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Barbara Brower
University of Texas, Austin

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Co-Management vs Co-Option: Reconciling Scientific Management with Local Needs, Values, and Expertise

Barbara Brower

Abstract

The goals, techniques, and rhetoric of resource management are the legacy of a particular culture's mindset and concerns. Originally a preoccupation of a small cadre of Western practitioners, resource management has become internationalized, a near-universal concern of a broad spectrum of adherents and sympathizers. Increasingly, the once narrowly defined focus of resource professionals has broadened to include awareness of the wide array of demands and expectations that may be made of wildland resources which still provide the basic subsistence of local users. (Conferences like this one, sponsored by the school of forestry once most closely allied with the commodity-oriented "wise use" approach to forest resources, argue for the breadth and vision that now enrich the resource studies curriculum.) But in the newly popular area of co-management at least, the old ideology though explicitly repudiated lives on in the assumptions, goals, plans, and tactics of Western-trained professionals seeking to involve local people in programs of resource management.

Introduction

Chandra Gurung commends raising the awareness of both local and foreign users of natural resources as the way to ensure the success of efforts at conservation and development. He offers as an example the Annapurna Conservation Area Project (ACAP). That's an excellent start, but I propose to argue that it is not only users of resources who need their awareness increased. Those of us who take it upon ourselves to develop this enhanced understanding by those whose lives depend on wildland resources need to expand our own frames of reference, to examine our own assumptions and preconceptions, to avail ourselves of the growing body of information that challenges conventional approaches to the management of resources, reveals the institutional obstacles to successful conservation efforts, and demonstrates the diversity, complexity, and sophistication of indigenous resource management practices. For even in innovative projects like ACAP, specifically designed to accommodate the voices and needs of local resource users, we can detect the influence of a cultural and ideological legacy that trained resource planners and managers carry with them wherever they go, a way of looking at the world that blinds them, often, to the environmental and human implications of well-meant strategies for conservation and development.¹

I will try to de-fog my own blinders enough to begin to discuss some of the prevailing professional biases that I believe impede the successful implementation of effective, equitable co-management of wildland resources, and to suggest ways of approaching conservation and development that might escape some of the constraints we observe on the success of past attempts. An example from Sagarmatha (Mt. Everest) National Park in east Nepal will illustrate these themes within the larger context of our region.

An Evolutionary Perspective on Co-Management

Co-management seems to be a relatively new term for an older idea, around for at least a couple of decades: that local users need to be directly involved in the conservation and development plans that affect them. Various attempts have been made by an array of agencies and entities in projects all over the globe to include local people in the planning and management of resources on which they depend. Few have been wholly successful. No one is arguing that co-management is easy; there is widespread recognition of its many difficult aspects. Concern is often expressed, for instance, over the difficulties inherent in the design, communication, and implementation of plans intended to involve local communities. The socio-political context for co-management efforts is also recognized as being a particularly tricky area, for successful plans must address and somehow circumvent unbalanced power relations within the community and between a community and the state. But a further obstacle to effective, equitable conservation and development is less often acknowledged and addressed: the problems of perception and bias introduced by outsiders seeking to forge this conservation alliance with local resource users. Although we are learning to appreciate what local people have to contribute, we aren't quite ready to abandon our own assumptions and let go of control.

The awareness, now so widely shared, of the need to include local people in conservation planning has undergone something of an evolution. At first, of course, there was no place for them in mainstream development and conservation: western experts could identify the problem, be it deforestation or eradication of wildlife or overgrazing, and summon the necessary tools and talents to fix things. Local resource users were the culprits, the ignorant squanderers of natural resources. When the idea of involving locals in conservation did arise, it seems to have been motivated by largely pragmatic considerations: conservation schemes weren't working, and development technicians and planners, looking for the reasons, discovered that without popular support many projects simply foundered (Milton and Binney, 1980; Lall, 1981; Guha, 1989). So there were powerful incentives among resource planners to seek ways to diffuse hostility and engender cooperation. The attempt to explain the rationale behind conservation measures--conservation education--became an early component of most efforts.²

Often along with education programs, jobs have been offered to offset the losses of locals whose access to critical resources has been curtailed by parks or plantations. For the hill farmer denied the chance to cut wood for sale, the alternative of a position as plantation *naike* will make all the difference in his acceptance of restrictive conservation measures. The commercial hunter may become a wildlife guide, the herdsman an attendant for a livestock development project.³

More recently, another justification for local involvement has had increasing attention: the knowledge and experience of indigenous resource users. This growing regard for what local people may know about the environment that supports them appears in various guises and comes, I think, from two sources. On one hand are the romantic, Rousseauian visions of primitive peoples in harmony with Nature; American Indians and the Sherpa of Nepal come to mind (Sherpa, 1987).⁴ On the other there is a burgeoning scholarly literature describing the environmental expertise of "traditional" peoples that is developing within anthropology and geography, often going by the labels "human" or "cultural ecology."

