

Comanagement of Natural Resources

LOCAL LEARNING FOR POVERTY REDUCTION

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Learning together to share resources in the mountains of Bhutan

Researchers and villagers set an example for the nation

Tradition is strong among the mountain people of Bhutan. Often it is tradition that governs the sharing of resources, sometimes resulting in inequity and conflict.

Tradition sometimes governs research too, but when a team of researchers abandoned the traditional approach to work directly with the communities, they found that together they could break down the barriers and develop new ways to ensure that valuable resources are both protected and equitably shared.

For the villagers of the Lingmutedy Chu valley, high in the mountains of the Kingdom of Bhutan, the government's Renewable Natural Resources Research Centre (RNRRC) at nearby Bajo was not well known. The researchers there had focused since its founding on conventional in-house research on agricultural commodity production, an approach that involved little direct input from the farmers in the seven small villages that dot the sides of the valley.

That changed, however, when a group of researchers from RNRRC adopted a new, participatory approach that involved on-farm research. Shyly at first, because the participatory research methods were as new to them as to the local people, the scientists began to question the farmers about their farming methods, priorities, and needs. The reaction was summed up by 68-year-old farmer Ap Wangda: "Never in my life was I consulted," he exclaimed. "I was always asked to do. This is the first time that people are asking my views on our needs."

It was the beginning of a relationship that dramatically changed the way the scientists at Bajo approached the whole research process. It brought many improvements to

the lives of the 1 000 people living in the Lingmutedy Chu watershed. And ultimately what happened here had a profound impact on research and development in renewable natural resources throughout the country.



RNRRC, Bajo

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RNRRC, Bajo

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Improving linkages

Of course, the changes at Bajo did not happen overnight. Rather, the research approach evolved from its original focus on single commodities to farming systems and then to integrated natural resource management. The researchers came to recognize that constraints to agricultural production have complex causes linked to other resource systems as well as to socioeconomic factors. Two of those researchers, Sangay Duba and Mahesh Ghimiray, wrote: “The research program on farming systems primarily studied private lands and did not consider the farmers’ reliance on common resources such as forests and water.”

So, with support from IDRC and the Swiss Agency for Development and Cooperation (SDC), the research team began to develop an integrated, multisectoral approach based on resource management in this complex mountain ecosystem. “We wanted to expand the scope of research from solely on-farm to include broader resource systems,” wrote Duba and Ghimiray. That meant linking crops, livestock, forests, water — and people, for the researchers also wanted to improve linkages between farmers, researchers, extension workers, and the local communities.

It did not take long for the researchers to learn that people were the key to sustainable resource management. The topics the researchers studied were based on their consultations with the villagers. Many of their technical interventions arose from the experiences of the local farmers, and these interventions were usually the most successful. But people and tradition were also at the root of some of the problems in Lingmutey Chu, most particularly the issue of water management for irrigation — or who owns the rights to water.

The highest of the seven villages in the valley sits at 2 170 m, almost 900 m above its lowest neighbour. Farmers lower down the watershed often suffered from

lack of water, particularly during the transplanting period for the rice crop, just before the June rains, when water flows are lowest. The researchers soon realized that the problem lay not so much in a lack of water but in the traditional water rights system that allocated user rights to communities upstream on a “first come, first served” basis.

With no incentive to use water efficiently, the upstream villages extracted more water than they needed, and the waste was compounded by a system of inefficient, leaky supply canals. The upstream villagers, of course, did not want to change the “first come, first served” system, and even aggrieved farmers who resorted to the courts usually found that judges were reluctant to go against tradition. The research team saw this situation as an opportunity to involve the communities in water-management research. They determined to use their newfound participatory skills to develop sustainable options for improvement.

A very different perspective

First, two young water engineers spent three months living in the upper watershed. They walked the fields daily, listening and learning. Talking to the local people, they came to understand exactly how the water was used, and they gained a very different perspective on the issues of water management than the one they had acquired at university. It was this first-hand experience that enabled them to adapt their technical expertise to the realities of the villagers’ lives.

Under the government’s national irrigation policy, established decades earlier, communities were required to form water user associations (WUAs) to maintain the irrigation canals and ensure equitable distribution of the resource. In reality the WUAs existed in name only, they did not function. But for the researchers the WUA represented the opening they needed to involve the people in water management. After discussions with each of the communities, and using the knowledge gained by the water engineers, they revived the local WUA and began a series of interventions.

These included less water-intensive practices for rice cultivation and the introduction of rice varieties that could be planted later in the season when more water is available. They helped to upgrade the canals with the use of concrete and other materials to improve their efficiency. In one particularly steep area where canals were often damaged by landslides, they helped the local community select and plant grass and tree species to stabilize the steep slopes. With these and other interventions the water flow improved and waste was reduced. The WUA now conducts regular meetings and its members attend training programs and monitor the canal system.

