fiat restricted extraction of some forest products, customary law continued to govern subsistence activities. Initially, the customary distribution of land under the wesh system also

[6] In 1918 alone, 39,000 cedar (*Cedrus deodara*) trees were sold (Mumtaz 1989).

remained in place as long as communities fulfilled their various financial obligations towards the ruler. Eventually, however, the nawab gained the power to grant permanent ownership rights in agricultural land and houses. In many cases, the nawab's grants favoured courtiers and servants, not all of whom were residents of the valley. In particular, residential land was allotted to landless Gujjars in return for labour services. This created a point of potential (and future) conflict, since those who received land grants also claimed royalty rights in nearby forests. In fact, the nawab's grants became the basis for claiming forest royalties in the 1970s.

Following the end of British rule in 1947, the State of Dir acceded to Pakistan. The rights conferred by the nawab's discretionary land grants were codified in the 1963 Constitution of Dir State, according to which continuous possession of or residence on land for a period of 15 years created exclusive ownership rights to property. The constitution barred the extraction of minerals and medicinal plants from the forest except for medical treatment. Fishing and hunting were also banned.

Towards the end of the nawab's reign, various clans began to lay permanent claim to oak forest. In 1969, the State of Dir was abolished and a new district of Dir became part of what was then the province of West Pakistan. The Dir constitution was replaced by national and provincial laws. The only feature of customary property rights that prevails today is the broad allocation of coniferous forest and the alpine pasture among various tribes in the area.

INTERACTION BETWEEN REGIMES

It is difficult to identify specific points of conflict between statutory law and customary regimes, not least of all because the erosion of customary arrangements in the area began at least as far back as the beginning of the 20th century. In fact, this erosion, and the more formal arrangements that followed, created the basis for conflict over resources that in some cases persists to this day.

Under customary arrangements, the right to commercially exploit forest resources was not held in common but subsistence use was permitted to all members of the community and even to outsiders. This arrangement fell subject to various taxes and concessions during the reign of the nawabs, until customary access rights were whittled away. Centralised control was formalised by the nawabs and it was this system that subsequently carried over into the statutory regime that came into force when Dir State acceded to Pakistan. Competing claims to resources date back to the grants made by the nawab which too did not necessarily reflect customary arrangements, since many such grants were made to outsiders.

There are parallels that may be drawn between the nawab's control over forests and the statutory system in place today. Under both arrangements, the right to exploit forest resources on a commercial scale has belonged to the state. In the case of the nawab, it is believed that he was able to take trees even from forests that were granted to others. The state is certainly shown to have benefited from this trade. In principle, the same arrangement is in place under statutory law today. The government exercises its right to extract timber from protected forests in the area, in exchange for which it pays royalties to some of the stakeholders in these forests. If this arrangement gives rise to conflict, it is not necessarily only because the system itself is unjust, but also because the rights of individuals and communities are not clearly defined.

But a solution to this problem is not as simple as including in the roster of rightsholders those individuals or communities who enjoyed customary rights over forests because the extent of these rights is impossible to determine. Once again, it was only in the time of the nawabs that records began to be kept of land ownership and tenure. Unless prior customary claims were recorded at that time along with the new grants that were made, there is no evidence with which to verify such claims today.

As far as subsistence use is concerned, the regime in force today more closely resembles customary practice than any of the formal arrangements that followed. While the exact legal status of all forests in the study area is not known, government figures for the year 1999–2000 show some 170,513 hectares of designated protected forest in the "Dir" forest division, and no other forest types have been designated (BOS/P&DD, undated). The regime governing protected forest has been described as an arrangement under which all rights are admitted unless specifically prohibited (I. Khan, 2006).

What this suggests is that subsistence use is not automatically denied. Guzara forests are also said to have been designated in Dir Kohistan's "Malakand Civil Division" (Matiullah, 2004) but information regarding the exact location or expanse of these forests is not available. The remaining forests in the area are not designated and thus not governed by any statutory regime as such.

