

India-Resolving conflicts to protect Siva's locks

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In the 19th century British colonial administrators in India took control of vast areas of forestland, which they subsequently exploited through the Imperial Forest Service. A good part of this forestland had originally been managed communally in accordance with local rules and regulations. With the coming of the British Raj (colonial rule), conflicts broke out between rural populations and the Forest Service. Village systems of resource use broke down, and forest degradation accelerated rapidly. The Chipko Movement, founded in the 1970s with the aim of conserving forests in the Himalayas, is one recent response to these developments. Before the Himalayas can become green again, however, it will first be necessary to resolve long-running conflicts. For here, just as in other areas of the world, conservation and regeneration of forests are primarily a social problem and only secondarily a biological problem. No-one has demonstrated this more convincingly than Visheswar Dutt Saklani, the man who planted 30,000 trees.

According to Hindu legend, the sacred river Ganges originated not on Earth but in Heaven, for it was said to emanate from Vishnu's toe. Legend also has it that when the 60,001 ill-bred sons of King Sagara disturbed the sage Kapila while he was meditating, he reduced them to ashes with one scorching glance. Saint Bhagiratha then prayed for the Ganges to be brought down to Earth so its waters could cleanse the ashes. The river goddess Ganga, furious at being displaced from Heaven, stormed through the gorges of the Himalayas and onto the plain, where she unleashed a torrent of floods and destruction. Anxious to rescue the Earth, Siva, the most benevolent of the gods, caught the turbulent river on his brow and stilled Ganga's fury in his matted locks.

Just as he does every evening, Visheswar Dutt Saklani sat monotonously reciting from the Puranas, the Hindu scriptures which tell of the creation, destruction and rebirth of the universe, and which are the source of the legend explaining how the Ganges came down to Earth. We were sitting on a *charpoy*, a bedstead woven from straw with four posts. The flame of a kerosene lamp intensified the light of dusk that was streaming through the one small window. In the kitchen, Saklani's wife and daughter were finishing what remained of our supper of rice and *dal*, a tangy curry made from lentils. A woman balancing a full pitcher of water on her head passed by outside. When Saklani paused in his

chanting, I could hear the soft chewing sounds made by the water buffalo that was tethered beneath the window.

Visheswar Dutt Saklani is a farmer. He lives in the Song Valley in a village called Saklana, nestled in the foothills which rise from the floodplains of the Ganges and Indus rivers to form a broad band in the foreground beneath the great peaks of the Himalayas. The catchment area of the Song, which merges with the Ganges further downstream, is part of Garhwal, and lies between Kumaon to the east and the state of Himachal Pradesh to the west. Garhwal and Kumaon together comprise the highland areas of the state of Uttar Pradesh.

I first heard of Visheswar Dutt Saklani in 1984, when Sunderlal Bahuguna told me of "the man who planted 30,000 trees". Bahuguna, in Europe at the time, was one of the leaders of the grass-roots Chipko Movement, which was founded in the 1970s to conserve Himalayan forests in India.

The next year I had a chance to spend five months journeying through the Hindu Kush and the Himalayas, travelling from Pakistan through India to Nepal. The village of Saklana was my first destination after I reached the foothills of the Indian Himalayas. It was not difficult to find Visheswar Dutt Saklani; he was well-known here for having raised literally tens of thousands of trees, which had since become an entire forest of oak. He was the man who cared for Siva's locks and watched over their regeneration. In the Himalayan foothills of India, Siva's bountiful locks of hair are, of course, a metaphor for the forest.

The story of Saklani's forest began with a tragic event in January 1947, the day on which his brother was shot and killed in the struggle for Indian independence. In his grief, Saklani decided to establish a forest in his brother's memory. Each year on the 11th of January, friends and relations gather with Visheswar Dutt Saklani to plant more trees, which have since grown to constitute a forest of oak larger than 20 football fields.

The daily struggle to secure a livelihood

I was awakened before daybreak by the clattering of dishes in the kitchen. Smoke from a freshly kindled fire and the cheerful voices of Saklani's wife and sister-in-law drifted through the cracks in the mud wall. I marvel at these women, who have just begun another hard day's work. Even in this relatively prosperous household their tasks are strenuous. Daily toil of this sort frequently drives many other women beyond the limits of their endurance.

The workday starts early. First the women must fetch water and grind wheat for making bread. After they see to the needs of the men and children and milk the buffalo, they set out for the forest. Often accompanied by neighbours, they are equipped with sickles and carrying-straps to cut fuelwood and gather grass and leaf fodder for the animals. Bearing bundles that I could barely lift, let

alone carry for hours, they trudge home before noon to prepare the midday meal - if they happen to belong to a family that can afford three meals a day. Then it is time to nurse the baby, tidy up, mop the mud floor, and perhaps be on call to dress a child's wounded foot with blood-stanching herbs. During the dry season, when up to 80 percent of the livestock feed is supplied by the evergreen white oak, the afternoons are also taken up with the search for leaf fodder. Long after dusk, completely exhausted, the women collapse on their sleeping mats before the kitchen fire.