Early work in human ecology began to illuminate the vast knowledge about the environment that resides in the minds of such people as the Hanunoo of the Philippines, studied by Yale's own Harold Conklin in the 1960s. The Hanunoo distinguish 450 animals and 1600 plants, of which 1500 are considered useful and 430 are cultivated (Conklin, 1969). Such complexity in taxonomy, common to many such groups, reflects a highly sophisticated understanding of the natural environment. This understanding infuses intricately patterned land use practices which are quite alien to Northern temperate observers but highly appropriate to the conditions of the humid tropics. Any number of studies in the 60s and 70s by anthropologists and geographers uncovered similarly fine-tuned, sustainable systems of survival by people development professionals once wrote off as "primitive and backward" (see for instance case studies discussed in Vayda, 1969; Lee and DeVore, 1969). Agroecosystems were the first focus of many such studies and continue to dominate the growing literature of cultural/human ecology (Denevan, 1971; Doolittle, 1984; Zimmerer, 1991).⁵ Attention to indigenous practices regulating the

use of wildland resources is both more recent and less common (but see for instance Nietschmann, 1973; Johannes, 1981; Brower, 1987, 1991; Metz, 1989; Stevens, 1989).

These intermediate stages represent evolutionary steps towards today's co-management, in which local people are seen as participants in conservation and development planning. No longer identified as the guilty party in resource degradation, locals have become valued partners, joining their experience of place and understanding of cultural context with the skills and vision of the professional from outside. But although this represents an elevation in the conservation role allotted local users, we seem to be a long way from a truly equal partnership.

Co-management is a concept that borrows its terms, its frame of reference, its goals and values from the West. It belongs to the venerable tradition of professional resource management, and with the rarest exceptions represents yet another manifestation of alien ways imposed by outsiders. In this instance, it is persuasion that accompanies the imposition, rather than edicts; appreciation rather than condemnation of local lifeways that motivates it. But co-management seems to be simply the latest tactic in the campaign to spread a western gospel--in this case conservation--to anywhere we see the need.

So what? Is this a problem? Surely our experience as resource professionals trained in the West gives our appraisals depth and range, teaches us the tools we need to reverse environmental degradation, and provides us insight absent from the narrow perceptual horizon of the hill villager. We **should** be senior partners in any co-management scheme.

Conservation's Assumptions and the Shortcomings of Co-Management

But our world view comes with its own set of blinders, inherent in the values of the Western cultural tradition that informs the educational process and especially in the tenets of resource management training. Our assumptions--the assumptions embodied in a conference like this--confirm it. We assume, for instance, that conservation is desirable. Whether we identify a biocentric or anthropocentric rationale for our commitment to conservation, we make the culture-bound judgement that it is important. And we assume that Science can show us how to do good conservation: we know--or can learn--how the world works, and how to make nature do what we want. We have the necessary understanding contributed by science and expertise provided by technology to fix things.

These are among assumptions generally held by professional resource managers, sometimes held very dear. The first is one I hold dear, for instance, and would argue with all the passion of a defense of faith--for of course that's what it is: a matter of belief, conviction, and commitment, at least as much as of rational thought. Since for me, that assumption lies too deep to challenge--and seems to do less harm in the world--I'll leave it alone for now and make faith in science my target. For this is the unshakeable assumption that underlies conservation and development projects everywhere, even those that seek to redefine the role of local resource users and include them in planning and management. And I believe it can cause problems.

Let me turn to an example from the eastern Himalaya to illustrate the ways in which unexamined assumptions can obstruct collaborative efforts at conservation. The setting is Nepal's Sagarmatha (Mt. Everest) National Park, a place in which Western-style resource management has a long history and wide scope.