Despite these successes, the problem faced by downstream farmers at transplanting time remained. The team held separate discussions with both upstream and downstream communities. The upstream users were adamant that they had the right to divert all the flow into their irrigation canal if they wished, regardless of the needs of downstream

users. The issue was highly sensitive, but eventually the researchers succeeded in breaking down the communication barrier by introducing a role-playing game. With the two sides talking to each other at last, the team was able to negotiate a more equitable water-sharing arrangement and a permanent mechanism for resolving water-allocation disputes.

Community forest project

The team employed a similar approach to collective action in the case of community forestry in Lingmutedy Chu, but with mixed success. Bhutan's Forest and Nature Conservation Act encourages "social forestry" and provides a legal basis for community forests, but the Department of Forestry had been slow to implement this provision of the Act, fearing it would lead to overexploitation. Thus, the research team began what was one of the very first community forest projects in the country.

The people of the Lingmutedy Chu watershed rely on the forest for a variety of resources, including fuel, building materials, and foliage for livestock fodder. A detailed resource assessment conducted by the communities themselves resulted in a management plan that took account of local concerns for forest conservation and use. Working with the researchers, the villagers also produced a forest map that identifies areas requiring protection and potential local use areas for careful exploitation. The communities also conducted a forest demand assessment to estimate the demand for various forest products over the next decade.

The next step was to convince the communities to agree to regard the entire watershed forest as a single community forest. Initially each village wanted to establish its own community forest. There were concerns that a larger forest would mean too much labour and management responsibility, and some doubted that the benefits would be shared equally, especially those from the lower villages. The resource assessment had revealed some problems faced by those in the lower regions, including degradation of the forest close to the villages, resulting in soil erosion. There were shortages of firewood and timber and women had to travel longer distances to collect firewood and fodder.

Despite these concerns, all the villages eventually agreed to the researchers' proposal to create a single community forest for their mutual benefit — and to protect their forest resources from exploitation by outsiders. The Act requires that a community forest must have at least one community forest user group (CFUG). Initially, the researchers worked with the communities to form two CFUGs. Both were based in the lower watershed area and included all the households in two villages. Each committee consisted of six members, at least one of whom had to be a woman.

At first things went well. The two groups decided to establish a community forest area on degraded land near the two villages. Soil erosion in the chosen area was very bad, and run-off had created large gullies. The aim was to create a multi-use forest incorporating a variety of species that would both serve community needs and prevent further erosion in the area. The communities selected species that would provide firewood, lumber, and fodder for livestock, and the researchers added some fast-growing leguminous species. Then the real work began — communally. Each household contributed labour to establish a forest nursery, to dig pits, build fences, and plant and water seedlings.

This part of the community forest now covers 37 ha. It contains more than two dozen species, including grasses that both help to prevent erosion and provide feed for livestock. With the help of the research team, the CFUG members also developed a set of by-laws to govern the use and maintenance of the forest by the entire watershed community.

Despite the undoubted success of this undertaking, there have been some problems. The objective of ensuring access to all proved difficult to sustain. Some of the poorer villagers, especially women heads of households, could not always contribute a full share of the work needed to maintain the plantations, and came into conflict with other user group members. Wealthier farmers and larger landowners began to dominate decision-making, and some of the women dropped out of the CFUG management committees.

This clearly demonstrated how challenging it can be to build equitable resource-management institutions in the face of deeply imbedded social and political inequities. But there is also ample evidence that the new collective resource management institutions in Lingmutedy Chu have made a difference in local attitudes and confidence. For



RNRC, Bajo

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example, several community development initiatives, such as joint infrastructure construction or group credit schemes, have arisen independently of the research project. Communities now take more initiative and have an active voice in local government decisions.

Contagious change

The change in attitude has proven to be contagious. Other communities across the nation witnessed the changes taking place in Lingmutedy Chu and have learned from them. There are now almost two dozen CFUGs in the country, and more communities are preparing to establish user groups and their own community forests. In the area of water management — an issue that is common throughout Bhutan — the government has adopted the lessons from Lingmutedy Chu and endorsed the principles of equitable access to water resources. A new policy now provides for mechanisms by which downstream users can compensate those upstream who are able to improve their management and release more water. In fact, the experience in managing community water supply here was influential in the drafting of Bhutan's new National Water Policy and Water Act.

The impact of the project has also transformed the way RNRRC operates. The Centre has reoriented its research agenda to reflect community priorities. Research managers have learned from experience and now use a more participatory approach to ensure that their work, including the plant breeding, is relevant to the local farmers. The integrated watershed research and other farming systems work continues, and there are other changes. Social scientists are now part of the mix, strengthening the team's participatory research skills. As well, staff from all specialties meet regularly to discuss their work and to seek opportunities for synergy. At Bajo there is now a firm commitment to a broad expansion of community-based natural resource management research to support rural livelihoods in the region.

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