COALITION FOR ENVIRONMENT AND DEVELOPMENT
Sustainable Cultures – Cultures of Sustainability

BACKGROUND PAPER 18

by

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Peoples ' Action and Dialogue on Climate Change and Sustainable Livelihood in Central Himalayas

Slogan: only people with independent minds can create a new independent life style

1. Introduction to the ecological situation in the geographical area

On the Northern arc of India and in the heart of south Asia the abode of snow or Himalayas is located, the loftiest mountain chain on earth. The towering mountain chain is a predominant factor in the lives of millions of people living in the Himalayan Indian states as well as in Tibet and Nepal.

Himalayas separates the Indian subcontinent from Central Asia. It extends from west to east in a massive arc for about 2,500 km (1,550miles) covering ans area of about 6,12,021 sq. km. The vast mountain chain passes through the Indian states of Jammu & Kashmir, Himachal Pradesh, Uttaranchal, and Sikkim and through the Himalayan kingdoms of Nepal and Bhutan. The Tibetan plateau or the roof of the world forms the northern boundary of this magnificent mountain system while lower extensions of it branch off from eastern and western frontiers of the mountains.

The central part of it or central Himalayas constitutes the newly formed Indian state of Uttarakhand. The region is situated in the Northwest of the Indian state of Uttar Pradesh. Uttarakhand region is composed of two distinct ecological zones : the monsoon-affected middle and low altitude areas, and the high valleys of the north.
There are two major and interconnected elements in the ecology of the region: forest and the water resources fed by the glaciers

The Himalayan glaciers that feed several tributaries of Ganga and Yamuna are receding at a fast rate. The impact of global warming is already upon the sensitive ecozone. The 30.2 km. Long Gangotari glacier, the second largest among the 6,500-odd small and large glaciers in Himalayas, is receding at a rate that is worrying. In fact, the rate of retreat in the last three decades has been more than three times the rate during the earlier two centuries or so. After a detailed quantitative analysis of the geomorphological features of the Gangotari glacier, teams of geologists from the local HNB Garhwal University as well as from JNU have concluded that the speed of retreat has

increased to a big extend since 1971.

This, glaciologists and criminologists believe, is due to global warming. The climatic change brought about by human activity in the post-industrialisation period has already resulted in a global increase in the average surface temperature by 0.6 degree centigrade. A natural consequence of this is increased melt from ice caps and glaciers. Mountain glaciers, such as in central Himalayas, are particularly sensitive indicators of climate of climate change.

The glaciers are more sensitive to temperature than to other climatic factors. The Central Himalayan glaciers are particularly so because of the monsoon-driven climatic conditions in the region. Therefore, it is not surprising that a perceptible impact of global warming has been in evidence in the Himalayan glaciers over the last few decades. A 1999 report by the working Group on Himalayan Glaciology of the International Commission for Snow and Ice (ICSI), constituted in 1995, said : “Glaciers in Himalayas are receding faster than in any other part of the world and, if the present rate continues, the likelihood of them disappearing by the year 2035 is very high.”

A study of terminal moraines of Gangotari has also pointed out towards this trend. Observations on the retreat of the Gangotari go back to 1842. Between 1842 and 1935 the snout of the Gangotari glacier was receding at an average rate of 7.3m a year. According to data of the Geological survey of India, between 1935 and 1996 it retreated by 1,147m, which amounts to an average rate of 19m a year. This implies that the rate of retreat more than doubled during a good part of the last century but a dramatic increase in the rate seems to have occurred in the last three decades.

It is very important to identify several dimensions of climate change in Central Himalayas so that an environment for reinforcing the ecological dialogue based on issue of climate change may take place. This can be done only with the active participation of the local communities. Besides, there is a need for defining the ecological threat in a manner that enables all citizens to directly participate in the environmental, social, and economic choices on the basis of co-existence and symbiotic nature-human relationship.

The ecosystems require water, as it is the most important input for their survival. As regards the health of Central Himalayas, it is vital for the very survival of earth as the region is among the most susceptible and exposed eco-zones. It is quite clear that climate change and ecological degradation are some of the biggest threats facing us as humanity, and the efforts to find solutions to them have been insufficient so far. Though the concerns relating to environmental and community regeneration have been implemented with varying degrees of success in highland regions across the world, the situation in Uttarakhand is far from ideal despite the fact that the region is considered as one of the vanguards of environmental protection and had the opportunity to witness the famous Chipko and anti-Tehri-dam movements.

The 260.5 m high Tehri dam. across the river Bhagirathi, is being built close to an active fault - the shrinagar fault. The project is one of the most controversial in recent times. Even the Environmental Appraisal Committee of the Ministry of Environment and Forests (1990) had cautioned against construction of the dam. There were many other similar voices too.

Yet the dam was build and hence, the Poor and the marginalised people of Uttarakhand continue, like their brethren in several other parts of the world to be hit by the consequences of the deteriorated ecology.