INSECURITY AND CONFLICT

It is a great injustice that in an area rich in commercially viable forest, the majority of the people live in extreme poverty. This is in no small part a result of the current system under which the timber trade is conducted.

In the protected forests of Dir and in guzara forests located in Dir Kohistan's "Malakand Civil Division", timber harvesting is currently carried out by the Forest Development Corporation (Matiullah, 2004). Although various organisational (direct contracts, Forest Development Corporation) and financial (fixed price, 'net-sale') arrangements have been tried over the years, these have without exception limited the community share in revenues to a minimum.

Under the fixed-price system, for example, which was in use until 1981, rightsholders were paid a pre-determined amount per cubic foot of harvested timber (Knudsen, 1995). This system was clearly exploitative since it allowed the government rather than the communities to benefit from rising timber prices. Subsequently, a 'net-sale' system was introduced, whereby harvested timber was auctioned and net proceeds from the sale (less marketing and administrative costs, and other overheads) were divided between communities and the government according to a set formula (Knudsen, 1995). In theory, this entitled communities to receive a more equitable share of the income from the timber trade. In practice, however, this proved not to be the case. Prolonged delays is disbursing royalty payments in many cases left communities open to exploitation from timber contractors, who would buy up royalty rights for a fixed price that was only slightly higher than the earlier fixed rates. It is reported that in the case of Dir, the net-sale system was never actually implemented and that royalty payments continue to be based on the fixed-price arrangement (Shah, 2006).

It is also reported that in some areas the system was recently changed once again. In such areas, royalties are said to be paid before harvesting operations commence, and profits and losses that occur during the extraction processes are shared by the government and the communities concerned (Matiullah, 2004). It is unlikely that this system has been implemented in the study area. But in any case, this arrangement does appear to allow communities to share in profits that might accrue when the timber is sold in the market. Nor, it seems, does this system take into account other chronic problems in the timber harvesting system, such as prolonged delays in disbursement and the involvement of the 'timber mafia'.

A key issue in the study area is the question of forest royalties. The iniquities of the timber trade notwithstanding, on paper at least many communities are entitled to a share of royalties from logging in protected forests. But active collusion between timber contractors, the forest department and, in some cases, even village elders, has left genuine rightsholders without an equitable share in the profits from this trade.

Communities whose rights to receive royalty payments are recognised by law often lose out on their payments at the hands of forest contractors. A common practice in many areas is for contractors, most of whom belong to the same area (Shah, 2006), to pay rightsholders in advance, in exchange for which the contractors themselves collect royalty payments. Such arrangements are carried out by means of agreements between village elders and forest contractors, and royalty claims are generally sold at highly discounted rates (Knudsen, 1995).

Even where communities do not sign over their rights to collect royalties, contractors have in many cases managed to appropriate the share of genuine rightsholders. In the villages of Gawaldai, Kalkot and Lamotai, for example, which are home to some of the richest stands of conifers in the country, residents claim that royalties to the tune of 195 million rupees have been appropriated by forest contractors (Shah, 2006). No verifiable information exists on exactly how this is achieved but it is possible that in such cases contractors make a partial payment in advance, with the promise that a further share from the royalties will be paid to communities as and when the monies are released by the government.

The system is clearly exploitative, and government delays in disbursing the amount due to communities only serves to encourage these and similar practices. In many areas, meanwhile, local

communities are also embroiled in court cases related to accumulated royalties and the method of payment (Shah, 2006).

In 1996, the Peshawar High Court delivered a judgment disposing of two writ petitions concerning royalties in Upper Dir as well as the Kalam valley in neighbouring Swat district, and held that royalties should be paid on a net-sale basis. The Forest Development Corporation filed an appeal in the Supreme Court which remanded the case back to the High Court because certain legal formalities were not fulfilled by the High Court while delivering its verdict. In June 2005, another bench of the High Court decided the petitions, ruling that a 60 per cent royalty should be paid on the basis of net sales. The Forest Development Corporation has again appealed the decision and the matter currently lies with the Supreme Court. The uncertainty surrounding the outcome of this case has created a great deal of anxiety not only amongst those directly involved in the proceedings but also within other communities grappling with the same issues (Shah, 2006).