The daily routine of the men is quite different - provided that they are living at home and have not migrated to the plains to seek jobs. They do periodic heavy labour, such as clearing land or improving terraces on cultivated areas when necessary. In addition, they have religious duties and they also do the ploughing, for ploughing is a task forbidden to Hindu women. Still, there is plenty of time to discuss politics outside the tea stall or the liquor booth. It would be difficult, however, to find another man who spends his time as Visheswar Dutt Saklani does, campaigning to restore the forest - the very foundation of the land-use system here.

Receding trees and declining fertility

The forest in the Himalayas plays the same role today that it did in the Alps when life there was still dependent on traditional solar energy. Two harvests a year - rice and millet in the monsoon season and wheat in winter - take a heavy toll on nutrients in the soil. To make up for the shortage of nutrients it is necessary to collect organic matter in the form of leaf fodder and leaf litter over extensive areas of the forest, which may be as large as thirty times the size of a typical cultivated field. Domestic animals also play an important role in this process, as they transform fresh leaves into compost. Milk production, however, is often of secondary importance: yields average two to three litres per day - the equivalent of what Alpine cows produced in Karl Kasthofer's day.

Although every child knows that trees are the mother of fruitful fields, Siva's locks are now found only on hilltops and in inaccessible places in the Song valley. This is the case practically everywhere in the Himalayan foothills and in most other parts of the country as well. Consequently, women have to make a greater effort every year to collect leaves, putting themselves increasingly at risk when lopping off branches and returning home with the fodder. Constraints on their time invariably force them to exploit the nearest trees, often before the ideal recovery period of two to three years has elapsed. The trees die more rapidly as a result, and the margins of the forest become frayed from this nibbling effect and steadily recede.

If the distance between the village and the forest becomes too great, or if there are no more trees, women can no longer bring home enough organic matter to keep the nutrient supply in balance. It then becomes necessary to

burn dried dung instead of fuelwood, which further exacerbates the fertiliser deficit. The immediate consequences are poorer harvests and even lower yields of buffalo milk. In order to compensate for food shortages, women are sometimes forced to sell the gold jewellery which they had originally intended to keep as a dowry for their daughters.

Another strategy for survival is to keep greater numbers of goats, which are more adept than other animals at finding enough food to sustain themselves in a degraded environment. Goats are steadily increasing in number in Saklana and its surroundings, as they are in most Himalayan villages. Nation-wide, the goat population doubled between 1950 and 1980. However, as goats prefer young saplings and other woody vegetation, they hinder natural forest regeneration, thereby further intensifying processes of degradation.

The Empire extends its hegemony to the foothills

All things considered, present-day conditions in the Himalayas appear hauntingly reminiscent of 19th century conditions in the Alps. But there is a fundamental difference in historical development between the Alps and the Himalayas. Whereas the British came to the Alps as tourists, they came to the Himalayas first as traders, and later as rulers who established the British Raj.

Almost from the outset the British sought to clear the land and break new ground for the cultivation of export crops. For example, the area around Gorakhpur, at the base of the Himalayan foothills on the Ganges Plain, was densely covered with sal trees until the early part of the 19th century. The bamboo-covered banks of the river were swollen by Ganga's fury in the monsoon season. Swamps filled with mosquitoes became breeding grounds for malaria, which spread swiftly and deterred settlement in the area for a long time. Owing to the great desire for land, however, British "sugar barons" had already had tens of thousands of hectares of forestland cleared for cultivation by 1830.

The hills were spared a little longer. In 1838 a British colonial official reported that nowhere else in the world did farmers have such good clothes or such well-built houses as in Garhwal and Kumaon. As late as 1850 hill farmers still did not bother to gather the wild fruits and vegetables in the nearby forest, for their own harvests were so plentiful that they could afford to export grain to Tibet and the Ganges Plain. In 1855 a British promoter of the iron industry described the forests of Garhwal and Kumaon as "boundless and inexhaustible" and reported that the forests at every mining site "can supply sufficient charcoal for the largest English furnace for a hundred years to come".

Yet the hills, too, gradually succumbed to the influence of colonialism. Hill stations such as Musoorie or Shimla, now part of the state of Himachal Pradesh, were established not far from Saklana in the foothills at the base of the

Himalayas. In 1864, Shimla became the summer capital for British colonial officials. Located at an altitude of more than 2100 m, it was a bit cooler in the hot season prior to the monsoon.

Forest destruction followed hard on the heels of British colonialists in the hills, as it did wherever else they went. The hill stations rapidly became "black holes", just as the City of Berne had once been. Wood was needed to fire limestone, and enormous quantities of timber were required for the construction of government offices and official residences, which were architecturally similar to the hotels being built in Interlaken in the same period. Newly cultivated fields nearby were used to grow products for side dishes to accompany the salmon imported from Scotland and the Mediterranean sardines that were served in these stylish dwelling-places.

