

2 Origins and evolution

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Community seed banks have been around for about 30 years. As this book illustrates, they can be found across the globe. Their forms and functions are diverse, and their histories differ. Some countries, such as Brazil, India, Nepal and Nicaragua, have a relatively large number of them – from about 100 to several hundred, although exact numbers are hard to determine. Other countries, such as Bhutan, Bolivia, Burkina Faso, China, Guatemala, Rwanda and Uganda, have only a few nascent ones. Colleagues in some regions of the world suggest that no community seed banks have been established yet in central Asia, eastern Europe or the Middle East, but we have not carried out an in-depth search. There are community seed banks in the Pacific, but no case studies could be obtained for this book.

It is difficult to pinpoint the origin of community gene banks or seed banks, but nongovernmental organizations (NGOs) have played a key role and continue to do so in many countries. In recent years, government agencies at the national or state level in a number of countries have become interested in establishing and supporting community seed banks, often as part of a national in-situ or on-farm conservation strategy. Examples include Bhutan, Bolivia, Brazil, South Africa and the countries of Mesoamerica (see the case studies in Part II).

In this chapter, we summarize what we have learned about the origins of community seed banks based on a review of the mostly grey literature and the case studies we have collected. We then present a schematic timeline of their evolution, based solely on the case studies.

Roots

In the Global South, NGOs have set up community gene or seed banks most of all to conserve local or ‘farmer’ varieties and rare varieties before this genetic diversity was lost because of societal pressures (commercialization of agriculture, expansion of the industrial food sector, monopolization of seed production) or recurring natural disasters (most notably droughts, floods and hurricanes).

Among the founders of community seed banks are the Rural Advancement Foundation International (RAFI), now known as ETC Group or Action

Group on Erosion, Technology and Concentration. In 1986, RAFI produced a 'community seed bank kit', as far as we know, the first how-to guide for establishing a local gene or seed bank.

In the case study on the work of USC Canada (Chapter 37), the authors describe how the idea of community seed banks emerged as a component of an ambitious programme called Seeds of Survival (see www.usc-canada.org/what-we-do/seeds-of-survival). As a response to the disastrous drought and subsequent famine in Ethiopia, this programme, launched in 1989, began to work in partnership with farmers to rebuild the local systems that had been seriously affected by the drought. Scientists from Ethiopia's Plant Genetic Resource Centre of Ethiopia (now the Institute of Biodiversity Conservation), a government agency, worked in the regions most affected by drought to multiply, on farm, as many varieties as possible of sorghum, wheat and locally adapted maize (Worede and Mekbib, 1993; Feyissa, 2000; Feyissa et al., 2013). These varieties were then re-integrated into the local seed systems by participating farmers and distributed to thousands of other farmers. Community seed banks were initiated to guarantee local stocks of these varieties. USC Canada, based in Ottawa, with partner NGOs around the world continues to run the Seeds of Survival programme (Green, 2012; see Chapter 37).

Inspired by RAFI, in 1992, the Southeast Asia Regional Initiatives for Community Empowerment (SEARICE) assisted another Philippine NGO, CONSERVE, to set up a community gene bank (Bertuso et al., 2000). In Latin America, the Chile-based Centro de Educación y Tecnología (CET) began to establish community seed banks in a number of Latin American countries. In Brazil, a diversity of community seed bank initiatives emerged throughout the country, some of them local, others connected to international NGOs (see Chapters 12, 13, 39). Other examples include Unnayan Bikalper Nitinirdharoni Gobeshona (UBINIG) in Bangladesh where the impetus was flooding and a cyclone in the late 1980s (Mazhar, 1996; see Chapter 9), the Relief Society of Tigray (in 1988) and Ethio-Organic Seed Action in Ethiopia (Feyissa et al., 2013).

