



Joining forces to strengthen community seedbanks worldwide

Top photo: Diversity fair in Zimbabwe organized by the community seed banks. **Credit:** Community Technology Development Trust

Community seedbanks and emerging networks of community seedbanks contribute to the conservation and sustainable use of plant genetic resources for food and agriculture. Community seedbanks can secure improved access to and availability of diverse, locally adapted crops and varieties and enhance related indigenous knowledge and skills in plant management including seed selection, treatment, storage, multiplication and distribution.

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Food and Agriculture
Organization of the
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Introduction

In July 2018, the Food and Agriculture Organization of the United Nations (FAO) and Biodiversity International, with the support of the Global Crop Diversity Trust and the Secretariat of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA), held two events in Rome, Italy, to highlight the contribution of community seedbanks and the emerging networks of community seedbanks to the conservation and sustainable use of plant genetic resources for food and agriculture.¹ Eight representatives of organizations supporting community seedbanks from Africa, Asia, Europe and Latin America presented an overview of achievements, challenges, lessons learned and new opportunities in their countries. They also shared reflections on the prospects of

community seedbanks and their networks. This brief presents a summary of their presentations and reflections.



The International Treaty
ON PLANT GENETIC RESOURCES
FOR FOOD AND AGRICULTURE



CROP
TRUST



Photo: Harvesting of Butia palm fruits in Santa Victória do Palmar municipality, Brazil. **Credit:** Embrapa Clima Temperado/P. Lanzetta

Austria

(adapted from <https://www.arche-noah.at/english/about-arche-noah>)

ARCHE NOAH was established in 1990 as an initiative of heirloom gardeners, farmers and journalists, concerned with the future of seeds and heirloom varieties. ARCHE NOAH responds to the loss of agrobiodiversity with a positive vision and numerous activities that contribute to more diversity, for example, through cultivation of threatened varieties in our gardens, through consumer awareness and political commitment. This attitude connects 13,000 members involved with ARCHE NOAH today. It is a vision of providing respectful care for nature as our number one provider. It is to look at our cultivated plants respectfully, to value gardening and farming as a cultural achievement, to consider ethically-motivated consumption as a contribution to organic and sustainable agriculture, and to make cooking a declaration of love.

Brazil

The Butia Palm Groves Route (*Rota dos Butiazais*, in Portuguese) is an innovative initiative that connects local practices and cultures with new knowledge generation and documentation to conserve and use sustainably an important biodiversity resource that offers ecosystem services and income generation. It represents a cultural network linked to the territories of the remnants of palm grove ecosystems in Brazil, Uruguay and Argentina. The Route aims to add value to Butia fruits, leaves and seeds and associated socio-biodiversity to promote social and economic changes that contribute to regional development and foster local and sectoral interests (e.g. tourism, livestock farming, organic agriculture and handicraft industry). In 2015, many people and institutions joined forces to establish a regional network of living community seedbanks to protect and promote the Butia. Butia palm groves consist of thousands of palms covering extensive areas. The palms are integral to the culture

and history of the local people. Fruits can be consumed fresh or used as culinary ingredients for jelly, juice and liqueur. The leaves are used to produce many utilitarian and decorative objects such as baskets, hats, bags, purses and placemats. In the past, fibres from the leaves were widely used to produce mattresses.

The community seedbank network was developed in a participatory manner, taking into account social, cultural, environmental and economic aspects and based on the results of research projects executed since 2010. The network is a partnership of research institutions, universities, non-governmental organizations (NGOs) and private initiatives. Embrapa Clima Temperado coordinates it and the Brazilian Ministry of the Environment sponsored it from November 2015 to June 2017. Currently, the National Council for Scientific and Technological Development, Ministry of Science, Technology, Innovation and Communication, supports the network.