At the same time, timber was being steadily harvested from the Himalayan forests to meet the requirements of economic development on the plains, where timber stocks were gradually being depleted. In 1844 an English contractor named Wilson obtained a concession from the Raj (feudal lord) of Tehri-Garhwal, allowing him to harvest Himalayan cedars, which grew at altitudes above 1,800 m and had to be rafted for months down the Ganges to reach the plains. Wilson's contract permitted him to fell as many trees as he wanted at a fee of 400 rupees per year for twenty years; yet within only one decade, he had already ravished the most magnificent cedar stands.

Railways transform the world of commerce

In 1853 the British began constructing a railway network to connect main harbours and major cities with the fertile hinterlands. Vast areas which had previously been part of a local or at most a regional economic system were directly linked to the international commodities market. Increasingly larger areas of the country were now drawn into the vortex of global commerce conducted by the British Empire.

Cotton from the hinterland of Bombay fed the looms of Manchester, a major centre of the textile industry in England. Indigo from the freshly cleared Ganges Plain was used to dye cloth exported to North America as "denim", which was subsequently fashioned into durable blue jeans worn by cowboys and gold prospectors. Wheat from the Punjab sustained office clerks in London, the administrative centre of the Empire, where construction of the London Underground was begun in 1863 in order to ease crowding caused by the throng of commuters at the rush hours.

Aside from facilitating exports, India's railways also opened up an enormous market for industrial products imported from Britain, such as machine-woven cottons, which rapidly displaced domestically produced goods and elaborate handmade Indian artifacts.

With approximately 1,800 sleepers needed for every mile of track, the railway network consumed incredible quantities of timber. Some 66 million sleepers were required for the 37,000 miles laid by 1920, which comprised only the first generation of railway construction.

The Calcutta-Varanasi-Allahabad line running parallel to the Ganges had been completed by 1859. The next step was to link the fertile plains of Uttar Pradesh and the Punjab to the network. Construction of this link was a priority, for this area had been the site of the recent Sepoy Uprising, the final effort of the Rajahs of northern India to shake off colonial rule. If troops could be rapidly transported by rail, it would be possible to quell any such uprisings in the future. But sal trees, which had once existed in great abundance at the base of the Himalayan foothills and which were the best-suited trees in the region for making sleepers, had long since been cleared away by the sugar barons.

The railway builders thus turned their attention to Himalayan cedar, the last species still growing in large stands which was suitable to the needs of empire. In the early 1860s, however, the British army surgeon and botanist Hugh Cleghorn had conducted a survey which showed that most cedar stands were on property that belonged to Indian Rajahs, who had often granted concessions to people like Wilson at give-away prices.

Signs of a threatening shortage of wood soon led to the establishment of the Forest Department in 1864. A year later, Dietrich Brandis, a German who had worked many years for the British in the teak forests of Burma, was appointed as the first Inspector General of Forests in India. In the following decades, the Imperial Forest Service focused its attention largely on the Himalayas, from whose forests 1.3 million cedar railway sleepers had already been extracted by 1878.

Rights of use: the roots of a still unresolved conflict

In pre-colonial times the local Rajahs had exercised sovereignty over the Himalayan forests, just as the City of Berne had exercised its sovereignty in Oberhasli in the Bernese Oberland. The Rajahs held their forestland in reserve for their courtiers or used it to remunerate soldiers. But aside from their value in sustaining elephants, which were important in wartime, forest products aroused real interest only when wood later became a valuable commodity in the British market economy.

Farmers had long been allowed to use forest products, for only if they had enough leaf fodder for their cattle and enough compost to fertilise their fields could they pay the taxes which provided the upkeep of the Rajahs' opulent courts. For similar reasons, colonial authorities had long recognised communal

rights of use in local forests, until the shortage of wood for sleepers made even remote forest stands important to the aims of the Empire.

Farmers did not have open access to forest resources, however. On the contrary, forests in the vicinity of villages were often managed as common property according to specific rules. They were frequently surrounded by stone walls to protect them from cattle, and the village council or the village elders stipulated the times and the conditions under which common rights of use could be exercised. Clear rules governing the use of woodlands far from villages were also likely to be established in the course of time. Even remote forests, which would not be perceived by outsiders as having any connection with the village economy, constituted special sites that were reserved as the dwelling-places of gods and spirits whom local people did not dare to disturb.

Deeply rooted conflicts over resource use and serious conflicts of interest between local populations and the Forest Service soon became apparent in the foothills of the Himalayas, just as they once had in the Alps. It must be recalled that Cleghorn had proposed as early as 1861 that both the right to harvest timber and the obligation to regenerate the forest be handed over to local people, for they had the greatest interest in maintaining the forests and managing them to obtain sustainable yields. Brandis, too, had entertained notions of allowing local communities to retain control over forest resources. But the Revenue Department, which was responsible for collecting taxes, opposed the legalisation of traditional village-level forest management practices, fearing both loss of revenue and loss of influence.

Most of the staff of the Imperial Forest Service were officers seconded from the police force or the army, whose attitude towards villagers was much like the attitude of a Victorian husband towards his wife. In paternalistic fashion, these officials contended that local people were not capable of managing the forests, and that they needed protection from the consequences of their own negligence, which could easily cause destruction of the forests as well as erosion problems.

