NEPAL: KHUMBU HIMAL, SHERPAS AND LANDSCAPE

CHANGE

The visitors to these highest of the world’s mountains are overwhelmingly lowlanders from the urban centres of the industrialized countries. Similarly, the scientists who undertook the initial research that induced the Government of Nepal to establish Sagarmatha (Mount Everest) National Park were Westerners and predominantly lowlanders. Western and lowland concepts have been applied to development of a world class highland natural and cultural resource. Tourism has been a primary vehicle. Results have been both positive and negative, but misunderstandings and misconceptions have frequently acted as powerful driving forces.

The names ‘Khumbu’, ‘Sherpa’, and ‘Mount Everest’ have been entrenched in the minds of adventurous youth and all mountain aficionados for at least a half century. Aside from the continuing increase in mountaineering ventures, Namche Bazar and the Everest base camp have become synonymous with adventure tourism and trekking to the point that, by the mid-1990s visitors to the Sherpa homeland outnumbered inhabitants by about three- or four-to-one (the present ratio may be as high as 6 : 1).

Closure of the frontier with Tibet by the Chinese in 1959 brought with it a significant flood of Tibetan refugees into the Khumbu, some of whom stayed, while some moved on. It also heralded a potentially disastrous impact on the indigenous Sherpa way of life which had depended upon free access to Tibet for trade and yak
grazing. Disaster, however, was averted as employment opportunities for high-altitude guides, sirdars, cooks, and porters presented themselves to the very adaptable Sherpa, almost simultaneously with the closure of the frontier. Nevertheless, the numbers of visitors continued to increase and central government control from Kathmandu began to be felt. Nationalization of Nepal’s forests in the 1960s and establishment of the Sagamartha National Park in the 1970s were two of the major administrative changes that carried heavy implications in terms of traditional Sherpa autonomy and control of the mountain environment (forest nationalization proved to be a mistake nation-wide and has since been rescinded by new forest legislation).

This case study seeks to review briefly the changes that have occurred in the Khumbu since about 1950 and attempts to explain at least some of these changes. In terms of highland-lowland interactions, once again there are many cause-effect processes with some positive, some negative. These include political and economic pressures from outsiders (HMG of Nepal, development donors, NGOs, trekking companies, and individuals), the Sherpas’ own varied responses to opportunities presented by the growth of tourism and mountaineering, the actual and potential impact of high-mountain natural hazards, the creation of the world’s highest garbage dump and its many consequences, and a construction boom that has included hydroelectricity plants in supposedly protected World Heritage territory.

The Khumbu has also attracted an enormous amount of scholarly research, involving a wide range of disciplines. There has been, it might be said, the expected series of misinterpretations, mis-statements, and determined adherence to cherished
mountain myths that, especially during the first half of the period under consideration, distorted development policy.

The early campaign to establish a national park produced some surprising recommendations. First, the Western scientists and scholars, whose expert advice was requested by the central government of Nepal, appear to have been committed to the traditional United States concept of national parks as untouched wilderness areas. This goes back to the establishment of Yellowstone and Yosemite national parks in the previous century. Rumours abounded to the effect that, with establishment of the Sagarmatha National Park, it would be necessary to evict all Sherpa communities from within the proposed park boundaries. Had this been carried out, it would have destroyed a world-renowned mountain culture.

Many reports were also submitted (and many were published) inferring that within the proposed park boundaries deforestation was rampant. This was intended to accelerate the political process for official park designation before the predicted catastrophic landscape degradation occurred. The supposed process of deforestation was related to a number of factors: indigenous population growth with increased demands for fuel wood and for timber for new houses; exponential increase in the numbers of trekking tourists and their supporting porters with associated tree cutting for cooking fires and recreational camp fires, as well as a boom in construction of small hotels and tea houses.

