COMMUNITY SEED BANKS IN NEPAL
PAST, PRESENT, FUTURE

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Pitambar Shrestha[1], Ronnie Vernooy[2] and Pashupati Chaudhary[1], Editors

[1]Local Initiatives for Biodiversity, Research and Development (LI-BIRD)
P.O. Box: 324, Pokhara, Kaski, Nepal
Tel: +977-61-526834/535357
Fax: +977-61-539956
E mail: info@libird.org
Web: www.libird.org

[2]Bioversity International
Via dei Tre Denari 472/a
00057 Maccarese (Fiumicino) Rome, Italy
Tel: +39-06-61181
Fax: +39-06-61979661
Email: bioversity@cgiar.org
Website: www.bioversityinternational.org

A Brief Overview of Community Seed Bank Initiatives in Nepal[31]

BAL KRISHNA JOSHI

National Agriculture Genetic Resources Centre, Nepal Agricultural Research Council (NARC), Khumaltar, Lalitpur
Corresponding email: joshibalak@yahoo.com

Photos: Pitambar Shrestha (left and top right), Chandra Gurung (bottom right)

Introduction

Agricultural genetic resources (AGRs) are the basis of human life. Diverse AGRs have been developed over time and maintained across regions by farming communities. However, diversity is now decreasing mainly due to increased availability and cultivation of modern varieties, both in the markets and through agricultural development agencies. Multiple use values of local varieties have been superseded by single value, i.e. the high yield of modern varieties. Over time, however, agronomists and farmers have begun to understand the value of local crop diversity for food security as well as the importance of access to seeds by farmers.

The modern agricultural system has increased the dependency of farmers on private seed companies for seeds and planting materials. This has led farming communities to look for the alternative, so that local diversity can easily be accessed and conserved. Community seed banks (CSB) have emerged as an alternative to conserve local diversity as well as to make seeds accessible to all farming communities. CSB is a dynamic system of conservation (conservation through utilization) and is considered a viable, effective and sustainable option for the conservation of AGRs. With the objective of preserving landraces and making planting materials and associated information available to farmers, the concept of

31 This paper was not presented in the workshop.

CSB emerged in Nepal in 1994. In the recent past, many organizations have supported the establishment of CSBs across the country.

Initiation of community seed bank in Nepal

In the past, farmers had three seed source options, namely saving and exchanging among farmers, buying seeds from seed companies and agricultural development agencies. The last two sources were only for modern varieties. USC-Canada Nepal (USCCN) recognized the importance of local crop diversity for improving food security and started sustainable agricultural activities in Dalchoki, Lalitpur in 1989. Since 1992, USCCN started a program, Landraces Enhancement and Conservation (LEC) with the objectives of 1) developing site-specific varieties by utilizing local crop genepools, 2) increasing agricultural diversity by conserving local landraces, 3) making them competitive and 4) strengthening farmer's informal seed networks. Conservation through utilization was the main strategy considered to conserve local crop genetic resources. Under the LEC programme, seed and plant selection criteria were developed in consultation with farmers. During discussion, smallholder and marginalized farmers reported that they could not save the seeds for the next season and that there was no way to obtain the seeds of local varieties. They mentioned, however, that seeds of modern varieties were available. To solve this problem, USCCN started collecting and storing seeds of local varieties, making them available to farmers since 1994 in Dalchoki VDC. This was the first community seed bank in the country initiated by a NGO. In 1996, a two-story building was constructed for storing seeds and displaying traditional agricultural tools and knowledge. The first floor was almost underground allowing to keeping the room cool without too much fluctuation in temperature. Gradually, Dalchoki CSB started collection, conservation, improvement and multiplication of locally available landraces, making them available to poor farmers (see, Bhandari *et al. in* this volume for details).

With a similar objective, Nepal Agricultural Research Council (NARC), Local Initiatives for Biodiversity, Research and Development (LI-BIRD) and Bioversity International supported a farming community to establish a CSB at Kachorwa, Bara in 2003 (Figure 1). This community seed bank has been managed by a farmers' organization since its beginning. Bara district is highly influenced by modern agricultural technologies, which has resulted in loss of traditional varieties and increased dependency for agricultural inputs. In spite of this situation, crop landraces have still been found in limited areas grown by a limited number of households to meet the seed requirements for variable growing environments and various household needs. Bioversity International's Global *in situ* conservation project brought awareness among the communities about the importance of local crop diversity and supported farming community to conserve and utilize the local genepools. Supported by the project, the Bara CSB focused on the conservation and enhancement of local varieties.