Here again, the vocabulary used by colonial foresters betrayed their true aims. Officials in the Imperial Forest Service used the expression "minor forest products" - the word "minor" hinting at inferiority - in the same way that it had been used by their counterparts in Europe. This contrasted with the "major" forest product, i.e. the timber that was considered crucial not only to "the advance of civilisation" but also to vital "national interests".

The arrogance of power was quite transparent at a Forest Service conference in 1875, where it was openly maintained that the "victor" is entitled to enjoy the "rights of conquest". This statement was a clear admission of the rationale behind the setting aside of reserved forests, in accordance with provisions contained in the Forest Act of 1878.

Reserved forests had been foreseen wherever timber could be produced profitably or wherever the forest had a protective function. A reserved forest became the property of the colonial government as soon as existing rights, such as the right to obtain leaf fodder or to graze goats, had been rescinded. News of such decisions was then gazetted on public notice boards to inform the local population.

Reserved forests frequently constituted half of the total area of a village. But local farming populations had never been willing to see their traditional rights curtailed, and they vigorously opposed outright expropriations of land. From this time forward, as a forestry official remarked in 1893, the practice of forestry became an ongoing struggle with village-dwellers.

Fire becomes a sign of resistance

The relationship between the Forest Service and the population in Kumaon reached a new low point at the beginning of the 20th century. Owing to World War I, there was a sudden interest in a species of pine known as *Chir*, as it was the most important source of resin and turpentine in the entire British Empire. In 1920, the number of pine trees tapped for resin in Kumaon alone far exceeded the two million mark. The Forest Service rapidly tried to exert its control over this resource by putting these trees in newly established reserved forests, thereby further eroding local rights.

In 1920 Mohandas Gandhi, who was to lead India to independence in 1947 and later become known to the world as Mahatma ("great soul"), began his first nation-wide campaign of civil disobedience to protest unjust laws. Gandhi characterised the newly established forest reserves as a symbol of oppression. In the following year, the local population set fire to forests of *chir* just before the monsoon, as they had always done, so that the ensuing rains would promote the growth of hardy fodder in soil fertilised by ashes. But this time the fires raged more widely and intensely than before, consuming hundreds of thousands of pines. This initial regional protest by people in the Himalayan foothills forced the government to abandon the newly established reserved forests.

The people vs. the foresters

The population of India grew steadily from 1920 onwards, especially in the lowlands. Timber was increasingly rafted from the hills to the lowlands, where it was needed for energy as well as for construction. Often it was auctioned off before being felled, as the Forest Service could only do a minimal amount of the felling itself. Prosperous contractors from the higher castes recruited outsiders who were more willing to work in the forests for lower wages than the indigenous population. After trees had been cut under these conditions,

the forest floor, littered with woody debris and branches, resembled a battlefield.

While forestry officials closed their eyes to slipshod felling and the inclination of contractors to fell timber even where it had not been marked, they exercised strict police powers in dealing with local people. They destroyed the sickles which women used to cut branches, and meted out severe punishment even for minor offences. It was not surprising, then, that the Forest Service, a tightly organised hierarchy where even the lowest-ranking wardens wore uniforms, was seen by the population as an arrogant and repressive bureaucracy. Even the integration of increasing numbers of Indian officers into the Service after 1920 represented little more than replacement of the British class system with Indian caste-consciousness.

Repression of the local population did absolutely nothing to preserve the forests, however; on the contrary, it triggered a chain of tragic events that has continued to the present day.

Disruption of the delicate balance of power in villages, and the undermining of local customs, was disastrous side-effects of the extension of state jurisdiction. The needs of village-dwellers might have been met despite the reduced amount of forestland available if appropriate new rules had been drawn up to regulate the use of forest resources. But the Forest Service largely refrained from involvement in this sticky task. Consequently, in the place of traditional rules and restrictions, a profound uncertainty about rights arose. Influential villagers quickly moved to fill this vacuum. They obtained fodder from trees traditionally reserved for others. And, responding to the opportunities offered by new markets, they exploited timber to which they would not have had normal access.

Exploitation now replaced more or less sustainable management of forest resources. A tree which has been assigned to the use of a particular family by tradition will be seen as a living resource, and it will be allowed to coppice. But if trees suddenly belong to everyone, there is no longer any guarantee that caring for them will bring benefits, since a tree that has been carefully tended by one person may well be cut down for firewood by someone else later the same day. Nor is there any certainty that a tree planted today can be used ten years hence, either by the person who planted it or by his or her successors.

The estrangement of local populations from their traditional resources also had disastrous effects on reserved forests. The Indian Forest Service made a steady effort to manage reserved forests according to the principles of scientific forestry. But ivory-tower approaches to forestry which exclude local communities from participation were doomed to failure in India, just as they had been earlier in Europe. Local practices, such as using sickles and setting fires that will later promote the growth of animal fodder, cannot be controlled

or prevented, either by law or by forestry officials. Nor can herdsmen be stopped from dismantling the fences and walls erected by the Forest Service to keep goats away from cut-over areas.

