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Shahnawaz

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All human beings must satisfy their basic needs. When they cannot do so, they compete with their fellow beings, get involved in conflicts, and sometimes exert violence. In many parts of the Himalayas, the potential for conflicts linked to the use of natural resources to satisfy basic needs is high because traditional livelihoods depend very much on agricultural land, pastures, and forests. A negative balance of demand and supply drives people to obtain resources forcefully wherever possible, which frequently leads to confrontation. Such conflicts can be mitigated by providing people with other sources of income and reducing their dependence on the limited local resource base. The people of Pangi Valley in the state of Himachal Pradesh, India, have experienced these processes and have now reached a stage where conflicts over natural resources are no longer a major concern. The availability of alternative economic opportunities has enabled people to free themselves from the constraints of traditional livelihoods based only on local natural resources.

The potential for conflict

Conflicts generally grow out of a clash of interests, in which the opponents may be individuals or groups, depending on the nature of the issue, and repercussions may be multidimensional. Many inter- and intranational tensions have arisen in relation to the sharing of natural resources, primarily water. Resource issues in the mountains, however, are connected primarily with agricultural land, pastures, and forests. Livelihoods in many Himalayan areas are heavily dependent on local natural resources. As long as people have adequate access to resources, they can live in harmony. When demand increases over time and resource availability decreases, however, the well-known Tragedy of the Commons situation arises. Moreover, a lack of alternative sources of livelihood to relieve the growing pressure on limited natural resources can lead to a "tragedy of the communities" situation, characterized by community conflicts. Such incidents of conflict, which escalate into violent confrontations involving village communities, have been known in Pangi Valley.

FIGURE 1 People from Praghwal and their livestock living in temporary houses constructed on land belonging to the Pre Graon village. (Photo by Shahnawaz, 1993)

Challenging conditions

Pangi Valley is located in a quite remote setting in the upper Chandra-Bhaga or Chenab Basin. It is a division of Chamba District in the northern part of Himachal Pradesh, India, and accordingly has the lowest status in the hierarchy of administrative units. It is surrounded by small sections of 2 mountain ranges—the Great Himalayan Range on its northern, western, and southern boundaries and the Pir Panjal Range on its eastern boundary. Altitudes vary from 2200 to 6500 m, with the highest settlement situated at 3570 m. Traditional agriculture mixed with livestock production is the mainstay of the economy. The semiarid climate is characterized by cool summers with little rain and severe winters. Heavy snowfall keeps people confined to their houses in winter. Most outdoor activities—such as crop cultivation, harvesting, threshing, animal grazing, and fodder and fuelwood collection—are carried out in the 5–6 summer months. Pangi Valley is 1 of the 5 Scheduled Tribal Areas of Himachal Pradesh.

Population pressure and limited resources

The terrain and climatic conditions permitted little interaction between Pangi

TABLE 1 Relevant statistics for selected villages involved in conflict. (Source: District Census Handbook, Chamba District, Himachal Pradesh, for the years 1961, 1971, 1981, and 1991)

Conflict	Village	Altitude (m)	Area (ha)	Population			
				1961	1971	1981	1991
1	Praghwal	2500	166	186	224	277	391
	Pre Graon	3100	239	51	72	148	90
2	Luj	2500	538	274	348	423	518
	Kuthah	2760	1303	138	159	227	247
3	Malet	2600	53	221	294	436	478
	Hundan Bhatori	3500	765	134	170	235	313

Valley and the areas across the high-mountain ranges, including the district headquarters at Chamba town located 150 km away. This forced people not only to depend solely on local natural resources but also to procure their annual supplies of food, fodder, and fuelwood during the short summer season. These circumstances virtually require double the normal area for each source of supply as well as double the effort. Limited interaction and the low administrative status of the valley also hampered the developmental process and emergence of new economic activities. At the same time, the population continued to grow, exerting more and more pressure on resources; people continued to search for new resource pockets that they could exploit to meet their needs.

Neither the population nor the natural resources are distributed homogeneously, and in many cases there are great imbalances. Moreover, each village requires agricultural land, pastures, and forests, but not every village has all the resources it needs within its defined borders. In many cases villages at lower altitudes have forests but no pastures, whereas many villages at higher altitudes have pastures but no forests. In such cases resource sharing is arranged traditionally. The increasing population forced almost every village to expand agricultural land into grazing areas or forests (or both) and to amass greater amounts of fodder and fuelwood. Declining resource availability gradually became a point of conflict between many villages.

Spatiotemporal population patterns

Archeological evidence points to inhabited pockets and well-organized village communities in different parts of Pangi Valley from the beginning of the 12th century. The total population seems to have remained quite small; a population of only 3510 was recorded for the year 1881. This rose to 7449 by 1951, which was a little more than twice the population of 70 years earlier. Greater increases have occurred in recent years: between 1951 and 1991 the number of inhabitants almost doubled to 14,960. The growth rate per decade varied from 13.42% between 1951 and 1961 to 22.06% between 1981 and 1991.

Compared with the villages situated at higher altitudes, lower-altitude villages are generally smaller in terms of geographical area and have greater populations as well as greater net increases in population. For this reason, many villages at lower altitudes began to face scarcity of natural resources, which they eventually attempted to obtain in higher-altitude villages. This generated conflicts among village communities. In some cases these conflicts were not too serious, but at least 3 turned quite violent (Table 1).

