Promoting the Sustainability of Ecosystem Services

The ecosystems of the Hindu Kush-Himalayas depend largely on the availability of water, but understanding them brings in aspects of economic activities and their interaction with climate change. ICIMOD's environment programme promotes ecosystem stability in transboundary landscapes and watersheds. It aims to link the ecosystem enhancement to improved livelihoods and local adaptation for management of watersheds, rangelands, protected areas, and biodiversity. To develop resilience to environmental changes, it is researching adaptive practices and coping mechanisms for rotational agroforestry (shifting cultivation), forestry, pollination, and management of sloping land and water.

In 2009, the programme focused on outcomes related to building capacity, the knowledge base, regional cooperation, and policy innovations. It also worked to customise international instruments and piloting. This year the most rewarding topics in terms of knowledge generation were crosscutting issues. ICIMOD conducted a pilot programme to study the potential of carbon sequestration in community forests, develop payment mechanisms through carbon financing, and build the capacity of community members to conduct the measurements.

A first analysis of the Hindu Kush-Himalayan region shows that forestry will not be the most suitable land use for carbon sinking, and development of rangeland, which constitutes over 65% of the land use in the region, may be much more promising. This first conclusion will be very relevant to define the position of the Hindu Kush-Himalayan countries in post Kyoto negotiations.

ICIMOD developed new knowledge with a comprehensive vulnerability analysis of the Eastern Himalayas. The study recorded the highest intensity of vulnerability in foothill situations and the downstream river valleys of the Himalayas and reached a tentative conclusion that reducing vulnerabilities will require substantial investments upstream. This insight has lead to the conception and implementation of a programme on mountain ecosystem management around Mount Kailash with the three countries, China, India, and Nepal participating in the initiative.

Following an international conference organised by ICIMOD at the end of 2008, the idea of trans-Himalayan landscape corridors was developed to focus the collection of data and research. The Fourth Tibetan Plateau Research Symposium in Beijing developed the idea further. The Chinese Academy of Sciences is now propagating the idea as the Third Pole Research Programme.

ICIMOD also worked at the policy level by conducting workshops for high-level officials in Nepal and Pakistan to promote specific rangeland policies in the respective countries.

ICIMOD disseminated knowledge through a number of training events to build capacity in all the environmental action areas, including low cost soil and water conservation. Afghanistan and Myanmar requested tailor-made training courses, which were conducted successfully in these countries.

ICIMOD also promoted regional and country chapters of the watershed network, World Overview Conservation Approaches Technology (WOCAT), which serves to bring various stakeholders together to share common approaches regionally and globally so that they can be adapted for specific locations. In Pakistan, where ICIMOD is backstopping a comprehensive programme promoted by FAO, concrete application and scaling up of this learning was hampered by the security situation.

Soil and water conservation – Sharing low cost technology through training

Farmers in the Nasfanj valley of Guzara district of Herat province, Afghanistan, have constructed 300 gully plugs of stone and 969 counter trenches as affordable soil and water conservation measures. In the first year, 2009, the farmers have found that the gully plugs and trenches hold the rainwater and keep it from damaging the gullies, so there is more vegetation, and the water levels in irrigation wells have risen three metres.

The local participants then conducted training at the community level. The seven villages of the Nasfanj valley sent 100 community members to training sessions held for six months until June 2009. The communities also established numerous plots to grow vegetables, saffron, and tree saplings. One village alone planted 1,964 saplings.

The farmers learned the technology through local training sessions offered by partner organisations, whose staff members had attended ICIMOD's Low Cost Soil and Water Conservation Techniques and Watershed Management Activities Training (LCSWCT) in Kathmandu.

The training was designed as capacity building for development professionals in order to disseminate the learning of ICIMOD's experiences in integrated watershed management. Since 2007, 56 participants working in natural resource management have attended the annual three-week training events. At the end of the training, each of them was expected to prepare an action plan to share and implement the conservation measures learned.