The problem is not timber use per se, for natural regeneration is a strong enough force to ensure that forests endure, even in the Himalayas. Other factors such as population growth, the expansion of cropland and grazing areas, and village forest management practices that are not always optimal have undoubtedly contributed to deforestation. But even this combination of factors is not enough to explain the extensive decline of Himalayan forests. The tragedy that has afflicted these commons stems primarily from the dissolution of traditional rights and social structures. Confirmation of this can be seen in the fact that in regions where access is difficult, and where traditional forms of local organisation have accordingly been maintained, significant tracts of forest have often survived.

Independence and the conflict with China

At the time India won its independence in 1947, its soils were degraded, its economy crippled, its system of property ownership had become unbalanced, and its population was growing rapidly. While the railway in Europe functioned mainly as a vehicle of supply, in India it increasingly drained the country's resources. In Europe the railway was an instrument of overall socio-economic improvement which narrowed the gap between the city and the countryside and had a beneficial impact on forests in the long run. In colonial India, however, it had the effect of driving the rural and urban worlds even further apart.

Urban areas had a growing need for railway sleepers and cellulose, while the demand for leaves and other non-timber forest products remained unchanged in rural regions. At the same time, both rural and urban populations burned wood to produce energy. The forests of the newly independent nation had no time to recover. As the rural and urban worlds both sought to satisfy their needs, age-old conflicts continued in the forests of modern India, with most foresters representing urban interests, as they had previously done.

On the day before his life came to a violent end in January of 1948, Mahatma Gandhi bade his followers to return to the villages. Here, as devotees of *sarvodaya* ("for the general well-being"), they would help village-dwellers to achieve *ramraj*, or the Kingdom of God, as Gandhi called his vision of an India where justice would rule. As he envisioned it, democratic village-republics would one day be largely self-sufficient, and people would no longer have to exploit the land, animals, or other human beings. Gandhi was convinced that the Earth could provide enough to support a simple life for everyone, provided that people did not aspire to an "American standard of living."

Gandhi's plea for a return to village autonomy and a small-scale economy had no chance of realisation, however, for it was soon lost in the clamour for other courses of action. The view that eventually prevailed was one which demanded that India industrialise and produce consumer goods or face decline: energy and raw materials subsidised by the government would help rebuild industries which had deteriorated under colonial rule. Even the Forestry Act of 1952 was designed to supply cheap timber and other forest products for industry.

Demand for Himalayan timber held firm and even increased following the Indian-Chinese conflict of 1962. Roads were constructed deep into the mountains at this time, and previously inaccessible forests were opened to exploitation.

Tennis rackets or wooden yokes?

Half a century after the great forest fires in Kumaon, the skirmish between local populations and foresters spontaneously flared up once again in the same region. In 1972 the *Dasholi Gram Swarajya Sangh* applied to the Forest Service for permission to cut ash trees for the manufacture of yokes, as it had done every year. This time, however, its application was turned down. The *Sangh*, a self-administered labour collective domiciled in Gopeshwar, had been founded in 1964 to promote local processing of wood, resin and medicinal herbs. The motivating force behind it was Chandi Prasad Bhatt, a bus company ticket salesman who had been converted to the idea of *sarvodaya* by Sunderlal Bahuguna some years earlier. Chandi Prasad Bhatt had observed the daily exodus from the mountains of young men who could no longer earn their livelihood there. Creating jobs is not an easy task, however. When trying to obtain legal permission for access to local raw materials, the *Sangh* frequently experienced great difficulties with government offices responsible for allocation of resources.

Shortly after their application to cut ash trees had been rejected, members of the *Sangh* learned that the Simon Company, a manufacturer of sporting goods 600 km away in Allahabad, had obtained a concession to cut ash near Gopeshwar. Suddenly, they saw the issue as one of tennis rackets for city-dwellers versus yokes for farmers in the Himalayan foothills. The association decided to protest the official decision, and at a meeting in March 1973, an idea suddenly emerged which was destined to give its name to an entire movement: *Sangh* members resolved to literally "embrace" trees in order to prevent them from being felled. The Hindu word for "embrace" is *chipko*. It was at this moment that the Chipko Movement was born.

When forestry officials realised that members of the *Sangh* were prepared to protect trees from the axe with their own bodies if necessary, they offered to supply an ash tree if the *Sangh* activists agreed to cancel their protest. This offer was gradually upgraded, until finally the Forestry Minister for Uttar

Pradesh personally agreed to supply the *Sangh* with ten trees - twice the amount they had originally requested.

But members of the *Sangh*, newly inspired by increased self-confidence, now wanted something more fundamental. They were determined to concentrate not just on satisfying their own needs but on restoring traditional rights for the entire population of the Himalayan foothills. They put forward four demands to this end: the participation of the indigenous population in forest management; priority for local enterprises in the allocation of local resources; prohibition of indiscriminate felling by contractors; and an end to the destructive practice of gouging deep, broad holes in pine trees to tap resin.