But perhaps an even greater cause for concern is the fact that many communities with customary claims in forest areas are denied the right to royalty payments altogether. Their exclusion owes largely to the fact that no means exist to verify their claims. The land grants that were awarded by the nawabs to their favourites, and later provided statutory cover in the Dir State constitution, are today a key source of tension between communities because claims to forest royalties are asserted based on these grants. Within communities, this tension has caused resentment and disaffection but not open conflict. Violent conflict over the issue of forest royalties has pitched local communities against the state.

There have been at least two such cases in the Dir valley. The first episode occurred in 1976, five years after the government declared Dir's forests to be protected under statutory law. In an attempt to secure higher royalties for their own communities, and to curb the inroads into forests by contractors, local people (all three ethnic groups) staged a protest against the government at Sheringal, the largest town in what is today the district of Lower Dir. The government initially deployed the Frontier Constabulary to control the unrest but as tempers flared and the situation turned violent, the military was called in (Shah, 2006). The disturbances were eventually handled by resorting to aerial bombing (field interviews, 2003).

Coming as it did less than a decade after Dir State was abolished and its residents drawn under the mainstream administrative aegis of the Pakistan government, there is no doubt that this incident sowed the seeds of distrust and paved the way for repeated bouts of anti-government violence in the decades to come.

Following the bombing atrocity, the then prime minister visited the area and announced that royalties would be increased. By means of a notification issued on 14 March 1977, the community share in royalties was raised from 15 per cent to 60 per cent (Shah, 2006). Certain tribes, who bore the brunt of the government crackdown and sustained the heaviest number of casualties, received a larger share of 80 per cent (field interviews, 2003). And here the matter should have ended.

It did not take long for local communities to realise that while their share of forest royalties may have been substantially increased, the system of extracting timber remained unchanged. Exploitative contractors had been a feature of the timber trade since the time of the nawabs, when such contractors were employed by the state to extract and transport timber from Dir's forests. This situation after accession to Pakistan was no different. Resentment erupted into violence less than two decades later.

In 1993, in the wake of massive floods that had occurred the previous year, the government banned logging activities in the area to allow the forests to regenerate (Dawn, 2005). No restrictions were, however, placed on the down-country movement of timber. This created a potential windfall for timber contractors, who had in many cases already paid communities meagre sums of money for large volumes of cut timber which would now greatly increase in value, and who were in the process of transporting the timber out of the valley.

The matter remained unresolved for many years until local youth in the town of Kalkot, Upper Dir, decided to take action. They set up a checkpoint to stop all movement of timber outside the valley,

and both the written and spoken rhetoric became confrontational. Scuffles broke out as forest officials attempted to dismantle these checkpoints.

The situation was eventually brought under control and in March 1997 the government ordered an inquiry (Shah, 2006). The inquiry commission, which submitted its report in June 1997, vindicated the communities' stance and advised payment of royalties in full (Khattak et al., 1997). It also recommended that the funds plundered by contractors be recovered and paid to rightsholders (Shah, 2006). These recommendations were not implemented and agitation continued.

Protest demonstrations were staged on a regular basis and hunger strikes were launched (Shah, 2006). A 'long march' to Islamabad was organised. Finally, in the year 2000, a second inquiry was commissioned which submitted its findings in October 2000. This time, however, the commission observed that it would be difficult to recover the looted money at this late stage (Shah, 2006). Not surprisingly, public agitation continued.

