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Conservation by communities

Community seed bank

The CBM approach

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To help farmers conserve and use genetic resources on their farms, LI-BIRD is working with farmers in Nepal through the community based biodiversity management approach. Today, more than 11000 farming households in Nepal are engaged in revival and conservation of local seeds.

Loss of agricultural biodiversity on farmers' field and natural habitats is one of the many persistent challenges that farming communities face, particularly in developing countries like Nepal. While efforts to preserve local genetic resources are negligible, the government of Nepal and many civil society organizations are promoting improved and hybrid seeds, to improve food production. This is often done undermining the farmers' traditional practices of saving and exchanging seeds within their network. Neglected by formal research and development, farmers have to rely on their own networks to continue to have access to this diversity. To promote sustainable conservation and use of genetic resources, Local Initiatives for Biodiversity Research and Development (LI-BIRD), a non-governmental organization in Nepal, has been promoting an approach called community-based biodiversity management (CBM) in different geographic regions of Nepal since the late 1990s.

CBM is an approach that empowers farming communities to manage local genetic resources for sustainable livelihoods through collective decision-making. Empowerment of farming communities, conservation of agricultural biodiversity and supporting biodiversity-based livelihoods are the three building blocks of CBM approach. CBM can also be considered a processed methodology that builds on the capacities and interests of farming communities and on the prevalent community structures. This approach was an outcome of Bioersivity International led project 'Strengthening the scientific basis of *in situ* conservation of agricultural biodiversity', jointly implemented by LI-BIRD and Nepal Agricultural Research Council (NARC) from 1998 to 2006 in mid-hills of Begnas, Kaski and terai flat land of Kachorwa, Bara in Nepal.

Organizing farmers for self-directed decision making

In 2009, in order to further refine and scale up the approach, LI-BIRD collaborated with a Norwegian NGO, The Development Fund. The CBM approach was implemented in 8 additional districts of Nepal covering high hills, mid-hills and terai flat land.

Local aromatic rice varieties called *Tilki*, *Kalonuniya Shivagunj*, which were about to disappear, have now become a commonly grown variety.

Collective decision-making process is central to CBM as it believes in the principle of locals taking the lead in their own development including on-farm management of agricultural biodiversity. This is possible only if farmers are organized to understand, articulate and implement their own self-directed goals. In each site, farmers were organized in ward level groups (ward is the lowest political unit in Nepal). These groups were further federated into an umbrella organization called Biodiversity Conservation and Development Committee (BCDC), to serve as a nodal agency for implementing CBM at local level. BCDCs plan their annual activities in a way that ensures continued conservation and use of local genetic resources of the locality.

Building capacities of farmers is considered the primary activity of CBM. Capacity building is usually geared towards empowering farmers' organization to make informed decisions for planning and implementation of on-farm management of agricultural biodiversity and improving their livelihoods.

Till now, more than 11000 farming households are organized in 30 BCDCs and are engaged in implementing CBM approach across Nepal. The number of members is on the rise year after year.

Community Seed Banks

Owing to reasons like farmers tendency to adopt what fellow farmers introduce, market forces, other social and economic reasons, many local varieties and breeds have already been lost.

And many are on the verge of extinction. Hence, on-farm management of agricultural biodiversity is promoted in areas which are diversity rich as well as diversity poor. In areas which are poor in diversity, new varieties, breeds and trees are introduced to bring in resilience into the system. It aims to have varieties of seeds, planting material and animal breeds under farmers' control.

In CBM approach, while the process is initially facilitated by external agencies, the community members are trained to get involved in the documentation of local genetic resources, associated traditional knowledge and information. Such data base is not only necessary to identify common, rare and unique genetic resources but also to understand the existing and potential value of available genetic resources of the area. Participatory four-cell analysis is employed as a tool to assess the status of agricultural biodiversity in each CBM site and understand dynamics behind the changes in local crop populations. Based on such study, analysis and enhanced knowledge, CBM plan is prepared for a specific crop or variety or breed, year after year.

Community seed bank (CSB) is considered as a major activity to promote on farm management of agricultural biodiversity. Till now, 15 community seed banks have been established in different geographical locations of Nepal with financial and technical support from LI-BIRD. CSBs also provide easy access to diverse types of seeds at local level, since the market offers only a handful of varieties. Around 1195 accessions of local crops and varieties

Biodiversity Fair



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Taro diversity block

are conserved in the CSBs. And, nearly 2000 farmers use diverse types of local seeds from these community seed banks, annually.

Enhancing rural livelihoods

In order to generate economic incentives from conservation of local varieties and breeds, CBM approach promotes biodiversity-based income generating options. Based on value of local genetic resources and analyses of its potential, activities such as seed production, expansion of area of local varieties, increasing number of local animal breeds, breed purification, value addition and marketing of traditional and local food items, introduction of new processing units and other small enterprises are designed, both at the individual level as well as at the community level. To ensure quality of produces and sustaining production mechanisms, necessary knowledge and skills transformation related activities are conducted.

The successes, innovations and transformations resulting from CBM are diverse and are worth mentioning. Local aromatic rice varieties called *Tilki* and *Kalonuniya* at Rampur in Dang district and Shivagunj in Jhapa district, respectively, which were about to disappear, have now become a commonly grown variety. People are able to earn income from selling it at a premium price. The population of local chicken have increased in Kunjo and Mustang. Farmers are also self-sufficient in chillies, instead of buying from the market. In Agyauli, Nawalparasi, *Hurra*, a rare local breed of pig has become common and is now an important source of cash income for over 100 poor households of *Majhi* and *Bote* indigenous people. In the same village, communities have come together to regenerate over 10 hectares of public grazing land that had been damaged by flooding to improve fodder and forage security for the farming households.

In Talium, Jumla, CBM has set an example of its effectiveness in reducing drudgery of women. *Dhatelo*, a native plant in the area that is commonly planted as a fence is also used for extracting edible oil from its seed. Because of the laborious oil extraction process and need to walk hours for its collection, mostly, women from poorer families used to collect it and extract oil by hand.

Normally, it takes a day to extract 2 liters oil for a woman with the traditional process. Now, with support from CBM and community efforts, the situation has changed. There is an oil press machine, which can extract 10 kg *Dhatelo* seeds that produce about 3 to 5 liters of oil within 30 minutes. This has not only reduced the drudgery and workload of women but also increased income of poor women from selling the oil. Now the interest on *Dhatelo* is not limited to poor women, but villagers have come together and planted 2200 saplings this year in the wasteland nearby the village. *Dhatelo* with its robust root system, is being considered to serve as a landslide barrier.

Sustaining CBM

A CBM fund is created as a mechanism for local financing, with contributions from the community and LI-BIRD. The CBM fund is a revolving fund operated and managed by a farmers' organization to provide easy access to small credit for resource poor farmers. By investing in additional agriculture based livelihood assets, farmers can improve household income and resilience. Interest generated from its mobilization is used to cover the operating cost of the farmers' organization including continued regeneration and distribution of seeds of local varieties.

The CBM fund created in 21 villages has crossed USD 100,000. Annually, more than 2000 members get a small loan from the fund in order to start a small enterprise and support household economy. Records show that more than 50 percent of users are from a resource poor category. CBM fund has become a permanent source of generating financial resources for sustaining CBM activities and institutional sustainability.



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