From the learning of the Global *in situ* conservation project, LI-BIRD has supported the establishment of 14 other CSBs across the country (in Jhapa, Sankhuwasabha, Dhading,

Tanahu, Nawalparasi, Dang, Bardiya, Kailali, Kanchanpur, Doti and Jumla districts). LI-BIRD has published many papers in proceedings and book chapters and also a source book on CSBs. Parivartan Nepal, a local NGO based in Hetauda, also supported the establishment of a CSB in Sindhuli district in 2006 focusing on local crop varieties (chapter 6 of this volume).

The Department of Agriculture (DoA) has been aware of the low adoption rate of modern varieties and very low seed replacement rate for cereal crops (about 6%), most likely due to the unavailability of suitable varieties and poor access to modern varieties by smallholder farmers. To address these challenges and improve the agricultural productivity of poor, marginalized and subsistence farmers, the Government of Nepal announced the establishment of a number of CSBs in its Budget Speech of the 2065/66 fiscal year. The DoA has developed CSB implementation guidelines including a plan to establish CSBs in different districts across the country. Until now, the DoA has supported the establishment of five CSBs in Dadeldhura, Sindhupalchowk, Okhaldhunga, Gulmi and Jajarkot. The main objectives of the CSBs under the DoA are to enhance access, exchange, use and management of quality seeds of farmers' varieties and modern varieties, according to the preferences and choice of the farmers, and their production, processing and storage in a community seed bank (see, chapter 9 of this volume for more details).

Oxfam Nepal introduced the CSB approach under the food security and livelihood programme in 2009 in Dadeldhura and Dailekh districts after realizing that the availability and access to seeds, both in terms of quality and quantity, were key constraints, especially for farmers in remote areas of Nepal. Oxfam Nepal has supported the establishment of 90 CSBs (65 in Dailekh and 25 in Dadeldhura districts) in 2009 with the objectives of promoting community access to quality seeds of crop varieties and associated technologies and the conservation of local varieties (chapter 8 of this volume).

In 2011, the Nepal Agriculture Genetic Resources Centre (Genebank, NARC) supported the establishment of a CSB in Simariya village of Sunsari district targeting the conservation and enhancement of local crop genetic resources. The genebank also provided training on CSB management to CSB members in 2012. The genebank considers CSBs as an important strategy for conserving genetic resources on-farm and started working with four CSBs (Dalchoki, Lalitpur; Kachorwa, Bara; Simariya, Sunsari and Gadariya, Kailali) from 2012.

At present (June 2013), there are a total of 115 CSBs in Nepal (Table 1 and Figure 1) including two CSBs in Parbat and Rasuwa districts. CSBs are mainly for crop species which produce orthodox seeds. However, the community seed bank in Gadariya, Kailali has established a field genebank of mango in 2011, the community seed bank in Purkot, Tanahu has maintained a field genebank of banana, and similar types of field genebanks are being established in Dalchoki and Kachorwa communities. Community field genebanks are for conserving crop species which either produce recalcitrant seeds or do not produce any seeds. They are managed by the community.

Table 1: List of community seed banks (CSB) in Nepal

Supported by	Year started	No. of CSBs	Districts	Priority crops
USCCN	1994	1	Lalitpur	Local crop species
LI-BIRD/NARC/ /Bioversity	2003	1	Bara	Local crop species
Parivartan Nepal	2006	1	Sindhuli	Local crop species
LI-BIRD	2007	3	Bardiya, Kailali, Kanchanpur	Local crop species
	2008	3	Kailali, Kanchanpur	Local crop species
	2009	8	Doti, Dang, Nawalparasi, Tanahu, Dhading, Sankhuwasabha, Jhapa, Jumla	Local crop species
DoA	2009	3	Dadeldhura, Sindhupalchowk, Okhaldunga	Improved varieties
	2011	2	Gulmi, Jajarkot	Improved varieties
Oxfam Nepal	2009	90	Dadeldhura, Dailekh	Improved varieties
Genebank/NARC	2011	1	Sunsari	Local crop species
Total		**113**		

*CSBs in Parbat and Rasuwa have not been included in the Table due to limited information. Data based on information collected from collaborating agencies.