These alarms even included specific published statements by internationally respected scholars; for instance, “forests in the vicinity of the [Khumbu] villages have already been seriously depleted, and particularly near Namche Bazar whole
hillsides which were densely forested in 1957 are now bare of tree growth and
villagers have further to go to collect dry firewood” (Fürer-Haimendorf,
deforestation [has occurred in Khumbu Himal] during the past two decades than
during the preceding 200 years.”

It is generally assumed that these alarmist and supposedly scientifically-based
observations and recommendations had the desired effect of influencing the creation
of the Sagarmatha National Park. Fortunately for the Sherpa, their world-wide fame
ensured international reaction to the prospect of eviction from their homeland. For
this, and other reasons, the Sherpa villages were ‘saved’ and now exist as enclaves
within the park.

The claims of imminent and disastrous deforestation were shown to be gross
exaggerations, some as completely inaccurate. Dr. Charles Houston, a member of the
original Mt Everest reconnaissance, reported that there “was as much or more forest
cover [in 1981] than there was in 1950 and I have the pictures to prove it” (Houston,
1982). Byers (1987a, 1987b) corroborated this and replicated photographs taken by
Erwin Schneider and E. Maillart between 1955 and 1963. Several of Schneider’s high
quality photo-theodolite prints depicted hillsides that Fürer-Haimendorf had
described as densely forested in 1957. Byers was able to show that certain hillslopes
had already been bare of trees in 1955, two years before Fürer-Haimendorf had made
his oft-quoted statement of their being densely forested (in fairness to the latter,
much of the exaggeration was due to the way he has been quoted by others).
Regardless, Byers made three relevant conclusions:
1. that most forested areas in the Khumbu-Khunde-Khumjung area appear relatively unchanged between 1955-1962 and 1985;
2. considerable thinning of juniper woodlands has occurred in the vicinity of treeline;
3. little medium- to large-scale geomorphic change is discernible.

Byers also undertook detailed fieldwork that included palynological investigations of a series of soil profiles and maintenance of more than 30 soil erosion study plots throughout one entire monsoon season. From this he was able to propose that while deforestation in the Khumbu has occurred, it had extended over a period of more than 200 years. Furthermore, he produced evidence from radiocarbon dating of charcoal within his soil profiles, together with identification of grains of cereal pollen, that human modification of the Khumbu landscape may have occurred long before the traditionally accepted date of the arrival of the Sherpa about 400 years ago (Byers, 1987b: pp. 204).

Since the initial work of Byers, there have been several highly relevant publications (Brower, 1990, 1991; Brower and Dennis, 1998; Stevens, 1993) that provide general support for the original challenge to the alarmist literature. Byers (1997) has also refined and further developed his photo-replication work. As is usually the case when a period of basic reconnaissance is followed by more intensive research, it has become clear that the patterns of landscape change in the Khumbu are much more complicated than hitherto believed. Nevertheless, this progression of
the search for knowledge demonstrates how the highly simplistic (and politically oriented) approach of the 1970s has unduly influenced policy formulation.

The foregoing discussion is not intended to leave the impression that change in the Khumbu has not occurred. There has been socioeconomic change on a grand scale, both positive and negative. Brower (1991) has demonstrated that the transition from a trading-plus-subsistence farming economy to a trekking-tourist dominated way of life has had far reaching effects. For instance, the use of livestock (yak and yak-cow cross-breeds) for portering in support of the trekking groups has radically changed the pattern of transhumance (as well as the very cross-breed mix). Today there is less grazing in the more distant, higher altitude pastures and more close in to the villages where the trekking groups seek to hire the animals. This in turn has affected vegetation growth patterns, as well as crop management, and the manner of fuelwood collection. The demand for young male Sherpa for high-altitude expeditionary work has led to reduction of available farm labour. This has been further augmented by the outflow of some of the younger Sherpa from the Khumbu to operate small hotels and trekking company offices in Kathmandu. With this loss of Sherpa male workers from local agriculture (including mountaineering death and injury), temporary labour is hired by the female household heads left behind, usually from other ethnic groups from the lowlands. Furthermore, the substantial increase in overall Sherpa wealth, albeit with inequalities between villages according to their proximity to the main trekking routes, has permeated the entire Khumbu region.