In Zimbabwe, a pioneer was the Community Technology Development Trust (CTDT), which established the first community seed bank in 1992 following severe drought (Mujaju et al., 2003; see Chapter 38). In India, several NGOs took the lead, including the GREEN Foundation (starting in 1992), the Academy of Development Sciences (in 1994; see Khedkar, 1996), the Deccan Development Society (Satheesh, 1996), the MS Swaminathan Research Foundation (in 2000; see Chapter 18) and Gene Campaign (in 2000). In Nepal (Shrestha et al., 2013b), there were USC Canada Asia (in 1996; see Chapter 24) and Local Initiatives for Biodiversity, Research and Development (LI-BIRD, in 2003; see Chapter 34); in Nicaragua, the Centro Intereclesial de Estudios Teológicos y Sociales (CIEETS) and the Programa Campesino a Campesino (PCaC, Farmer to Farmer program) (SIMAS, 2012; see Chapter 26).

The Norwegian Development Fund, which is active in several countries around the world, has been another continuous supporter of community seed banks (Development Fund, 2011; see Chapter 35). Other international NGOs that have supported community seed banks include ActionAid and OXFAM. Bioversity International has pioneered and supported the establishment of community seed banks in a number of countries (e.g. Bolivia, Burkina Faso, China, Ethiopia, India, Malaysia, Nepal, Rwanda, South Africa and Uganda) as part of its research on the conservation and sustainable use of agricultural biodiversity and, more recently, on adaptation to climate change.

Partly preceding and partly in parallel with establishment of seed banks in the Global South, many 'seed-saver' groups, associations and networks have formed in Western nations. These are made up mostly of hobby farmers, breeders and gardeners, often thousands of miles apart, who share a common interest in keeping traditional and local crop diversity alive. These seed savers form a community of practice more than a geographic community.

The USA-based Seed Savers Exchange, a not-for-profit, member-supported organization, was established in 1975 by Diane Ott Whealy and Kent Whealy (see www.seedsavers.org/). Its aim is to preserve heirloom seeds by building a network of committed people who collect, save and share seeds and plants. Heirloom seeds are passed on from generation to generation. In the North American context, many of these seeds were carried by settlers from European countries. The organization is based at a 360ha heritage farm in Iowa, where seeds are reproduced, catalogued and disseminated and where educational activities take place. The farm operations give continuity to the network's efforts.

In 1986, inspired by the example of the USA, the Australian Seed Savers was set up by Michel and Jude Fanton. First established nation-wide without government support, it has since developed into a network of local networks spread out across the country (Fanton and Fanton, 1993; Seed Savers' Network and Ogata, 2003). Since 1995, the Australian network has been supporting the establishment and strengthening of such groups in almost 40 countries, including Afghanistan, Bosnia, Cambodia, Croatia, Cuba, Italy, Japan, Kenya, Palau, Portugal, Serbia, Solomon Islands, South Africa, Spain, Taiwan and Tonga (see www.seedsavers.net/).

In Canada, Seeds of Diversity operates as a charitable organization dedicated to the conservation, documentation and use of public-domain, non-hybrid plants of Canadian significance. The 1,400 members grow, propagate and distribute over 2,900 varieties of vegetables, fruit, grains, flowers and herbs. The seed network, first established in 1984, describes itself as 'a living gene bank'. Each year, Seeds of Diversity produces a Member Seed Directory which allows members to obtain samples of the seeds and plants offered by other members in exchange for return postage (see www.seeds.ca/).

In Europe, a large number of seed-saver groups and associations vary considerably in membership and scope of activities; these organizations exist in Austria, France, Germany, Greece, Holland, Ireland, Italy, Spain and the UK.

Evolution and emerging trends

Increasing scope and function

Based on the experiences described in the case studies, a number of trends can be discerned. One has been a broadening of the functions and scope of community seed banks, mainly a result of a natural learning-by-doing process. Although many community seed banks were initially set up for the purpose of conservation, over time additional functions were added: providing access to and availability of seeds, operating as a platform for community development and contributing to seed and food sovereignty. In some cases, this happened as a result of successful conservation efforts and a growing demand among local farmers or farmers from other communities for materials maintained in the seed banks. In other cases, it was a result of the difficulties faced by community seed banks in dealing primarily with conservation, most notably lack of incentives to keep up the work.