Target crop species and strategies

In Nepal, CSBs can be grouped into three categories based on the types of genetic materials they handle. These are a) CSBs which deal with only local varieties, b) CSBs which handle only modern varieties and c) CSBs which include both local and modern varieties. The first type of CSB is more important in regards to conservation of AGRs.

Basically, CSB is a system of conservation and utilization of local genetic resources, operated at local levels and run by the community. Broadly, CSB is a community-led management approach of agriculturally important planting materials which involves production, collection, processing, storage, distribution (exchange, loan, grant, sell) and marketing of locally important genetic resources.

A common CSB strategy is to include all kinds of planting materials that are important to the local community, either in a community seed bank or community field genebank. CSB is managed and controlled by a local community. CSB can sell or exchange the seeds with farming community members or provide space to farmers for storing seeds. A prime strategy of any CSB should be its contribution to food security at the local level through conserving and enhancing local crop diversity. Only conservation is not a long lasting strategy to sustain CSB, therefore, conservation through utilization should be the primary operational strategy of a CSB.

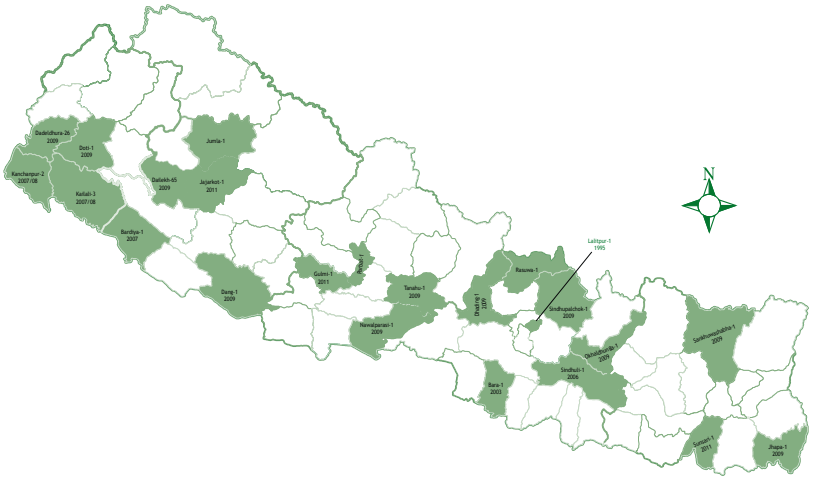

Figure 1: Locations and starting dates of community seed banks in Nepal

Importance and advantages of a CSB

It is well understood that CSB is a social system of conservation and utilization of local genetic resources, operated at local levels and run by the community. CSB ultimately helps to conserve genetic resources and associated traditional knowledge in an evolutionary way. The options of planting materials provided by CSBs to the farmers are considered an important approach to increase the production of crops at the household level. CSB plays an important role in sustainable agriculture development. The following are the major advantages and roles of CSB:

- CSB helps to conserve local landraces as well as improved varieties through continued utilization.
- Samples stored in the CSB are considered safety duplicates because many of these accessions are generally stored in the National Genebank.
- CSB supports the preservation of rare and endangered landraces.
- All farmers have easy access to planting materials when they are needed.
- Poor farmers do not need to store seeds for planting.
- CSB helps to continuously increase the adaptability of local landraces because of the dynamic nature of conservation.
- Farmers have selection options: seed bank as well as diversity blocks.
- Farmers have access to information regarding landraces and improved varieties.
- All local farmers have access to information on what planting materials are available at the local level.
- The use of a CSB for technology transfer and genetic resource characterization can be effective.

Lesson learned

Community seed banks and community field genebanks (CFGB) are effective and efficient systems for conserving agriculturally important varieties of different crop species in a particular locality. Conservation through utilization is the strategy followed in the CSB and CFGB which are dynamic systems for the conservation and evolution of genes. This ultimately contributes to food security due to the higher adaptability of varieties. All farmers in the community have access to all kinds of planting materials and associated knowledge that are available at the local level. Different approaches and strategies should be followed based on the localities and communities for sustaining the CSB and CFGB.

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