Eventually, a jirga was constituted which in 2000 negotiated with the government on behalf of the communities. A portion of the accumulated royalties was released for distribution to rightsholders through designated elders. In the wake of this settlement, the down-country movement of timber resumed in 2002. But some refuse to accept the decision of the jirga (Dawn, 2003; Shah, 2006) and the issue continues to fester. Meanwhile, rightsholders are yet to receive their full share of royalties

Regrettably, such incidents have not elicited policy changes. The government tends to view resource-related conflict as isolated incidents, rather than as a symptom of a much broader injustice.

Even though the ban imposed in 1993 remains in force to this day, illegal felling in these forests continues (Dawn, 2005). The main species of commercial value in the study are cedar, blue pine, fir and spruce. On average, prices currently range between 100,000–125,000 rupees per tree. While creating an enormous potential for enriching communities, the value of timber also acts as magnet for timber contractors who are able to work the system to their advantage. In collusion with forestry officials and, in some cases, local community leaders, contractors are known to have used documents granting them power of attorney to appropriate the bulk of the royalties, leaving the communities with a pittance (field interviews, 2003). In other cases, the government's own lethargy is to blame. Forced to wait for years, if not longer, for their share of royalty payments, individual rightsholders are often compelled to sell their claims at highly discounted rates to forest contractors, particularly when cash is hard to come by. This iniquity is compounded when timber prices skyrocket as a result of unanticipated events.

This is a classic case where communities have rights on paper, but are without the legal, institutional or political means to avail of these rights to the fullest. Well-defined resource rights and entitlements, and the mechanisms to exercise these rights, would also provide communities with a cushion against fluctuations in the market. When resource rights are not secure, livelihoods are threatened. In the Dir valleys, the results have in some cases been explosive.

Inter-community tensions

Conflict with the government over forest royalties has often seen the various tribes and ethnic groups of the Dir Valley band together to present a united front. This should not suggest that there is no discord between these same communities, and over many of the same issues.

With few formal titles to land recorded in the area, tensions over arable land and oak forest, particularly those which have been converted into private family holdings, are not uncommon. Similarly, the ambiguity of communal resource rights has led to inter-community disputes.

Within communities, disputes mostly arise over arable land and private family holdings in oak forests and such matters are settled within the community. Between villages, tensions occur over agrarian land, community oak forests and the boundaries between coniferous forests. Between ethnic groups, meanwhile, disputes arise primarily over timber royalties. Many of these claims, filed shortly after Dir State acceded to Pakistan in 1969, are yet to be settled. While the government has conceded these

rights in principle, it was only the 2000 jirga intervention that finally led to the partial transfer of royalty payments. Claims filed by Pakhtun and Gujjar communities continue to be contested by Kohistanis.[7]

These differences and tensions take many forms but tend not to escalate into open violence. Usually, matters have been resolved through mediation by a jirga. As a consequence, communities have received some financial restitution from timber contractors and local elders holding collective powers of attorney on behalf of the communities.

Subsistence rights

Forests meet the subsistence needs of communities in the form of fuel wood, timber, fodder, and medicinal and edible plants. The rights of local communities to make use of forest resources do not have guaranteed statutory protection. Statutory law allows instead for subsistence use of resources at the discretion of forest officials, who are awarded wide powers to allow or deny access in areas under their jurisdiction. Rivers and lakes provide fishing opportunities which become all the more important in times of extreme scarcity. Rangeland and pasture allow communities to rear livestock. Rights to freshwater resources as well as pasture are not defined in the statutory regime.

When access to forest resources is circumscribed by permits, fines and the whims of forest officials, local communities are forced to resort to raiding resources, inviting retaliation by forest officials. Situations such as this often take a violent turn. This has been known to occur in the case of protected forests in the study area.