Photo: The seed archive of ARCHE NOAH includes 5,500 different seeds of crops. Credit: Rupert Pessl



Photo: The Sanxa seed library, Guangxi province, China. Credit: Bioversity International/R.Vernooy

China

Community seedbanks in China are of recent date. Since 2013, the Center for Chinese Agricultural Policy (CCAP) has established more than 10 of them in different parts of the country. They benefit from the results of 20 years of participatory plant breeding (PPB) with farmer communities. PPB aims to bridge the formal and the farmer seed systems by supporting smallholder farmers and their collective efforts. To date, PPB results include: the conservation of more than 1,000 farmer-preferred landraces (maize, rice, soybean and millet); the development of 15 PPB varieties (including one maize hybrid) with average yield increases of 15-30%; and farmer-managed seed production and distribution. CCAP is connecting the community seedbanks to four formal sector genebanks at provincial and national levels across the country.

The community seedbanks receive support from the China Farmer Seeds Network (FSN). Established in 2013, FSN brings together more than 30 communities from 10 provinces, trains farmers in community seed banking, organizes exchanges among FSN communities and beyond, facilitates the establishment of community-based (often women-led) seed production units, promotes community-supported agriculture and ecological farming and links farmers to urban consumers for income generation. FSN uses a systematic and holistic seed systems approach to carry out these activities.

CCAP and FSN are mobilizing policy and legal support to strengthen farmer seed systems. In China's recently completed Seed Law revision, they succeeded to maintain Article 27 (allowing farmers to save, exchange, produce and sell seeds locally) after

law-makers had proposed to remove it. This success can be ascribed to the strong collective action of farmers and other stakeholders.

Mali

In 1991, USC-Canada supported the establishment of the first community seed and tree seedling banks in the country in the village of Douentza Mopti and later in San and Tominian (Ségou) with the help of projects managed by the Genetic Resources Unit of the Institut d'Economie Rurale (URG/IER) and various national and international partners (among which, Bioversity International and FAO). The goal is to contribute to food security by means of the conservation and sustainable use of local plant genetic resources. The community seedbanks provide access to seed through decentralized seed production; they safeguard local diversity and related

knowledge under threat, through exchange mechanisms; create awareness about local diversity and the traditional storage methods to keep it safe; develop formal partnerships with stakeholders; and provide, through exchanges, diverse, quality seeds in enough quantities that respond to local farmers' needs.

Currently, the community seedbanks of Pètaka, Badiari, Fodokan and Diagani maintain 305 millet, 89 sorghum, 4 maize, 1 fonio (*Digitaria exilis*, *Digitaria iburua*), 39 rice, 2 peanut, 85 cowpea and 44 Bambara groundnut accessions. The community seedbanks of Somo, Bolimasso and Boumboro, that were renovated in 2018, store 29 millet, 1 maize, 24 sorghum, 25 fonio, 26 cowpea, 11 Bambara groundnut and 3 sesame accessions of local and improved varieties. Based on local demand, the community seedbanks produce certified seeds. A total of 7,815 kg of seeds have been produced between 2015 and 2017.

Future efforts aim to: strengthen links among community seedbanks at all levels through exchange visits and study tours; build their capacities; mobilize more policy support at

national level; turn community seedbanks into agrobiodiversity innovation, sharing and learning centres combining traditional and scientific knowledge; and find financial resources to maintain community seedbanks effectively and sustainably.

Mexico

Mexico has 26 community seedbanks located throughout the country which exist since 2007. They are part of the strategy for the conservation and sustainable use of plant genetic resources for food and agriculture implemented by the National System of Plant Genetic Resources for Food and Agriculture (SINAREFI). The central objective of the community seedbanks is to support communities in case of seed losses due to natural disasters allowing the re-establishment of farmers' cultivation systems and the re-introduction of commonly used varieties. A second objective is to ensure the availability of seed for each planting cycle. The main activities carried out are: seed collection and distribution; participatory crop improvement; seed production; and education and awareness activities. The community seedbanks safeguard seeds of the so-called milpa system: the traditional system

of maize, common bean and squash combined in the same field enriched with introduced crops such as wheat and oats. The seeds maintained include local varieties, improved old varieties, varieties derived from plant breeding and commercial varieties; the latter obtained more recently. The financing of the community seedbanks comes from the Ministry of Agriculture channelled to a number of public and private entities that take care of establishing and supporting community seedbanks at local level. The operations of the community seedbanks are carried out by the legal representative of the communities, interested producers, scientists, extension service agents and representatives of state governments (Mexico has a federal state system).