Another impact, the result of foreign aid, has been the introduction of hydroelectricity. The first serious attempt involved Austrian construction of a small
power station at Thame (Namche Small Hydel Plant). In August, 1985, when the plant was nearing completion, a glacial moraine-dammed lake, further upstream in the Dudh Kosi valley, burst and released about 5 million cubic metres of water. Within minutes, the hydroelectric plant was destroyed. Subsequently, all the Dudh Kosi bridges were washed out for a distance of 60 km downstream (Ives, 1986; Vuichard and Zimmermann, 1987). This catastrophic event caused remarkably little loss of life because of its timing during the monsoon season and on a day of religious festival when the local people were mostly well away from the river. However, it did bring into focus the acute danger of the sudden outbreak of glacier lakes. Three such events have now occurred in the Khumbu alone since 1970. Furthermore, rapid emergence and expansion of a lake on the lower surface of the Imja Glacier was observed in 1986 and has since been closely monitored (Watanabe et al., 1994, 1995). ‘Imja Lake’ is now more than 1 km long and 120 m deep. While the likelihood of a catastrophic outbreak cannot yet be precisely calculated, if such an event were to occur, and if the timing were to coincide with the trekking season, it would directly imperil long stretches of the main trekking route to the Mount Everest base camp. In a worst case scenario, this would place at risk the lives of hundreds of trekkers and their porters. Furthermore, the very large volume of water available in ‘Imja Lake’ would likely extend the downstream effects out onto the Terai lowlands.

The impacts of hydroelectric development and the threat of glacier lakes are significant and deserve special treatment as they relate to large areas of the Himalaya and Karakorum, and other glacierized mountain ranges, such as the Alps, Caucasus,
Tian Shan, Pamir, Andes, and Alaska Coast Ranges. However, it is beyond the object of this case study (Lliboutry et al., 1977; Hewitt, 1985, 1997).

In conclusion, the ‘opening up’ of the Himalayan mountain landscape, with its distinctive Sherpa culture, to lowlander access has brought change on a vast scale. There has been increased wealth in general, better health care, higher levels of education and literacy, a national park and World Heritage site have been established and, contrary to earlier speculation, the natural landscape has survived remarkably well. Nevertheless, there has been a disproportionate loss of young male lives; a degree of localized deforestation has occurred although this has been partly compensated by replanting. With increased wealth, the Sherpa community as a whole has reinforced its traditional contributions to preservation and development of the monasteries. A very large number of lowlanders have experienced the joy of trekking in very high mountains, although some have lost their lives to accident and hypoxia, but probably fewer than if they remained on the streets of New York or Rome. The penetration of a World Heritage landscape by hydroelectric power lines creates a quandary, likewise the early mis-reporting, even falsification, of environmental conditions in order to influence policy making. One of the important lessons to be learned, however, is the critical role played by the very resilience and adaptability of the Sherpa ethos. Their long tradition as ‘Tigers of the Snows’ through their association with the British pre-World War II expeditions to the north side of Mount Everest, and similar ventures, as well as their indigenous entrepreneurial abilities as long-distance traders and travellers, equipped them to face the enormous changes that swept over them after about 1960.
The more strictly physical and hydrological aspects of highland-lowland interaction, in the form of the periodic outburst of great volumes of glacier-melt water, may well accelerate in the future as the glaciers of the Khumbu continue to thin and retreat. This is by no means unique to the Khumbu. Nevertheless, an unfortunately timed catastrophic release from the Imja Glacier could conceivably eliminate hundreds of lives and have a major impact on trekking tourism that is the region’s current mainstay. The central government certainly has not done enough to mitigate this potentially serious problem.