Case Study: Sagarmatha National Park

The park, which encompasses 11,000 square kilometers of high valleys and mountains centered on Mt. Everest (Sagarmatha), was gazetted in 1976, following an international campaign that involved mountaineers, His Majesty's Government of Nepal, the FAO, IUCN, and the government of New Zealand. New Zealand's enthusiasm for the project was fueled by Edmund Hillary's successful ascent of Everest, and has continued into the present. In collaboration with the government of Nepal, New Zealand conducted preliminary surveys of the proposed park, prepared a succession of management plans, provided the initial park managers, trained their Nepali successors, and continues to contribute

funds and plans for conservation and development projects within the park through the agency of the Himalayan Trust (now a joint New Zealand-Canada NGO). Other organizations and individuals have also been standard-bearers for conservation planning and management in the park, including an impressive roster of Nepalis trained in the West in such fields as geography, forestry, wildlife management, and park planning.

A set of subsidiary assumptions--derived from my target assumption, Faith in the Efficacy of Science--has been broadly shared by those involved in planning and management for Sagarmatha, as by many others concerned with environmental protection in the Himalayan region. I'll briefly consider three of these, analyzing both the consequences of behavior predicated upon them and evidence that refutes them, before concluding with an account of the history of park efforts to involve locals and a consideration of the implications of these problematic assumptions for the co-management that the park seeks to implement.

Assumption #1: Environmental Crisis

From the inception of the idea of national park status for Sagarmatha, park promoters and planners have subscribed to what I call the Himalayan Crisis Scenario (Jack Ives' "Theory of Himalayan Degradation," 1986). This is the broadly shared perception that the Himalaya, particularly in Nepal, is the scene of a colossal environmental catastrophe in the making. In this assessment, rampant deforestation induced by the increasing demands for fuelwood of an exploding agrarian population creates bared slopes vulnerable to the erosive force of intense monsoon precipitation. Consequent landslides destroy hill villages and, most critically, choke Himalayan rivers with debris. These rivers, swelled by the accelerated run-off from denuded slopes, coalesce and descend in devastating floods upon the Ganges plain (Eckholm, 1976, and many others, who include additional factors such as overgrazing and expanding peasant agriculture as components of the deforestation crisis).

Today, that catastrophic scenario is very much in question as a regional model (Thompson and Warburton, 1985; Messerli and Ives, 1989; Metz, 1989; and others). Then, in the early days of park planning, it was a plausible, compelling, even galvanizing interpretation of a dangerous interaction between nature and its human users. Faced, as they believed, with an impending crisis, park planners saw a need to act fast to promote the park and provide the protection that national park status would confer (Mishra, 1973; Blower, 1974; Speechly, 1976; and others). Acceptance of the crisis assumption led to further hasty action once the national park was gazetted: management planning for the park that was predicated on a state of environmental emergency.

Assumption #2: Recent, Accelerating Deforestation

Translated to Khumbu/Sagarmatha, the Crisis Scenario took on a particular form: a second, correlary assumption about the rate, intensity, and timing of deforestation in the high mountains that paralleled the model for the mid-hills. Primed for crisis by familiarity with the regional model, early visitors to Khumbu found disaster there, too, in the brush-covered slopes near villages. Where were the trees? In the eyes of those first Western-trained foresters and other resource managers, a mountain landscape below timberline should be a forested landscape; this wasn't. Given their presumptions about processes at work in Nepal, adding the impact of demand for fuel from the increasing tourist traffic in the newly accessible Everest area, park planners (who based their assessments on hasty, dry-season visits) interpreted the situation as one of recent, rampant, accelerating deforestation, and designed their management planning accordingly.

Their response was to attempt to arrest the use of forest products and to re-establish (as they thought) woodland that had fallen to meet the appetite for camp and cooking fires of the growing numbers of mountaineers and trekkers. Rules were established restricting villagers' use of forest within the park. Nurseries and walled plantations were established close to villages in order both to regrow lost forest and to demonstrate the positive returns from careful resource management. An impediment to the success of the plantations that had to be addressed was depredations of local livestock -- or such was another assumption of our park planners.

Assumption #3: Livestock Grazing Causes Erosion and Inhibits Regeneration of Forests