The main lessons learned so far are: community seedbanks can be an effective part of a comprehensive strategy for the conservation and sustainable use of plant genetic resources for food and agriculture; producers must understand the principles of seed safeguarding under optimal conditions and apply these locally by making use of appropriate materials and practices; community seedbanks are crucial in areas of high



Photo: At the Koumnatou seed fair, Bougouni, Sikasso, Mali. Credit: Institut d'Economie Rurale



Photo: Laxmi Kumal, the manager of the Purkot community seed bank in Nepal. Credit: Pitambar Shrestha

natural disaster risk, which should be carefully identified and prioritized for support; community seedbanks should be legally recognized and protected to guarantee operational viability and sustainability.

Nepal

Community seedbanks in Nepal have nearly 25 years of history. They were initiated with the support of NGOs who remain important supporters. In 2009, having observed a number of successfully-managed community seedbanks, the government of Nepal adopted the approach and piloted new community seedbanks in a few districts. Community seedbanks are included in recent agrobiodiversity and seed-related legislations. Community seedbanks focus on promoting the conservation and sustainable use of traditional varieties, increase access to quality seeds and planting materials of diverse crops and varieties and generate income for members associated with them. These activities contribute to realize farmers' rights as outlined in Article 9 of the ITPGRFA. Community seedbanks are

important actors to strengthen local seed systems and promote local food sovereignty.

Together with Bioversity International and the Nepal Agricultural Research Council, Local Initiatives for Biodiversity Research and Development (LI-BIRD) started facilitating the establishment of community seedbanks in Nepal in 2003. In the last 15 years, LI-BIRD has supported 23 community seedbanks in the country, 3 in India, 5 in Sri Lanka and 13 in Bangladesh. The number of community seedbanks continues to increase, but there has been little coordination and limited sharing of experiences and innovations. With support from Bioversity International and other organizations, LI-BIRD organized a first national workshop on community seedbanks in 2012 bringing together organizations who support community seedbanks. In 2013, farmers and farmer organizations managing community seedbanks held another workshop to exchange knowledge, seeds, successes and lessons learned.

Participants proposed to create a national network of community seedbanks and established an *ad hoc* National Coordination Committee of Community Seed Banks in Nepal. Since then the committee has met on a regular basis. The *ad hoc* committee and some community seedbank leaders met again in August 2018 and decided to formally register the national network as the Association of Community Seed Banks in Nepal (ACSBN). Bioversity International and LI-BIRD provided the necessary support. As far as it is known this is the first association of its kind in the world.

Peru

The seedbank of the Potato Park in Cusco was established in 2007 with the goal to maintain traditional communal Inca practices of the local farmers, which resemble open source seed systems. In 2004, ANDES, the local NGO that supports the Potato Park, spearheaded the repatriation of 450 varieties of native potatoes from the International Potato Center (CIP) in Peru to the local communities.

This served to rebuild the local seed systems and defend the rights of the indigenous communities. The community seedbank plays an important role to turn the Potato Park in a Noah's Arc where the largest *in situ* potato diversity in the world is conserved and where the crop can continue to evolve under environmental conditions and adapt to climate changes.

Currently, the community seedbank holds 1,347 accessions, which Potato Park farmers are free to use at any time according to certain rules and regulations established by the Association of Potato Park Communities spelled out in an Intercommunity Agreement. The Potato Seed Guardians known as "Arariwas" manage the collection of the community seedbank on a day-to-day basis. Apart from conservation and exchange of seeds, the community seedbank also develops activities to add value to potatoes, such as the production of soaps and shampoos. Women are leading these activities. The community seedbank has an information system that documents and assists in the further development of traditional knowledge. Seeds are exchanged nationally and internationally during seed fairs and other events. With the support of ANDES, the communities have developed a biocultural protocol that defines how benefits generated from the conservation and sustainable use of potatoes in the Potato Park will be fairly shared.