Sunderlal Bahuguna, who was the leader of the *sarvodaya* movement in Garhwal and Kumaon at the time, offered unconditional support for this non-violent campaign, which had been conceived in the spirit of Gandhi. Bahuguna was well acquainted with forest problems from previous experience. He emphasised that forests in the foothills must be protected not only from contractors but also from wasteful exploitation by the local population. He subsequently embarked on a two-month march to spread news of the Chipko Movement's demands in the villages around Gopeshwar.

In addition to concerns about local economic issues, ecological arguments were now heard for the first time in the discussions of Chipko activists. In 1970 extremely heavy monsoon rains caused landslides which clogged the tributaries of the Alaknanda River. When accumulated debris which had formed temporary dams broke under the strain of backed-up water, river levels rose rapidly in the main valley. Dozens of people and hundreds of domestic animals were killed, and bridges and roads were swept away. Eroded material carried by the floodwaters clogged the upper channel of the Ganges as far as 300 kilometres from the source of the floods.

Deforestation in the Alaknanda river catchment first began on a large scale in the 1960s. Continual reports from this area indicate that sources which once provided water year round now disappear as soon as the dry season begins. The local people are also convinced that mudslides and flooding have been occurring more frequently since the 1960s. And so it is that the wrath of Ganga, which grows more intense as Siva continues to loose locks of hair, has now become a central part of the arguments advanced by the Chipko activists.

Chipko!

It was in 1974 that women also began to play an active role in the Chipko Movement. In that year, at a site above the village of Reni overlooking the Alaknanda River near the Tibetan border, the Forest Department granted a concession to fell 2,500 trees. Chandi Prashad Bhatt subsequently informed the contractor that Chipko activists would intercede to block the felling. But on the

day that a crew arrived to begin cutting trees, Bhatt and his fellow activists found themselves busy in Gopeshwar with a visit from high-level forestry officials, while the men from Reni were occupied in the district capital of Chamoli, where it seemed that the army had finally got round to paying compensation for land which it had held since the conflict with China.

Were the authorities trying to manipulate events? If so, they had failed to reckon with Gaura Devi and 27 other women and girls who pursued the logging crew and positioned themselves in front of the trees that had been marked for felling. Gaura Devi addressed the men: "Brothers! This forest is the source of our livelihood. If you destroy it, the mountain will come tumbling down onto our village." She then placed herself in front of a gun wielded by one of the men. "This forest nurtures us like a mother; you will only be able to use your axes on it if you shoot me first." The logging crew was composed of mountain farmers from Himachal Pradesh who understood only too well what Gaura Devi was talking about. In the end, they withdrew without having accomplished their task.

There were more Chipko campaigns in the ensuing years. Women continued their involvement, tying sacred silk threads to trees which had been marked for felling. In a forest near Advani they received a forestry official with kerosene lamps in broad daylight, so that he would be sure to see the erosion damage caused by indiscriminate harvesting of trees. More than 500 people gathered at this same forest in 1978 to protest against timber felling. Every tree approached by logging crews was immediately embraced by a group of people. After several days of these non-violent protests, the contractor recalled his work crew.

Protests receive a new impulse

Sunderlal Bahuguna has long been spreading word of the Chipko Movement. Between 1973 and 1975 he and other activists marched for thousands of kilometres through the Himalayan hills, accompanied by musicians and singers. During this time he met people like Visheswar Dutt Saklani, and discovered that mountain-dwellers had a profound understanding of the significance of the forest.

Problems like those in the Himalayas can be found in all parts of India. Since independence, forestry policy throughout the country has focused increasingly on urban needs (see Box, "A divided society"). The Forest Service imposed stiffer and stiffer sanctions to keep subsistence farmers out of public forests, while protecting reforested areas with barbed wire, guarding trees in military fashion, and employing even more absurd measures out of desperation: a program of castrating bulls to reduce the number of stray animals was intended to have the subsequent effect of diminishing pressure on grazing areas. All these policies were of no avail.

Instead, popular movements whose avowed aim was to manage natural resources for the benefit of the rural population sprang up in many places. In Bihar and Gujarat, these movements arose in response to the conversion of natural forests to teak plantations, a move which deprived the indigenous forest-dwelling Adivasi people of their only resource base. In the southern Indian state of Karnataka, the Appiko Movement was formed when the Forest Service did nothing to halt the activities of contractors who were felling 35 trees per hectare instead of the stipulated 2 per hectare.

Success at the local level takes many forms

As early as the 1970s, the government of Uttar Pradesh began to react to growing popular pressure, which had been applied with particular effect in the form of various fasts undertaken by Sunderlal Bahuguna. Timber felling was temporarily forbidden in certain regions, the contractor system was suspended, and organised felling was delegated to a newly formed governmental forestry corporation.

In 1975, the year following the protest in Reni, the *Sangh* began a reforestation campaign. Foresters offered members of the association advice on how to establish a nursery. Close collaboration rapidly became the order of the day, and the *Sangh* was able to bridge the considerable gap that still existed between the population and the Forest Service. The afforestation projects it organises regularly achieve a high rate of successful growth, in contrast to government projects. Today, the *Sangh* operates the largest voluntary afforestation program in India.