The experiences of two international NGOs that pioneered support for community seed banks are illustrative. USC Canada's support for strengthening community seed supply systems has grown from a seed recovery programme responding to drought and genetic erosion in Ethiopia into a global programme focussed on promoting food security and food sovereignty through the sustainable use of agricultural biodiversity. Community seed banks have grown into centres for experimentation and innovation around seeds that can handle the vagaries and extremes of climate change and have become facilitators to help farm communities organize around their rights and interests in production that is affordable, productive and respectful of the integrity of their landscapes and plant genetic resources (see Chapter 37). Community seed banks supported by the Development Fund have evolved from seed restoration and rehabilitation centres, supported by participatory plant breeding, into organized seed grower associations for local seed production and marketing (see Chapter 35). The sole case study from the Caribbean region, in Trinidad (Chapter 29), describes the evolution of a small seed supply unit into an advanced storage facility with land for carrying out trials and seed selection. The facilitators of the seed bank also set up farmers' groups who connect with each other through Facebook. In addition, the seed bank established links with a civil society foundation working with communities on such projects as backyard gardening for households.

Other examples of growth come from Bolivia (Chapter 11) and Honduras (Chapter 33), where the original efforts in participatory variety improvement gradually evolved into a broader programme that includes the conservation and use of agricultural biodiversity. In Bolivia, community seed banks moved from quinoa and cañihua storage banks to agricultural biodiversity community banks. Apart from conservation, new areas of interest have developed, such as seed health, soil fertility, increased yields and commercialization of agricultural biodiversity products. In Honduras, when farmers and the NGOs working with them began to realize the importance of conserving and documenting the

local materials they were collecting, they decided to conserve seed at the community and regional levels.

Connecting on a higher level

A second trend can be seen in efforts to reach levels higher than the local community. This has resulted in the formation of networks or associations of community seed banks supported by facilitated reflection on past experiences, targeted training in organizational development and technical cooperation with other institutions. In Nepal, at a first national workshop on community seed banks held in 2012, participants concluded that although Nepal has a large number of seed banks, sharing and learning among them has not taken place, except for a few exchange visits by farmers' groups and practitioners (Shrestha et al., 2013a). In a follow-up workshop in March 2013, farmers and groups involved in managing community seed banks formed an ad hoc committee to establish a national network to be a platform for learning and sharing among community seed banks, to facilitate exchange of seeds and planting materials, to prepare a national catalogue of genetic resources conserved by community seed banks, to facilitate a process of linking community seed banks with the national gene bank, to represent community seed banks in national fora when necessary and to facilitate incorporation of the conservation of plant genetic resources into community seed banks where it has not yet been done (Chapter 34). Note also that community seed banks in Nepal are supported by Bioversity International, the Development Fund of Norway, the Department of Agriculture of the government of Nepal, OXFAM and USC Canada. In Brazil, community seed banks have become part of regional movements. For example, so-called regional seed houses represent a conservation strategy that combines various elements of conservation and sustainable use put into practice by peasant farmers, organizations and social movements in the field of agro-ecology and by federal institutions of teaching and research (Chapter 13).

Increasing numbers

Another trend has been the multiplication of efforts by a supporting agency or other organization based on success and experience accumulated in one area of a country or inspired by examples from other countries. In Mali, eight community banks in an area in the north of the country have formed a network that works in partnership with community seed banks in southern Mali to carry out key activities to enhance the value of and conserve farmers' seeds: seed fairs, multiplication of seeds in the south that are unsuited to conditions in the north, seed exchanges and advice to improve the productivity of different varieties.

In Burundi, Welthungerhilfe of Germany developed a plan and training programme for the construction and management of seed stores, a particular type of community seed bank (Chapter 32). Later, the plan and approach inspired other organizations, such as the Alliance 2015 partner of Welthungerhilfe,

Concern International, the Belgian Technical Cooperation and the support programme of the European Union in Burundi (Programme Post-Conflict de Développement Rural) to also invest in this kind of seed store. The local government is now starting a support programme for all seed stores. In the USA, the pioneering work of Native Seeds/SEARCH has provided an example of a regional seed model that has inspired efforts elsewhere and brought the importance of crop diversity to public attention in the southwest USA and beyond (Chapter 31).