Zimbabwe

Community Technology Development Trust (CTDT), an NGO, has supported community seedbanks for more than two decades. CTDT considers supporting community seedbanks a critical strategy and mechanism to ensure on-farm conservation and sustainable use of plant genetic resources for food and agriculture at the community level, in particular



Photo: The seedbank of the Potato Park, Peru. Credit: ANDES/Jessica Villacorta

for neglected and under-utilized crops and plants. The facilities of a community seedbank empower farmers to own and control the means of production, the selection of ecologically adaptive crops, provide opportunities for crop diversification in the face of climate change, and facilitate seed and knowledge exchanges and support to farmer seed systems.

In Zimbabwe, the CTDT-supported community seedbanks are linked with the national and regional crop improvement programmes, the CGIAR centres operating in the country, national genebanks, scientists, extension workers and policy-makers. They enable farmers to benefit from accessing a wide range of advanced and improved materials from the agricultural

research institutions. This is important for enhancing agricultural productivity and improving food and nutrition security. The number of community seedbanks continues to grow.

The way forward: some reflections

- The diversity of community seedbanks around the world in terms of functions, activities, types and number of crops and crop varieties, governance and management modalities, reach and networking is remarkable and should be cherished.
- Women seed custodians play important roles in the everyday management of community seedbanks but more could be done to recognize, reward and support them.

- Community seedbanks should receive more technical support to improve the characterization and documentation of their collections and learn about novel drying and storage techniques and technologies. This could be done, for example, through training given by staff of national genebanks.
- Community seedbanks improve access to diverse seeds of interest to farmers, at the right time and at a low cost, but there is a need to pay more attention to seed quality. Better seed selection, drying and storage practices will improve seed quality.
- Improving access to more diverse seeds is becoming more important in the face of adaptation to climate change. Community seedbanks are interested to access new diversity, including from other countries, but rules and regulations are often cumbersome.
- Farmers' commitment is at the heart of the sustainability of community seedbanks. Sustainability can be enhanced through legal recognition and protection, value addition activities (e.g. the sale of seeds) and locally managed funding mechanisms (e.g. a community biodiversity fund).
- Government support (political, financial and technical) can strengthen the operations and viability of community seedbanks and their networks.
- There is a need to revise seed policies in many countries. These policies do not pay attention to community seedbanks and often hinder functions and activities, such as the production and marketing of farmer varieties.
- Community seedbank networking at all levels can speed up learning and give community seedbanks a stronger voice.
- Community seedbanks can be(come) centres of farmer innovation and play a role in the national innovation system.
- A global platform to connect and strengthen community seedbanks would increase the visibility of community seedbanks, facilitate exchanges, support action research and learning, and advocate for policy and legal change and support.

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Photo: Members of community seed banks from across Nepal at the 2nd National community seed banks workshop (April 2018). The National Association of Community Seed Banks of Nepal will be formerly registered in 2019.
Credit: Bioversity International/R. Vernooy

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Note

- ¹ 24 July 2018: Informal Dialogue
“Building linkages to strengthen on-farm management of farmers’ varieties/ landraces: community seedbanks,” organized by FAO and Bioversity International in collaboration with the Global Crop Diversity Trust and the Secretariat of the ITPGRFA.
- 25 July 2018: Workshop: “Towards a global community seedbanks platform,” organized by Bioversity International.



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Photo: Members of the Gumbu community seed bank, Limpopo province, South Africa. In South Africa, the Department of Agriculture, Forestry and Fisheries (DAFF) and Bioversity International are establishing a national network of community seed banks. **Credit:** Bioversity International/R. Vernooij