Mitigation of Climate Change in the Western Himalayas - *Pragya*

A spring in Kinnaur Valley, Indian Himalaya. (Pragya)

Pragya is an Indian NGO based in Delhi. The organization specializes in working in high altitude areas of the Indian Himalayas (above 8,000ft), and is the only NGO to have a presence in every Indian Himalayan state. Pragya is currently implementing a project called Water Access and Wasteland Development in the Western Himalayas, which combines natural resource management strategies and infusion of appropriate technology, along with social mobilization, to mitigate the growing problems of water and ecosystem stress in this region.

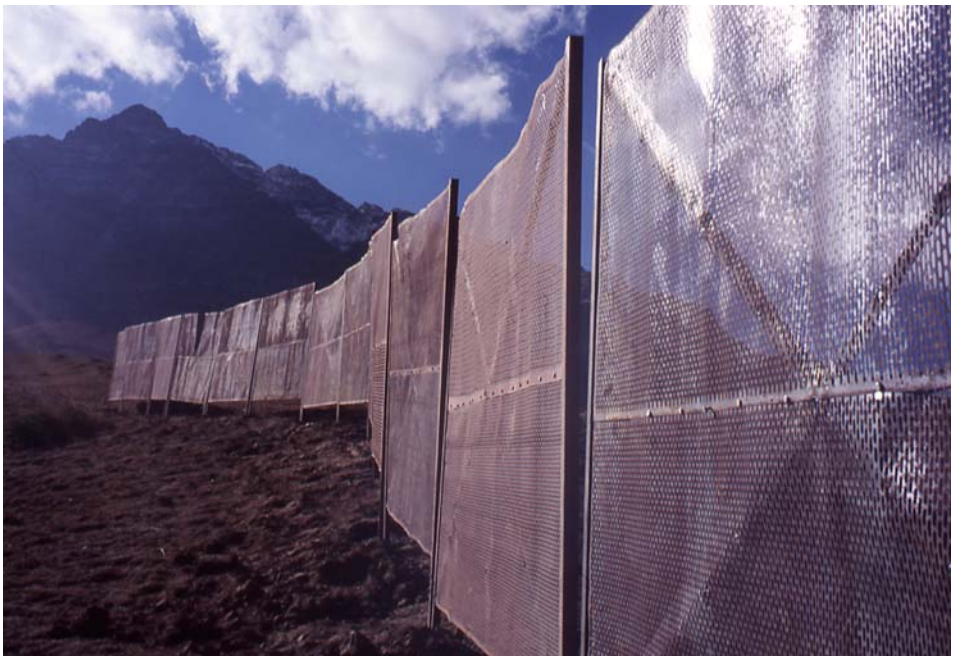
Water has never been an abundant resource in the Western Himalayas. Despite the vast reserves stored in snow and glaciers amongst the peaks, which are the ultimate source of the great rivers which water the Punjab, the Western Himalayan valleys receive minimal rainfall, and nearly all their water comes from glaciers and snowmelt. The Intergovernmental Panel on Climate Change (IPCC) has predicted that the pattern of climate change could be up to three to five times higher in high altitude areas than lowlands, which suggests that the Himalayas are likely to experience large temperature rises – large enough to greatly reduce the size of, or melt completely, most of the glaciers and mountain snow from which the Western Himalayan valleys receive their water.

The well-known fact that glaciers in the region have significantly shrunk over recent decades has not reduced the overall amount of water available as yet, but changes in the patterns of precipitation throughout the year mean that snow tends to melt more quickly in the spring and early summer, leaving a reduced flow of rivers and springs later in the summer, which is the growing season. The increasingly erratic and unpredictable precipitation patterns, added to the reduction of meltwater which will no doubt eventually occur once the glaciers are exhausted, make the careful and sustainable management of water resources vital for the future of Western Himalayan communities.

The Water Access and Wasteland Development Project is concerned with both the supply and the uses of water, and it aims to develop procedures for integrated water management at a watershed level.

The springs from which villages traditionally drew their water, many of which have begun to dwindle in recent years, are being rejuvenated by techniques such as afforesting the slopes above the outlet with native trees, shrubs and herbs, and installation of harvesting technologies such as snow pits, snow fences and check walls still higher up. All of these measures reduce water runoff when the snow melts in spring, and promote absorption of water into the soil. Snow harvesting techniques are also being used at many sites which a few years ago were suitable for crops, but due to the increasing scarcity of water have become parched wasteland and scrub. By increasing the moisture content of the soil these lands can become suitable for growing high value cash crops such as medicinal plants, which, being mostly perennial, bind the soil and reduce surface runoff, and can significantly increase the incomes of marginal farmers.

The project is also catalyzing the development of norms and processes for careful use and equitable distribution of water in households and villages, and also between villages which share the same water source. This includes establishing community-based institutions to oversee the implementation of these procedures, and settle disputes (the number of which have been growing in recent years, as resources diminish) by consensus. Apart from water, these institutions will also have a role in managing other common property resources (CPRs) such as forests and rangelands. In these fragile ecosystems the cultivated sphere is closely linked to the “wild”, which itself plays a vital role in sustaining the livelihoods of local people. The growing number of disputes regarding woodcutting and grazing rights in recent years show to what extent the CPRs are also becoming degraded, and how serious the consequences of this are for populations who depend on them.



Snow fences in Lahaul Valley, Indian Himalaya. Photo: Pragya

With droughts already common and expected to increase, the project is also setting up seed banks and local credit systems to help farmers recover after the drought period is over. These measures are important firstly because they will reduce the hardship of individual farmers and their families in difficult times, but also on a broader level because they will prevent the ruin of farmers which would cause mass exodus from the region and abandonment of the land, a cycle of further land degradation and more impoverishment.

As climate change progresses, holding on in regions which have always been marginal becomes increasingly difficult: our challenge will be to develop ways of facing these problems to ensure the future prosperity of mountain communities.

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Pragya is a non governmental development organisation working with the indigenous communities in the Indian Himalayas since 1995. Pragya interventions are addressing different need areas of these communities, and involve both research and implementation projects. Projects address issues of biodiversity conservation, traditional knowledge preservation, empowerment of indigenous communities and marginalised groups, infusion of appropriate technologies including renewable energies and microenterprise development. To find out more about Pragya's projects, please visit www.pragya.org .