

The Indian Himalayan Region: Harmonising Livelihoods and the Environment

A Personal Essay

Prodipto Ghosh, Distinguished Fellow, The Energy and Resources Institute, India, prodipto5@gmail.com



Kamal Banskota

Landscape in North East India

About 120 million years ago, the world was a different place. Two large land plates, now known as India and South America, were adrift in the southern ocean, having been excised through geological upheavals from the great mother continent of Gondwanaland, but still bearing in their vegetation and animal forms evidence of their common origin.

Then, about 40 million years ago, two landmasses, those of India and Eurasia, collided, leading to huge tectonic events. At their junction arose the majestic Himalayas, the world's highest mountain range with peaks of nearly 9000m, which are still rising about 5 cm a year as the Indian plate has not yet fully come to rest. The new mountain ranges walled-in the warm, moisture laden winds from the southern ocean, and the Indo-Gangetic Plain and the plateau of the Deccan gained their summer monsoon climate, their magnificent rivers, their silt-laden plains, and their ability to give and sustain life. The heart of Central Asia turned cold, dry, and much less hospitable to life than it had been earlier.

Gradually, modern humans, *Homo sapiens*, evolved on earth from their primate ancestors, *Homo erectus*. From their original home in what is now the Kenyan Highlands, this curious, intelligent, but vulnerable species with strong instincts of territory and kinship made its way across the world. Thus, humans found their way to India, and indeed, eventually, to all habitable continents, overcoming barriers of geography and climate. Some groups adapted to life in the high Himalayas, others took to the plains and the Deccan. In the course of millennia, they coalesced into hunter-gatherer bands, then took to agriculture and trade, and started living in villages and towns. These communities eventually grew



Harvesting tea in Assam, India

into civilizations, kingdoms, and empires. Peoples from other regions also trickled in, mostly with peaceful intentions of settling down in harmony with the original inhabitants, but some in a rush to conquer the land and subjugate its people. Eventually, all were assimilated into the great melting pot of the human race. The population increased to scores, then hundreds of millions. Their incredible heterogeneity was reflected in their many languages, dialects, religions, sects, and, indeed, the diversity in their physiognomies. Science, mathematics, the arts, drama, sculpture, and architecture flourished and spread through the entire ancient world.

How exactly was this flowering of the human spirit sustained? What gives stability and renewal to the material basis of this millennia-old culture? And what are the prospects that the universal human urge for a better life can be addressed without its irreparable degradation?

The monsoon rains drench the Indian landmass once the peak of summer has passed. In the mountains, the water soaks into the soil and the underground aquifers. The momentum of the rains is arrested by the thick canopy of the forests and their natural carpet of fallen leaves. The mountain forests also generate fresh soil from hard rock by complex physical, chemical, and biological processes in their roots. The retarded surface run-off from the monsoon torrent merges into a skein of delicate streams and, eventually, into mighty rivers, carrying off the fertile, older soil to be deposited tens, or perhaps thousands, of miles away in the flood plains and irrigated farms that nourish many millions. Later, in the winter, it does not rain, but snows. The snow settles on the mountain slopes and congeals into the rivers of ice, called glaciers, which creep slowly down. Still later, as the sun gains in ferocity, the snow and ice melt, the rivers are once more replenished, and the thirsty population gets its drinking water.

The mountains and their mantle of forest do more. The mountain slopes and valleys, with their widely varying aspects exposed to the sun, rain, and wind yield a rich spectrum of ecologies. In their forests, pastures, streams, and lakes a myriad of life-forms, from micro-organisms to the many species of plants, insects, birds, mammals, and reptiles, compete for sun, soil, water, heat, and nourishment, often living off each other, either as predators or parasites, or in symbiotic relationships. The many varieties thus constantly evolve, as random variations produce new candidates and natural selection picks the survivors. The complexity of these ecological relationships ensures that the system as a whole survives prolonged

droughts, spells of excess rain, storms, or the landslides and earthquakes which are evidence of the newborn character of the mountains in geological terms.

The diversity of plants and their insect benefactors are a genetic repository for the breeding of new crops by farmers, and the flora of the mountain forests are the basis of traditional medicine. The local people's traditional knowledge of such plants and creatures anticipates modern science, and can indeed add immense value to efforts in the latter domain for the benefit of all humankind. But the mountain forests also yield food, fuel, and timber for the local population. They stabilise the loose soil and rocks on the slopes, and thus prevent or mitigate landslides; calamities that could in an instant engulf whole villages that have stood for centuries, and that enshrine the memories of families and the history of clans.