An expected outcome of the training was that participants would design 'tailor-made' training for their respective countries to build the capacity of local development workers. Some countries had backstopping support from ICIMOD – Afghanistan, China (TAR), and Myanmar. As of mid 2009, 117 local participants have been trained – with 88 in Afghanistan alone.

Mr Kuenzang Dorji, Bhutan

"All the classes that we have had so far have been very useful. We have come to realise that directing our efforts only to the problems is not sufficient, that we must understand the whole mechanism behind the problem. We have also had many practical sessions to gain hands on experience. We are now confident that we can make a difference in the lives of our people."

Meanwhile, in the moist climate of Bhutan, team members, who attended the Kathmandu training, worked with local farmers to construct a terraced citrus orchard as a demonstration site. They used simple devices, such as an 'A' frame, to locate the contours where they cut and filled the terraces. The advantage of the terraces is that they break a long slope into shorter ones that catch runoff water, let it soak into the ground, and deliver the excess water safely to the bottom of a hillside. Terraces are often used in combination with other conservation practices, such as planting grass, to provide more complete soil protection.

Environmental services – Training forest users to measure the carbon pool

"The training by ICIMOD helped to make our community forest members more aware of the importance of conserving the quality of the forest, not just the number of trees," says Rameshwore Ghimire, the chairperson of Kafle Forest User Group (FUG) in Lamatar village southwest of Kathmandu. "As well, we have hopes that we can receive payments in the future for conserving and measuring our forest."

In collaboration with local forest users, ICIMOD did research on carbon assessments in FUGs under the 'Kyoto: Think Global Act Local Project' funded by the Dutch Foreign Ministry. The aim was to generate awareness and understanding of the proposed global REDD policy at local levels. The project also aimed to show that communities were capable of carrying out the measurements needed for them to be able to benefit from REDD.

From 2003 to 2009, the project trained members of forest user groups to make annual assessments of the carbon pool in their community forests in three districts. The three-day training sessions were conducted by an NGO using forest technicians. Forest user group members could then collect forest inventory data under the supervision of the NGO. They could locate permanent plots using a GPS hand set, record the diameter of trees, identify species, count sapling regeneration, weigh litter biomass, and take soil samples from the permanent plots. Not all members could carry out all tasks equally, but non-literate members could identify species while users with 8 to 12 years of schooling could use GPS sets to locate plots. An NGO technician did the actual calculation of carbon from the data the forest users collected.

Not only has the Kafle FUG now conducted its own assessment for six years, it has also trained many other FUGs to do their own carbon assessments. This group has been successful in continuing to conduct its own assessments partly because it is located close to the city, so its members do not have to leave to find employment. In many groups in more remote locations, the project often had to repeat the training because nearly half of those trained migrated in search of work.

Through this project, local forest users were able to understand the concept of carbon trading and the global REDD policy. They are interested in voluntary participation in carbon trading. The results for the carbon assessments done by some FUGs, such as the Kafle group, tally with expert assessments. With more training, these users will be able to report their own carbon stocks, reducing the costs involved in having experts visit their forest.

The users have found that the data collected is also useful in preparing their five-year operational plans to show how much their forest has increased. They would also like to incorporate carbon management into these plans for the use of their community forest.

This project raised awareness, built capacity at the local level, and empowered local society to prepare for REDD. When REDD is eventually agreed at global level, community forest users who are trained in REDD will be able to work with the Forest Department and claim their share of the carbon credits that their country may generate. Although the project has been completed in this community near Kathmandu, it is now scaling up to work with groups in three more districts – Charikot, Chitwan, and Gorkha.

"We now have the data from the past six years ready for when the carbon trading and REDD begins," says Sharad Ghimire, the FUG member in charge of doing the measurements. Not only has he trained members of other FUGs, he was demonstrating the process to seminar participants from other regional member countries.

Jiaju Zangzhai, Sichuan, China