Demographic pressures

The study area lies within a district that is one of the least developed in Pakistan. Small farms, already on the borderline of viability, have increasingly become fragmented as a consequence of population growth and are unable to support the burgeoning population. Rising input costs have added to the financial burden of subsistence farmers. The increasing number of dispossessed farmers has swelled the ranks of the unemployed. At 37 per cent, unemployment is the area is exceptionally high (BOS/P&DD, undated). Growing livestock numbers, meanwhile, have exhausted pasture and rangeland. Among most communities, agricultural activity has in any case always been practised on a subsistence level. Today even this meagre subsistence is threatened.

Religio-political stresses

Around the same time that youth in Kalkot began agitation to secure forest royalties for local communities, elsewhere in the region a different kind of movement was beginning to take shape. The year 1990 marked the beginning of a new phase in the political life of the people of Dir. In that year, the Peshawar High Court declared the PATA Regulations to be unconstitutional (AI, 2005), creating the possibility for new administrative arrangements to be put in place in the PATA. Four years later, the Supreme Court upheld the High Court decision, in effect leaving the PATA without a system of judicial administration. The 1994 Supreme Court ruling was followed by violent protests in many parts of the province (Dawn, 2004), calling not for the reinstatement of the PATA Regulations but demanding, rather, implementation of an Islamic legal system.

Violent clashes broke out between activists and government forces, leaving more than 30 dead and seeing a number of government officials held hostage (USDOS, 1995). In November that same year, to quell the unrest, the government issued the Nifaz-e-Nizam-e-Shariah Regulations ('implementation of the system of Shariah') to introduce an Islamic system (Dawn, 2004). This Regulation was replaced five years later by the Nizam-i-Adal Regulation and Ordinance 1999 ('Islamic system of justice') which, among other things, required judges to consult with Islamic advisors before issuing decisions (AI, 2005). These laws apply to the areas that were part of the former Malakand Division, including

[7] There are currently also disputes between various communities and the former nawab of Dir. These centre on the nawab's acquisition of urban and arable property, and are being contested in the civil courts.

Upper Dir. Despite these concessions, the government's attempts to establish its writ in the area have not been a resounding success (Asad, 2006; Dawn, 2004; Khan, 2001).

The rise in Islamist sentiment across the area was once again evident in 2001 when a local religious leader assembled thousands of armed supporters in Dir, in full view of state paramilitary forces, and later led them to Bajaur Agency on their way to do battle in Afghanistan (Khan, 2001). More recently, religious sentiment has converged with the strong tribal customs that dominate the cultural life of the area, creating a volatile situation that is apt to erupt into violence at the slightest provocation.

Degradation of resources

With few financial benefits accruing from royalties, limited subsistence access and growing needs, communities have little stake in sustainable forest management. Forests in the study area are doubly threatened. Not only does the high price of timber create impulses for unsustainable levels of exploitation, but equally harmful are the encroachments, land use changes and livelihood-related activities (timber, fuel and fodder extraction), triggered by demographic pressures. The risk is that by the time other issues are resolved, the forests may be damaged irreversibly. If that happens, community resource rights, however hotly contested and hard-won, will simply become irrelevant.

SYNTHESIS AND CONCLUSIONS

The question of resource rights is without doubt the most obvious issue affecting the lives and the livelihoods of the people in the Dir valley. It has been more than 30 years since the forests of Dir were taken over by the government and declared to be 'protected' by law. And it is since that time that disputes over royalties have been foremost in the minds of the communities and individuals who lay claim to these forests. The disaffection created has taken an explosive turn on many occasions in the past, reflecting the frustration and perceived helplessness of the communities concerned. The long-standing conflict between local communities and forest authorities over royalties has never been resolved to the satisfaction of all stakeholders. But royalties are only one aspect of the resource rights issue. Communities depending for their subsistence on forest, river and rangeland resources also need to be taken into consideration.