An early recommendation for management called for reducing the population of Sherpa yak, cattle, and crossbreeds to "a few monastery cattle." Livestock loom large in the conventionally trained forester's mind as a major threat to forest. The crisis mindset of Sagarmatha's early visitors set them up, again, to find environmental emergency in a landscape they presumed was being overused by both people and their beasts.⁶ Yak-keeping is a fundamental part of Sherpa survival and identity (Haimendorf, 1964; Palmieri, 1976; March, 1976; Brower, 1987, 1991). Had those working on the assortment of Sagarmatha National Park management plans wanted to pursue the early recommendations for reductions in Sherpa livestock, they would have encountered serious resistance. But there was an easier target for those concerned about the impacts of livestock, particularly on tender nursery and plantation stock: goats. Everybody knows goats are bad news for regenerating forests. "I think there is something poisonous in goat saliva," one New Zealand-trained Sherpa park warden told me (Sherpa, personal communication, 1982). In response to fears (not evidence, which was never mustered) of goat assaults on demonstration outplantings near villages, park authorities motivated and subsidized by the Himalayan Trust worked through the local panchayats to have goats banned from Sagarmatha. They proceeded to buy up and export from the park all goats kept by recent Tibetan refugees, village blacksmiths, and the few others without resources to purchase more expensive large stock yet dependent on dung, milk, and kid sales. Later a few Sherpas mused, "Why did they want to get rid of those goats? Everyone knows it's zopkio (hybrid yak-cattle) that eat young fir shoots."

Sherpas, had they been more directly consulted, might have prevented this costly miscalculation, which time and experience have brought home to those working to understand the actual manifestations of human use of the Khumbu environment--as opposed to what was initially assumed.

Refuting the Assumptions: Overgrazing?

Livestock grazing has not had the impacts predicated by the Crisis Scenario. The only study to date of geomorphic processes in Khumbu (Byers, 1987b) shows minimal evidence of erosion from most sample sites.⁷ My own analysis of impacts on vegetation (Brower, 1987; unpublished data) documents long term transformation of the landscape owing to grazing, but no catastrophic downward trend. This is in large part a consequence of traditional mechanisms regulating the impacts of livestock (described more fully in Brower, 1991), mechanisms about which early park planners were unaware.

In their concern to get trees growing and to show the benefits of Western-style resource management, park managers have gone to great lengths to promote plantations. Nurseries and walled outplantings have been the ongoing thrust of reforestation efforts. But overlooked in the zeal to establish plantations near villages have been at least two complications: competition for resources and the inefficacy of the example. Walled plantations now cover substantial areas near most of Khumbu's main villages, and after several years of trial and error, most sites effectively exclude the livestock that graze in the vicinity of these villages. Newly planted trees are thus protected, but no provision has been made to replace the forage formerly available from the now walled-off slopes; grazing pressure in consequence is concentrated on a smaller area. Were the plantations powerful testaments to the wonders of Western resource stewardship, the cost in increased grazing pressure might be justified. But it's tricky to grow trees at 3400 meters and higher. The New Zealanders who have sponsored most of the plantation work have been better at making Monterey pine grow on their islands than at establishing native forest in Sagarmatha. After ten years of trying, trees within the plantations--which in some instances have been replanted multiple times--are small and inconspicuous, hardly a compelling illustration of Western-style reforestation.

Deforestation?

The plantations' shortcomings do not, however, spell doom for Sagarmatha's forests; here to, early assumptions about the timing, rate, and extent of deforestation were apparently predicated on a crisis scenario rather than reality. Several sources of evidence, including repeat photography (Byers, 1987a) and closer analysis of vegetation (Brower, 1987, 1991; Dennis and Brower, in progress), indicate both that the extent of today's forested areas compares closely with forest cover in the early 1950s (well before tourism was a significant factor) and that forest stands near villages, taken to be relicts retreating

under seige from grazing and woodcutting, are in fact actively reproducing. (If the concern were for the survival of shrubland types such as the lovely knee-high *Rhododendron/Cotoneaster* mix near these villages, measures would be taken to restrict this invasion by *Abies* woodland!)

As in the case of grazing, indigenous--at any rate pre-existing--mechanisms regulated Sherpa use of forest (Haimendorf, 1964) maintained a number of stands as protected woodland (Stettler and Donaldson, 1982; Stevens, 1989), and increased the longterm sustainability of Sherpa use of forests. While it seems likely that the first-arriving Sherpas may have converted forest to grazing land to accommodate the needs of their yak,⁸ those landscape-transforming processes gave way to forest conservation practices.

Crisis?

So for a variety of reasons, the initial impression of environmental crisis that motivated the area's early visitors to push a national park and plan for it has begun to give way in the face more careful investigations of environment/human interaction. An essentially **cultural** landscape was misperceived by visitors perhaps expecting a natural wilderness, and certainly affected by their preconceptions. The historic role of human activity was missing from the equation, as was a sensitivity to the needs and expertise of local people. The earliest park planners and those who have followed them as Sagarmatha's managers share thorough training in *biological* approaches to resources. That has thus been the orientation and emphasis of plans for the park.