Biodiversity International's most recent efforts to establish and support community seed banks in China, Rwanda and Uganda have been inspired by previous experiences in other countries, such as Burkina Faso, Ethiopia and Mali. USC Canada, the Development Fund and LI-BIRD have benefitted from similar learning tracks. In Bhutan and South Africa, the lead government agencies supporting the establishment of community seed banks have learned from past experience to take a cautious approach: first set up a small number of community seed banks and monitor their development before expanding the programme.

A caveat is necessary here. Good examples cannot always be adopted and adapted. The Malaysia case study (Chapter 20) indicates that cultural issues can prevent people from reaching a shared agreement about how best to set up a community seed bank. This case also highlights the need to consider the availability of enough capable people to dedicate time to the efforts required to set up and run a community seed bank. In the context of urban migration, labour constraints have become common in many rural areas of the world.

Government support

A fourth trend is the emerging interest of national and state governments in establishing and supporting community seed banks. Examples in this book include case studies from Bhutan, Bolivia, Burundi, the Central American countries, Mexico, Nepal and South Africa. This trend might be partly the outcome of longer-term efforts of community seed banks and their supporting organizations to raise awareness of the roles and achievements of community seed banks, including their role as a mechanism to implement farmers' rights. Another likely factor is the increased preoccupation of governments with strengthening national capacity to respond to climate change. In Central America, community seed banks have also gained recognition as effective organizations to respond to natural disasters and related problems (hurricanes in particular often leading to landslides and flooding and the resulting loss of seeds).

Over the last years, three Brazilian states (Paraíba, Alagoas and Minas Gerais) have approved laws aimed at providing a legal framework for existing community seed banks created and maintained by small-scale farmers' associations with the support of NGOs and sometimes local governments. A provision has been made to include seeds produced by community seed banks

in regular extension programmes. Four other states (Bahia, Pernambuco, Santa Catarina and São Paulo) have similar legal bills being discussed in their legislative assemblies (Chapter 39).

In Nepal, Seed Vision 2025 is a major policy document with a clear statement about community seed banks, gene banks, community-based seed production and capacity building among seed producers and other producer groups to promote production and access to high-quality seeds (earlier, the government published a community seed bank implementation guideline, but it was not widely circulated). The government document also envisions identifying, mapping and developing seed production pockets within the country and emphasizes investment by the private sector. The government of Nepal has started to provide technical and financial support to a small number of community seed banks in the country (Chapter 41). In 2013, the government of South Africa started a similar effort with support from Bioversity International (Chapter 43).

Evaluation

A fifth trend, also recent, is the carrying out of evaluative research and impact assessments to better understand and document the factors that contribute to long-term sustainability of community seed banks. Several organizations supporting community seed banks are taking the lead in this kind of research and assessment: ActionAid, Bioversity International, Development Fund, LI-BIRD, OXFAM-Nepal and USC Canada. A number of review studies have been produced in recent years (Development Fund, 2011; SIMAS, 2012; Sthapit, 2013; Vernooy, 2013), and this book is another example of critical reflection on the functions of community seed banks and their prospects for the future. This work is combined with the design and implementation of specific strategies to develop organizational and financial sustainability of community seed banks.

One such strategy deployed by several community seed banks across the world is the acquisition of formal organizational status, in particular as a cooperative. This is already taking place, for example, in Burundi (Chapter 32), Mali (Chapter 22) and Nepal (Chapter 24) and is envisioned in Mexico where producer cooperatives would sell not only seeds but also traditional products made with native plant varieties conserved by the network of community seed banks (Chapter 42). In the Kolli Hills of India, community seed banks have evolved into village millet resource centres that not only deal with conservation but also with technology and value-chain development (Chapter 18). In Oaxaca, a federal state of Mexico, community seed banks are being transformed into private limited rural production companies. This legal status allows farmers access to resources from the municipal, state or federal government (Chapter 23).

If and how the trends outlined above will evolve in the future is discussed in the final chapter.

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