The reckless consumption patterns and wholesale utilisation of the natural resources have led to the rapid deterioration of environment resulting in climate changes, rise in temperature and depletion of the ozone layer as well as of the natural resources, including forests. Nicholas Georgesco Roegen, an economist, pointed out that even at zero growth the continued

consumption of scarce resources would inevitably result in exhausting them completely. Therefore, the question is how to consume judiciously as there is no other way of conserving the available resources for future generations.

The receding glaciers are a result of the climatic changes and the rise in temperature; and the real forest cover is thinning due to unsystematic use of the treasure.
Since the invasion of the British colonialists there has been an extensive exploitation of the forest resources taking place which is continued since independence through the government. The former diverse forests that used to provide the farmers with plenty of items ranging from herbal medicaments over food for themselves and the cattle to firewood have been turned into mere plantations of Pine trees in an overwhelming amount. Not only do the Pine forests not provide resources despite firewood, they do also consume more water than broad leave trees. Furthermore they are not useful in preventing landslides. Thus Uttarakhand is threatened to turn into a Green Desert.

After getting full statehood in November 2000, the region has become even easier target for the vast interests in collusion with the political leadership of the state. The ecological concerns in Central Himalayas do not belong to the region alone. Studies have already indicated how movements and activities in this eco-zone affect the life and support systems far beyond the mountain chain. Therefore, the issues related to its sustainable development and ecological regeneration process need to be viewed in a global perspective.

2. Agriculture in the hills and its recent problems

But now attention shall be drawn to the common people in the central Himalayan.
Please share some of the insights from our fieldwork in the small selected focus area.
The Katyurvalley stretches from Kausani to Bageshwar. The language spoken in this area is Kumauni. It belongs to the Pahari group. All the the villages we visited are situated in Garur Block, District Bageshwar, State Uttarakhand. They are situated on the flank of a hill. Its head is Kausani, a tourist place that can be reached by road as well as by footpath. Small paths wind alongside the slopes. This is the local infrastructure to surmount the altitude differences.
The village size in the hills ranges from 20 to 100 families. Nobody lives in this area, even in the valleys who is not involved in farming. Furthermore without exception every family owns at least one cattle for milk supply.
Most people in the hills are to be considered marginal farmers, for the crops they are able to harvest are not enough for the entire nutrition throughout the year. The sizes of land range from 0,02ha to 2ha. It is worth noticing that the size of land tenure ship is strongly connected to caste, the lower castes owning far less than the upper caste farmers. This figure sheds light, too, on the economical situation which evidently forces them to keep watching out for other sources.
Several people especially among the upper caste men have jobs in public services such as military or education. They would then leave there family behind in the village. Less educated people find work in the various tea gardens or as construction workers, maybe in factories of any industrial area.

The farmers do no longer include their children into the agricultural processes but send them to schools and colleges hoping they may find a well paid work outside the village in one of India's big cities. The agricultural thus is about loosing its self perpetual function.

Farmers who have little spots of land would most likely grow paddy and wheat on their fields, keeping only little vegetables close by the house. Traditional crops such as Madua and other kinds of millets are no longer en vogue. Apart from that the fertilizers introduced to the area by the government in the 70s has shown very bad effects on their growth. Still most farmers are using vermicompost and apply “Uria” only on their paddy fields. For those farmers who do not hire any labour to help in the agricultural work, the fertilizer means the biggest annual investment for

their fields.

Likewise the farmers we interviewed show a clear preference for home-made seeds. Nevertheless some of them use seeds for vegetables from the market while paddy and other seeds are generally grown from the own harvest. Through drying they become storable. Other techniques such as covering the storing box with cow dung, adding walnut leaves inside or ashes from cow dung. None of the interview partners uses any sort of pump well for the fields.

The majority of farmers does not have own facilities but depends on the public canal or natural rivers. Especially in the fields far away from the riverside in the mountains irrigation is considered impossible. Thus the fields depend directly on rain.

None of the interviewed people used any sort of carbon producing machine for their agriculture. It seems thus after the first impressions the zero-carbon based thesis is applicable for the mountainside area in Kumaun. In general the used tools are still the traditional ones such as “Darati” (sickle) and “Hal” (plough).

Wooden tools are overall preferred. They are described as less heavy than tools made of iron. It is professionals who are paid for making them. Yet, there is not much satisfaction with the technology- literate people consider their work as very hard. Especially one Brahman was craving for modern technologies He was making plans how to adapt the local geography to match with big ploughing, sowing and harvesting machines.

Except one family all interviewees owned cattle. The cattle does still perform an important role, in every day life as well as in the ritual sphere. Fodder for the cattle is taken care of in different ways. People who own an own sketch of mixed forest land containing also broad leave trees consider it easy to feed grass as well as leaves to their animals. Some people use the village forest, too for finding fodder. People with much of land would leave parts of their fields uncultivated for growing grass. Some of the interviewees with very less land reported they are forced to buy all fodder for their animals. Grass is the basic animal fodder.