Involving Local People

This is not to say, however, that concern for the resident Sherpa has not also figured in management strategies for Sagarmatha. The area is designated both a natural and **cultural** heritage site by UNESCO; interest in the Sherpa apart from their landscape dates at least from Tenzing Norgay Sherpa's triumph on Everest in 1953. Almost from the first there has been an interest in understanding Sherpa society (Haimendorf, 1964; Hardie, 1974; Bjonness, 1979; Sherpa, 1979) and in involving resident Sherpa in park management. The park designers' efforts to include locals follow very much the pattern outlined earlier.

There was an early recognition that in order to succeed, the park would need the cooperation of locals. Conservation education was the forum first chosen to engender such cooperation:

Conservation Education is regarded as equal in importance to that of establishing nurseries and planting-out seedlings. It is important to pass across to the local people the reasons for the establishment of the national park, and why forests need to be preserved. . . There is much local antipathy to the national Park, much of it brought about by complete ignorance about why the park was created. It is up to the Park authorities to get alongside the local people, to convince them that they are working towards the same cause. . . DRINK MORE CHANG! (Halkett, 1981, no page number)

Outreach efforts ranged from public meetings at which park goals were explained to warden-initiated programs in the local schools in which conservation objectives and practices were taught . . . to, it would appear from Mr. Halkett's exhortation, beer-drinking sessions in local tea shops.

Park jobs were used as a lure to locals perhaps resistant to the idea of the park and its usurpation of traditional authority over land and resources. Women were trained to maintain park nurseries, and a small contingent of able young men of Khumbu was sent to New Zealand to earn a degree in park management: preparation for the role they would assume as wardens of Sagarmatha and other of Nepal's newly established national parks. There has been additional limited recruitment since of resident Sherpa for a variety of park-related tasks.

In further efforts to ensure local support and participation, an advisory committee for Sagarmatha was established that joined Western advisors and Kathmandu officials with local secular and religious leaders.

Perhaps most innovative, and potentially promising, was the effort made to incorporate traditional Sherpa institutions in park management. Tapping a deeply held faith in Tibetan Buddhism and the Sherpa's precedent for protected forests, the park recruited the abbot of Tengbuje monastery--a member of the advisory committee--to bless the initial outplanting in the plantations. Beginning in the early 1980s, apparently with impetus from its first Sherpa warden, the park also sought to integrate a Sherpa system of *shing gi nawa*, forest guardians, into the park management structure. The warden designated and paid villagers who assumed some of the responsibilities formerly held, at least in some Khumbu villages, by representatives authorized by each community to regulate the use of forest products (M.N. Sherpa, personal communication, 1982). This precedent was followed more recently when the current warden sought to establish a park-sponsored version of another indigenous mechanism for regulating the use of resources, this one concerned with livestock (S. Pandey, personal communication, 1990).

Conservation as Colonialism?

But these promising-sounding ventures have largely led to the same sorts of disappointments that seem to afflict most efforts to involve local people in conservation and development. Antipathy to the park remains widespread; circumvention of park regulations continues; active interference in park projects flares up from time to time, quite literally, in the form of plantation arson. I argue that these shortcomings arise from the fundamentally flawed assumptions underlying park planning and management, from a preoccupation with biology and inadequate attention to culture, and from the arrogance and lack of vision that characterize development efforts in Sagarmatha as almost everywhere else.

Public meetings and classroom presentations intended as conservation education have been sales pitches, a one-way promotion of conservation in its Western guise. The arguments offered in support have been the arguments based in the Crisis Model: We are dealing with impending environmental disaster in Khumbu, and must take extreme measures to address it! But when such a message is at variance with a people's own long term experience, how compelling can it be?

While some jobs have gone to Sherpas, and undoubtedly shaped favorable opinions in those who benefit, others are resentful. As is so often the case in Nepal, patronage is one way to explain the selection of nursery workers, who in several cases come from the same families as the men chosen for education abroad.⁸ Those chosen ones, talented and hardworking to be sure, come for the most part from the old wealth and influence of Khumbu--another source of discontent for some of their neighbors. But the greatest resentment comes from the fact that most jobs provided by the national park go not to Sherpa but to *rongba*, lowlanders: caste Hindus and tribal peoples not native to Khumbu who have become part of the park labor force by virtue of their employment in the army (which provides most park manpower), police, or other central government institutions. Their numbers, which include nearly 150 soldiers working for the park, bring no perceptible benefit to the Sherpa but do add to the stresses on Sagarmatha's resources and society. Accommodations for *rongba* require significant quarrying of stone and some local timber cutting; their cooking fires, though supplemented at Namche Bazar headquarters by a few electric cookers, make further inroads into park forests; lowland ritual and values are often at odds with those of the Sherpa and the park, as when employees of the government's livestock development farm cut sacred juniper to make their Dasain festival swing, or were charged with poaching musk deer.