The peoples of the mountains, each in their valley fastness, segregated from one another by high ridges as well as largely from the plains, developed a patchwork of languages, cultures, and ways of making a living. Their ecologies were highly varied due to variations in sun, rain, vegetation, and elevation. Some evolved into settled agriculture and traded with the plains and the highlands to the north. Others found that shifting cultivation or hunting-gathering was more attuned to their resources and temperaments. Over the last century, as populations grew, the mountain's natural endowments came under pressure and the youth turned to the city lights of the industrial revolution taking shape surely and rapidly in the plains.

Mountain people were never rich, but now the disparities between them and the city folk began to rankle. They desired, for the present, some of the necessities of a decent life, like clean water from a tap, so that their women folk would not have to trudge uphill and down to fetch water from mountain streams; sanitation, so that

answering the call of nature did not involve the risk of an encounter with a leopard, nor cause intestinal disease; homes that were safe from earthquakes and warm in winter; and clean fuel for their hearths, so that their wives and children would not die early of emphysema. They desired roads, because roads eliminate mental, no less than physical, distance, and electricity, so that light, communications, and information could stream in and so that they would know of important, distant events. Their youth would not be content with being casual domestics and sentries in the city, as their fathers had been. They aspired to education, education that terminates past social and economic disadvantages. The education which they believe would one day fill the hills with the relief of prosperity.

The climate of India, the water in its rivers, the soil on its farms, and its wealth of life forms are all ultimately the gift of the mountains and depend on the wise stewardship of resources by the mountain people. Until now, mountain people have received only symbolic acknowledgement for this stewardship. But they have understood that they are poor, that poverty is demeaning, and poverty is the absence of many things, mostly material ones. Their stirrings for development, no less than in the plains, must, however, disturb their ancient ways of husbandry.

The hydropower dams that yield the magic electricity would also submerge pristine forest and disintegrate whole communities. The roads that bring the teachers and take the seriously ill to hospital would provide pathways for the illicit, nocturnal plunder of the forests by contractors and their accomplices. There would be landslides and long-established hydrologies would be arrested; the rivers would run dry and drinking water would vanish. The roads would help convert terraced crop fields to orchards, and the carefully husbanded traditional crop strains would disappear. And while traditional medicine is investigated by industry, its plant base in the forests is being depleted. The mountain folk take refuge in rapid-cure allopathy and no-one goes to the elderly vairs, and gradually their accumulated knowledge is lost. The pucca homes would be built of brick and cement, and the clay and limestone to make these would be cratered out of the valleys and hillsides. In part, a better life would come with the roads and electricity and sanitation, and with them, resorts offering better-paid jobs to English speaking waiters and bellboys to serve regiments of well-attired tourists.

The mountains are thus the stage for a tragic conundrum. On the one hand, mountain people have realised some of their hopes for a better life. On the other, the natural resource base to sustain this life, and the ecological

basis of the ancient civilization, its water, soil, and the genetic diversity of its creatures, is being diminished. The loss of the forests will also impact on the world's climate, and the loss of the genetic pool will harm the future well-being of everyone. It is, of course, paternalistic and rude to ask the hill people to eschew the modern, industrial lifestyle and "not to repeat our mistakes". But, there are things that the national government and the global community can do to forestall a tragedy.

The first is to develop the techniques and regulatory structures to ensure that the needed infrastructure for electricity, roads, hotels, and housing does minimal damage to the ecology. Infrastructure one must not prevent; but prevent one must unnecessary damage to natural resources. If these measures cost money, the nation as a whole must provide it.

The second is to restore the rights of management of the forests to mountain people. Not to deny the science of forestry, but to ensure that the science is applied by and for them. Forest departments must accept partnership with hill people, not seek to control them for all time. The (illicit) forest contractors would then find no local accomplices and every hill person would become a willing forest guard.

The climate of India, the water in its rivers, the soil on its farms, and its wealth of life forms are all ultimately the gift of the mountains and depend on the wise stewardship of resources by the mountain people.

The third is to realise the actual, material benefit of the genetic pool in the mountains, and the borrowing by others of the genes and traditional knowledge of these resources. A global treaty on access and benefit sharing is essential. In its turn, national governments must ensure that these benefits, in full measure, flow to mountain people.

The fourth is to give fair value for the produce of the mountains. For the native grains and fruit, full of taste and wholesomeness; for the splendour of the experience of the landscapes, biospheres, and sanctuaries; for the hosting of dams and the electricity and irrigation services they provide; for the timber and medicinal plants; and for keeping under lock huge stores of carbon in the forests.

And, finally, education. Education everywhere. In the mountains, in the plains, in the whole world. Education in the sciences, in mathematics, and in useful languages. Education for better livelihoods through the capacity to absorb new technology and innovate. Education to ensure better awareness of the planet's many mysteries, its very fragility. Education to instil respect for the earth, for all its creatures, its non-living entities, and for all humans.