For bedding the cattle inside the stable all people reported the use of pine tree leaves from the forest. Besides firewood this is the only benefit the farmers can achieve from this big plant.
The two cardinal trees in the local forests are “Chir” Pine trees and “Banj” oak trees. The Pine was introduced at the advent of industrial use of forest products. Since that time it has spread tremendously. There was overwhelming unanimity in the opinion of an all pervading pine tree population. Although it is regarded as bad for other neighbouring plants people use its leaves for cattle litter and sometimes for firewood. Some people say it is not able to keep the soil uphill. The general attitude towards pine trees is quite negative. Furthermore the mono forest does not only provide little benefit for the local humans, also animals like the monkeys cannot find fodder. Desperate above all is the situation of the various other plants in the former forest who disappear amidst the pine trees.

While the Pine is widely supposed to consume huge amounts of water, the oak is considered as water preserving. Where they can find the villagers use there leaves as fodder for the cattle.
As the structure of the forest is concerned people do not seem to regard themselves as an active part in a matter where they have any influence- only one person told about tree planting activities in his family history.

Farmers with bigger pieces of land tend to own a sketch of forest besides their cultivated fields and grasslands which they may use freely.

Weather patterns are taken into account as far as they have a direct impact on the crops. It is noticed the rain comes not in right times as it used to until the 70s. Furthermore it is not distributed equally. Some spots are craving for rain while others have more than they can take.

Even if there is enough rain people notice the water in the rivers is less. Some of the small ones even remain dry altogether. One explanation for this phenomena was the “small size” of the raindrops. Other reasons are seen in diversion of water and massive felling of trees. We were told in this area no snow has been seen since 1976.

Besides rain there is another problem with weather that was marginally mentioned by two people – heat. The summers are experienced more hot and there is heat in months where it should be more cold like December or January. Obviously rain is the most important element in weather, as water is considered the virulent limiting factor for agriculture.

In the end leading a lifestyle as hill farmer appears to be a necessity rather than a choice. Most of the farmers are not satisfied with their situation in society in terms of estimation. In addition they consider their economical situation as disadvantaged.

Especially farmers who have to struggle for their livelihood -the have-nots-, complain about the farmers´respect less place in society. The situation of farmers is regarded worse than ever: “Farmer is today the last man in society.” - farming as last choice? Even well of educated farmers assert that farming is a very hard kind of work which people try to avoid if possible by any means.

Altogether there is little care among the hill people for ecological issues and hardly awareness of the own position as a part of the ecological system.

Sustainable Agriculture: There is a need to combine diversity, productivity, and livelihood security in the agricultural policies. For this, it is necessary to build on indigenous biodiversity, knowledge, critical agro-ecosystems and the traditional farming in the region. A comprehensive movement is called for protecting the local seeds varieties like mandua (finger millet, Eleusine coracana), jhangora (barn yard millet, oplismenus frumentaceus), ramdana (amaranthus), rajma (common beans), ogal (buckwheat), urad (black gram), moong (green gram), naurangi (mix of pulses), gahath/ kulth (horsegram), bhat (soyabean, Glycinia soja), (French beans, Vigna catiang) and bhang (cannabis).

Still hill agriculture is basically zero carbon based agriculture there is very few use of machines in field . Farmers still use animal and human energy in farming .

Hill Economy: The hill economy has to be evolved in such a manner that it suffices the needs of all, not the greed of a few. the economy that paves the way for quality education and health, encourages local self-reliance, and promotes the ethics of sustainability within the indigenous cultures. Efforts should be on a large scale to stop run-off loaded with discharges from human settlements and tourist resorts. There is a need for developing a tourism industry free form monopolies but on the model of community-based eco-tourism. The society is caught in the vortex of the market economy and faced with multiple environmental hazards. Due to this, the people are in a state of continuing economic deterioration. In view of this, it would be pertinent to investigate the local organisations’ view that the ecological harmony is second to the redistribution of economic and social avenues.

Water: The ecozone is a victim of uneven spatial distribution of water despite the fact that it houses several major rivers. It is time to ensure that the finite supply of this valuable resource is used optimally and the relationship between water and survival is redefined appropriately. A comprehensive and long-term policy is urgently required to suggest steps to be taken for the perenniality of the local water bodies as will as their linkages to other water systems in the country. Any activity, such as the world assisted the Swajal water and sanitation programme, must not be allowed, as it was a complete failure in delivering anything to the people. Despite abundant traditional knowledge systems, the political leadership is insisting on the large hydro projects. As a result, the mega hydro project in Tehri continues to be in the thick of controversy. It

has to be investigated whether run-of-the-river system or the smaller dams in a great number can deliver equally effectively. The collective history of movements against the various forms forms of exploitation has to be taken further even as the tradition of unpaid voluntary work needs to be revived. These all struggle are the different manifestations of the quest for the sustainability in common life in Uttrakhand hills . There is long history of struggles in Uttrakhand .

3. Illustrations

Noula, a natural way to conserve water.

Work with joy.

Agriculture with the help of animals.

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