The inclusion of Khumbu Sherpas in the park's advisory committee has also been something of a sore point. Secular leaders invited to participate in park planning represent the influential and articulate of Sherpa society, often those whose work in tourism or politics removes them somewhat from the daily reality of life in Khumbu. Their concerns may be influenced more by close association with Westerners than by intimacy with the needs and expectations of their former neighbors; their recommendations may sometimes be expected to answer the particular situations of their families and friends rather than the general welfare.⁹

While the idea of incorporating indigenous conservation mechanisms into park management practices was a good one, here, too, results have fallen short of expectations. Co-opted institutions, it seems, don't have quite the same effect as the real thing. A *shing gi nawa* designated, paid, and directed

by the national park's authority lacks the legitimacy of a village's consensual choice, even when he bears the same title. Traditional subsistence conservation strategies may be amenable to appropriation by imposed institutions, but the process must involve more than borrowing a name and a rough approximation of duties.

Conclusion

The inefficacy of the park's efforts to institutionalize the *shing gi nawa* encapsulates the shortcomings of efforts in Sagarmatha to include local people in a meaningful sharing of the responsibilities for managing the environment. And the lessons from Mt. Everest apply, I think, across the board:

It's not enough to go through the motions of involving local people, to assume that a simple show-and-tell approach will somehow generate acceptance and support. It can't be a one-way exchange.

Those sincere about co-management must be open to what local people have to teach, to acknowledge their experience, their perception, their vision.

Above all we must recognize the limits of our own perception and expertise and be alert to the constraining effects of our assumptions and training: we need to remember, always, that we might be wrong.

Barbara Brower is Assistant Professor of Geography and Asian Studies at the University of Texas at Austin.

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1. The penetrating effects of this training and the legacy that shapes it are discussed by various authors and summarized in an extremely useful article by Fortmann and Fairfax (1989) which should be required reading in all schools of forestry.
- 2 For trained resource professionals, conservation education, aside from this practical value, is a Good Thing in itself: learning to appreciate the importance of good stewardship is, after all, the principle goal of training in resource conservation and management.
- 3 Again, the resource planner's motivation for designing in such alternative employment may well extend beyond practical issues to considerations of humanity and equity. But certainly an important objective of conservation and development projects that include job opportunities for displaced locals has been to defuse objections and ensure cooperation.
- 4 This vision of the indigene as careful steward seems to have gained ground with the rise of environmentalism, when a movement looking for models of sustainability seized (a little uncritically) on Chief Seattle and his ilk.
- 5 Within agricultural economics, the investigation of indigenous agroecological practices also has a place (see for instance Altieri, 1990; Gliessman et al., 1981).
- 6 An early report from New Zealand's first reconnaissance mission (Lucas et al., 1974) identified three sites as examples of catastrophic overgrazing, including a conspicuous debris flow on the edge of the village of Khunde. A closer, more dispassionate, less

alarmist look at this feature and the others the report identified show all to be a consequence of geomorphological processes having nothing to do with surface disturbance. But the blinkering effect of the assumptions under which they operated led early visitors to similarly unsupportable interpretations (if we let ourselves assume no willful misrepresentation on the part of these park promoters).

⁷ This despite a potentially prejudicial stratification system based on lands predesignated "overgrazed" on superficial evidence from early studies (Bjonness, 1979; C. Thorn, and A. Byers, personal communication, 1984)

⁸ Though perhaps equally possible that natural fires have maintained these dry south-facing slopes free of trees, and that Sherpa occupation and land use have inhibited fire and thus permitted the expansion of forest (A. Dennis, personal communication, 1990)

⁸ An alternative explanation, perhaps likelier, is that only the families of the returned recruits could be persuaded to accept the poorly paid, low-status jobs of nursery attendant in an economy transformed by lucrative opportunities in tourism.

⁹ An example of either self-interest or isolation from the community comes from a recent decision of the park's Sherpa advisors to endorse the creation of additional fenced plantations near Namche Bazar (A.P. Sherpa, personal communication, 1990). For wealthy stockkeepers such as several of these advisors, with access to household labor and capital to buy fodder from more productive areas below the park, lost grazing is no obstacle. But for less affluent villagers, the additional pre-emption of grazing around Namche works considerable hardship.