Other successful initiatives rooted in the Chipko Movement are only now becoming apparent. For example, the forest council in Bacheer, a village high above the Alaknanda, was composed entirely of female Chipko activists at the beginning of the 1990s. The women of the village have planted fodder-producing forests in the vicinity of their homes, and have erected a stone wall around them and hired a woman forest warden to protect them. Thanks to the backing of international non-governmental organisations such as the Ford Foundation, the women of Bacheer now own productive dairy cattle which have been cross-bred with Jersey cows. The cattle are kept in stalls nearby and fed well to ensure high yields of milk.

Measures such as these make it possible to better exploit solar energy and optimise the flow of nutrients. Fodder-producing trees, which Karl Kasthofer referred to as "meadows in the air," help to meet the demand for animal feed and fuelwood. Keeping animals in stalls makes it easier to collect dung and apply it as fertiliser to enhance soil fertility, and the sale of milk also provides women with a separate source of income. If the entire village eventually concentrated on stabling a few productive animals, grazing pressure on the

forest would be reduced and self-healing processes would be initiated by natural regeneration.

Their experience in the Chipko Movement has given the women of Bachheer the courage to liberate themselves from traditional social structures and organise themselves in new ways. They can take better care of trees planted near their homes, while simultaneously laying the foundations for new agreements on the use of common resources. This "bottom-up" initiative contrasts with "top-down" decrees from the Forest Service. The women themselves, and not the Forest Service, have decided what species to plant - in this case, fodder trees. The women of Bacheer have thus succeeded in overcoming the classic conflict between local populations and forestry officials.

Empowerment and additional income for the rural population

Bachheer provides a small-scale example of what is needed on a nation-wide basis in order to release the enormous growth potential of India's forests once again. The historic conflict between cities and rural areas must finally be tackled, and forest policy must be aimed at improving the relationship between local people and foresters. In addition, those for whom the forest and its products are essential to survival must have a say in forest management.

Initial movement in this direction occurred in the 1970s in the western Bengali village of Arabari, where it was agreed that a local forest committee, which had been founded there and had pledged to protect the forest, would receive one-fourth of the revenue from timber sales. Committee members were also allowed access to traditional forest products such as leaf fodder, but only at places designated in a forest management plan. This model agreement proved effective and has now spread to several other states, although by the early 1990s it had been applied to only 1.5% of the approximately 75 million hectares which would be suitable for common use.

Given the enormous gap in social conditions between city and countryside, a one-fourth interest in the timber harvest for local communities seems extremely modest. If rural populations had the right to all revenue produced by the forest, for instance, some of their most urgent needs could be met, including a long-needed renovation of local schools, completion of new water lines to supply drinking water (often delayed owing to corruption), and construction of badly needed latrines. Local populations would also be more likely to protect the forest and use it more productively if it was the property of the community.

The forest will yield greater economic benefits if the raw materials it provides are processed by local people, as advocated by the *Dasholi Gram Swarajya Sangh*. Local resources will be better protected by rural enterprises than by the forces of an anonymous market distorted by governmental intervention. A job

with a secure income for one member of every family would further support this urgently needed social change. And change in this direction, if European experience is any guide, would not only contribute to the resolution of rural conflicts but also greatly facilitate the restoration of forests.

Support for women means support for the forest

Owing to the great potential for conflict rooted in India's caste system, the formation of local groups of resource users is a central problem in the transition to communal management. Although the Indian Constitution guarantees equal rights to all Indian citizens, caste membership still determines the conditions of life in the rural world. The social structure in local villages is characterised by complex and rigid hierarchies, in which deeply rooted internal tensions make it extremely difficult to undertake common action and communal projects. The following chapter on Nepal will illustrate the problems involved in forming groups of forest users and the role of the Forest Service in this regard.

(It is crucial to include women in the formation of community groups. Women will only be motivated to perform additional tasks, such as planting trees, if their workload is eventually reduced as a result. In the Himalayas, as in most parts of India, girls come second to boys, whether it is a matter of food, medical attention, clothing or education. But when girls and women are educated they become aware of their rights, they are more capable of self-determination, and they become more competent mothers. When the status of women is thus enhanced, infant mortality and child mortality decline, life expectancy increases, and an average of two births is no longer necessary to ensure that there will be one son to care for his parents in old age. Only at this point will family planning make sense and lead to a gradual decline in the rate of population growth, with a subsequent reduction of pressure on forest resources.)

Conservation and regeneration of forests is primarily a social and only secondarily a biological problem, in India as elsewhere. Visheswar Dutt Saklani's afforestation project, in which oak trees were planted at suitable sites, was impressive evidence of this. The great service performed by Chipko activists was to call attention to and expose the long-running conflict between local populations and foresters. Today the Chipko Movement no longer exists in its original, influential form. Increasingly, it appears to be assuming an almost mythical status, perhaps destined to take its place among the many myths found in Himalayan culture. Yet it will undoubtedly remain a symbol of non-violent action in the forest. As such, it has already had a further incarnation in the Amazonian region of Brazil (see the chapter entitled "Hope for Amazonia").