Conflict breaks out

The first case was reported in the summer of 1978. About 10 families from the village of Praghwal moved into the village of Pre Graon with their livestock and occupied a portion of the grazing land. Initially, there were hot arguments and negotiations between the 2 groups, with Pre Graon offering to allow the "newcomers" to use the pastures for grazing provided that they went back to Praghwal. But the villagers from Praghwal insisted on living in the occupied area, converting some grazing land into agricultural fields, and constructing new houses in the near future. At this point the villagers of Pre Graon organized and attacked the newcomers, leaving many people injured on both sides. The matter was reported to the police and later brought to court at Cham-

FIGURE 2 People from Praghwal cultivating potatoes on fields carved from grazing land traditionally lent to them on a seasonal basis by the Pre Graon village. (Photo by Shahnawaz, 1993)

ba. Nevertheless, the newcomers built temporary shelters for themselves and their livestock and also cleared land for cultivation (Figures 1, 2).

The second incident took place between the villages of Luj and Kuthah in the summer of 1993. Luj has no pastures and Kuthah has no forest, so the 2 villages traditionally shared these resources. The fuelwood requirements for an increasing population caused depletion of the forests, with some patches becoming almost treeless. For 2–3 years, the inhabitants of Luj (Lujers) asked the residents of Kuthah (Kuthahias) to search for another area for gathering fuelwood, but this proved difficult. In 1993, as residents of Kuthah were collecting fuelwood from the forest, they were stopped and beaten up by people from Luj. On the same evening, the Kuthahias used violence against the Lujer shepherds in the pastures, driving them out along with their livestock. Later, the authorities intervened and proposed to divide both resource areas equally between the 2 villages. But the Lujers argued that any division should be in proportion to population, as they had more inhabitants, whereas the Kuthahias calculated that they would lose a larger share of pastureland and gain a smaller share of degraded forest. The conflict went unresolved, with unpleasant incidents continuing for 2–3 years.

The authorities were confronted with another instance of conflict between the people of Malet (Maletias) and Hundan Bhatori (Bhots) in 1994. Malet has a very small total area that does not include forest and grazing lands, although it has traditional rights of use in 2 other villages. Its grazing rights are in the upper parts of Takwas village, below Hundan Bhatori. The livestock population in Malet was increasing, and the Maletias were searching for more grazing area. Some of them attempted to occupy the adjacent pastures in Hundan Bhatori in 1994. Here, they had a violent encounter with the Bhots, resulting in serious injuries and defeat because the Bhots greatly outnumbered them. The case was brought to court, but the Maletias continued to attack the Bhots every now and then because the Bhots had to pass through the lower-altitude villages, including Malet, on the way to their homes.

Although these conflicts have not been resolved and a legal judgment is still awaited, they no longer cause violent confrontations. As people gradually realized that the local resource base was insufficient, they began to seek other sources of income.

FIGURE 3 A newly established automatic telephone exchange in Pangi Valley, operated by solar batteries. Construction of this installation was a welcome but temporary source of income for the local population. (Photo by Shahnawaz, 1997)

Decentralization and new economic opportunities facilitate mitigation of conflicts over resource use

The process of change remained very slow in Pangi Valley until 17 years ago. Apart from natural factors, the change was hampered mainly by decision-making processes. Pangi Valley is a low-level administrative unit, and officials posted at this level have minimum decision-making powers. They require permission and finances from the district headquarters to commence any important developmental project. The financial year in India begins on 1 April and closes on 31 March. Financial allocations lapse if not used in the same year; new permission is required for

FIGURE 4 Daily wage laborers at a road construction site in Pangi Valley. (Photo by Shahnawaz, 1997)

the next financial year. Major development activities did not function properly because of bureaucratic procedures, poor means of communication, and summer being the only working period. People failed to find alternatives and have continued to depend on traditional livelihoods based on limited local natural resources.

The state government enacted special financial provisions for all 5 Scheduled Tribal Areas in 1974 and put them on a permanent financial footing. But the development process in Pangi Valley still suffered because decision makers were located outside the valley, and communications did not improve. The situation began to improve more rapidly only after the empowerment of local officials. A new system called Single-Line Administration was introduced in Pangi Valley, and the highest ranking newly established local-level officer, the Resident Commissioner, was given considerable decision-making power in 1986. For many years, the focus was on improving education, health care, and other modern infrastructure (Figure 3). Introduction of high-yielding seed varieties and chemical fertilizers was the major intervention in the agricultural or traditional economic sector, but it did not succeed because the people found it unsuitable to the local soils and climate. However, commencement of small-scale construction projects provided casual labor to some people living near the construction sites.

The next phase of empowerment came in 1995, when the Panchayats, or village-level elected bodies, were incorporated into the decision-making process. Now the funds are disbursed among the Panchayats, whose presidents can decide about the developmental activity they want to carry out in their area. Construction of many roads and many official buildings has been commenced, providing daily wage labor to large numbers of people from all villages (Figure 4). At least 1 member from 80% of the local households works at construction sites during the summer season, and the educated ones are obtaining jobs.

Of course, wage labor is not an activity to raise living standards, and the efforts to decentralize political power have no inbuilt mechanism to prevent conflicts. But people can now earn enough to buy food and other daily necessities from controlled-price shops. Many people have become engaged in business and transportation. Now, they need not depend solely on the limited local natural resources, which are already depleting because of population pressure. The availability of alternative economic activities is not only reducing the pressure on natural resources but also mitigating existing and potential conflicts among the villages over natural resource use.

AUTHOR

Shahnawaz
Department of Geography and Applied Geoinformatics, University of Salzburg, Hellbrunnerstrasse 34, A-5020 Salzburg, Austria. s.shahnawaz@sbg.ac.at

Shahnawaz holds an MA in Geography from Panjab University, Chandigarh, India, as well as MPhil and PhD degrees in regional development from Jawaharlal Nehru University, New Delhi, India. Since October 2000, he has been a guest professor at the Department of Geography and Applied Geoinformatics, University of Salzburg, Austria.

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