In the area of Dir-Kohistan, the social setting includes the ethnic and political rivalries described earlier but also:

- the long-term presence of Afghan refugees whose impact on the forests is a matter of considerable debate but has probably not been positive (Matthew and Zaidi 2002);
- the so-called talibanisation of the region, through which extremist elements have sought to influence social practices and institutions in ways that make it difficult for NGOs dedicated to conservation, human security and sustainable development to operate effectively (Khan 2002);
- the widespread cultivation of poppy which encourages various forms of government intervention, corruption and criminality, and drug addiction, all of which add stress to the society (Ansari 2003); and
- a women's rights struggle that became acutely visible during the 2000-2001 elections--which were structured by the national government's decision to reserve 33% of all local seats for women—in which numerous councils in the region elected no women at al as extremists elements launched a threatening anti-women campaign (Aurat 2004: 12-13).

It is very difficult to decipher how these forces interact, but it seems highly plausible that the specific incidents of conflict and insecurity related to resource rights issues do not tell the whole story of how this problem affects the region. One can suggest that each time the legal system fails to respond to a demand on it, allowing a negative outcome to occur or an outcome to be worse than it might otherwise be, this failure insinuates itself into other areas of social tension, fragmentation and insecurity. In this larger context, the effects will be mixed. External forces, such as NGOs, may become involved bringing resources into the region. But often the effects will be negative, pushing people towards the cultivation of poppy which in turn will reinforce political corruption which in turn will stiffen resistance to the national government and push some towards extremist ideology and behavior. Insofar as this is true, then clarifying property rights, promoting environmental security through fair access and sustainable practices, and making the legal system affordable, transparent and fair will have a generally therapeutic effect in reducing social tension, an effect that is impossible to measure but that may be immeasurably important.

The law in some cases provides mechanisms through which these matters may be addressed. The Forest Ordinance allows communities to participate in the management of forests and to share in the monetary benefits from planned use. But these are just possibilities, not 'hard' rights guaranteed by law, and on the ground forestry officials continue to enjoy sweeping powers to admit or deny rights at their discretion. It is no wonder, then, that the Forest Ordinance has come under fire from local groups who see it as little more than a reprise of the colonial forest law which the Ordinance was meant to replace (Daily Times, 2002).

Colonial law focused on devising the most efficient means to exercise surveillance and control over both the forests and the people who used them. This policing approach has survived to this day, in forest officials who exercise "dictatorial powers" (Daily Times, 2002), and in the forest management regime that treats community participation as a privilege rather than an inalienable right. Colonial forestry policies also paved the way for powerful 'timber mafias' to emerge, and these too continue to

operate with impunity to this day, colluding with forestry officials and, in some cases, with the leaders of those very communities whose rights are being curtailed.

Solutions proposed to tackle these issues turn once again to the idea of policing. The Forest Ordinance provides for the creation of a Forest Force, a move some have called “barbaric”, and the forest department’s strategy to curb illicit felling involves the injection of some 60 million rupees of public funds to purchase weapons for forest guards (Ali, 2004).

An equitable resolution to the chronic issue of resource rights is perhaps not as difficult as it appears to be. Recent jirga mediation, though unacceptable to some (Dawn, 2003), has at the very least demonstrated that solutions are possible. If a more broad-based selection of community leaders were to be included in future mediation efforts, there is no reason to think that such efforts will fail to make important strides towards a permanent solution that is acceptable to all stakeholders.

At the same time, however, other deep-rooted constraints remain to be addressed. Upper Dir is one of the country’s poorest and most poorly developed districts. While resolving once and for all the chronic problem of forest royalties will go a long way toward improving the lives of many communities, livelihood security in a meaningful sense includes access to basic public services such as heath care and education. Securing the ability of local communities to earn a living also requires that efforts be made to create employment opportunities for 37 per cent of the working population that is out of work, and to provide communications infrastructure.

Government initiatives in this connection will continue to be hampered by the unusual administrative arrangements that are in place in the PATAs. As long as the law is selectively applied to these areas, justice will continue to be administered selectively as well. Without access to justice, communities have at their disposal no legitimate means to address iniquities in the resource rights regime, or to earn for themselves even those rights to which they are entitled by law.

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