Box

A divided society

India has been undergoing great transformation since the 1980s. Particularly notable has been the growth of its middle class. Even Hindu culture - traditionally characterised by emphasis on the superiority of the spiritual and the religious over the material and capable of being deeply moved by ascetics such as Mahatma Gandhi - is becoming increasingly oriented towards the modern consumer societies found in the developed world. By the mid-1990s, approximately 200 million people in India had achieved a relatively comfortable standard of living. Their India is the land of the Maruti, a middle class car which is slowly taking its place alongside the ubiquitous "Ambassador". It is the India that has the know-how to produce atomic weapons and the rockets to fire them, the India of motor scooters, refrigerators and air-conditioners. It is also the India of the Green Revolution, which has been responsible for making the country currently self-sufficient in food production, thanks to irrigation, chemical fertilisers and high-yielding crop varieties.

Prosperity in the cities has increased the pressure on forests, as the growing purchasing power of an industrialised India continues to trigger new types of demand. Wood is used for construction, and the demand for modern furniture continues to grow. Consumption of paper is rising rapidly, while marginal populations in the cities still need wood as a source of household energy. Between 1975 and 1985 the price of fuelwood rose twice as fast as the price of food.

The other India - the India of the underprivileged - is a country of 700 million people who live partly in urban slums, but largely in rural areas. Bicycles, torches, kerosene lamps, radios and the occasional television set are among the few products of the industrialised world that can be found in India's 600,000 villages. Yet people at the margins of Indian society are still largely dependent on traditional forest products. As they are hardly able to afford artificial fertiliser for their fields, dried cattle dung must all too often be substituted for fuelwood.

The relationship between urban and rural society in India is similar to that between developed countries and third world countries in that it is characterised by features of colonialism. Prices for rural products such as food, wood and fibres are often insufficient to cover production costs. The terms of trade between city and countryside are thus marked by the same inequity that exists in trade between industrialised and developing countries, particularly where market conditions are distorted by bureaucracy and governmental intervention. The rural population is also at a disadvantage in terms of services such as energy, drinking water and education, which are either openly or indirectly subsidised in the cities.

These social disparities also have many negative impacts on the urban world. Urban demand accelerates degradation of rural resources. Together with the material promise of urban life, this demand is responsible for rural exodus and the rapid growth of urban slums. Between 1981 and 1991 alone, India's cities absorbed an additional 60 million people, with a corresponding increase in the threat of epidemics. Soils in rural areas, particularly those that are overused, are being continually eroded; water reservoirs are filling up more rapidly with eroded material, and the useful life of both reservoirs and electric power plants is being drastically reduced. This degradation of natural resources will continue until adjustments are made to promote more equitable relations between the worlds of the privileged and the underprivileged.

1. Dowson 1984, p. 108
2. *Quercus incana*
3. Pandey and Singh 1984, p.50
4. Moench 1988, p.127
5. Moench and Bandyopadhyay 1985, p. 127
6. Shah 1994, p. 18
7. *Shorea robusta*
8. Tucker 1983, p. 150
9. Guha 1988, p. 285
10. Tucker 1983. p. 156
11. *Cedrus deodar*
12. Tucker 1983, p. 157
13. Ibid, p. 159
14. Ibid, p. 159
15. Guha 1988, p. 287
16. Tucker 1983, p. 157
17. Gadgil and Guha 1992, p. 123
18. Cf. Guha 1988, p.287
19. Gadgil 1991, p. 38
20. Hesmer 1975, p. 67
21. Cf. Kulkarni 1983, p 86
22. Hesmer 1975, p.67
23. Guha 1988, p. 288
24. Shyamsunder and Parameswarappa 1987, p. 334.
25. Guha 1988, p. 290.
26. *Pinus roxburgii*
27. Guha 1988, p. 289.
28. Cf. Guha 1988, p. 292, and Tucker 1988, p. 97.
29. Cf. Tucker 1983, p. 164.
30. Cf. Hardin 1968.
31. Cf. Moench 1988.
32. Weber 1987, p. 617
33. Cf. Weber 1989, p. 30 ff.
34. Shah 1994, p. 11.

35. Weber 1989, p. 33.
36. Weber 1989, p.41.
37. Bhatt 1980, p. 12.
38. Mishra and Tripathi 1978, p. 27.
39. Saxena 1991, p. 30.
40. Shah 1994, p. 8.
41. Weber 1989, p. 112.
42. Bänziger 1991.
43. Cf. Campbell 1996.
44. Campbell and Denholm 1993, p. 6 ff.
45. Cf. Khosla 1994.
46. See, for example, Sharma 1994.
47. Imhof 1988, p. 236.
48. Cf. Rangan 1993.
49. Weber 1987, p. 627.
50. Shah 1994, p. 18.
51. Pachauri 1992, p. 2.
52. Cf. Gadgil and Guha 1994