

## 35 Norway's Development Fund

### Supporting community seed banking practices

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Climate change is predicted to have major impacts on subsistence small-scale farmers in the developing world, but these impacts are likely to be complex and locally specific. For subsistence farmers and their communities, the risks are diverse – drought, flood and crop and animal diseases are some of the anticipated changes affecting agriculture (Morton, 2007). To ensure long-term food security in the context of these increasing risks, it is crucial to strengthen the adaptive capacity of vulnerable food producers in developing countries.

As part of the response to these challenges, the Development Fund has established a programme on agro-biodiversity and climate change adaptation. It emphasizes sustainable natural resource management and agriculture practices adapted to local conditions. Also part of the programme are strengthening community knowledge of vulnerability risk assessment, planning, local governance and implementation of measures to reduce vulnerability.

Today's food production is increasingly dependent on a narrow genetic base, which reduces farmers' choice of crops and makes them more vulnerable. One of the key strategies in the Development Fund's programme is to work with farmers and their organizations to conserve, use and develop agricultural biodiversity on farm. Food security and the capacity of farming systems to adapt to a changing climate depend not only on sustainable crop diversity, but also on the ability of farmers to make use of traditional knowledge and innovation. In this regard, the Development Fund is supporting initiatives, such as community seed banks and participatory plant breeding, as ways to increase on-farm genetic diversity and local seed security.

#### **Purpose and evolution**

The community seed bank emerged as a collective approach to strengthening local capacity to conserve, use and develop crop genetic resources. It provides two important benefits to farm communities: it ensures both the availability of good seeds and genetic variability of crops so that they can adapt to changing growing conditions. These two functions are best achieved through a collective approach as individual households have limited capacity to store high-quality seeds or maintain a large variety. In practice, a group of farmers produce and

store seeds in larger quantities to ensure their availability at the right time. They also keep diverse types of seeds in smaller quantities to ensure conservation of genetic material for use in plant breeding to develop particular varieties for special needs now and in the future. The overall result has been increased local seed security. The approach has been spearheaded by many local civil society organizations in partnership with the Development Fund and working with organized farmer groups. The size and scale varies from location to location, but the model is similar. One necessary feature is collaboration with other stakeholders working on conservation and development of genetic resources, such as breeding institutions, universities and national gene banks.

Through its regional programmes, the Development Fund has supported 62 community seed banks that have benefitted about 21,000 smallholder households in Asia, Africa and Central America. These seed banks also provide services to non-member farming households and communities (see Table 35.1). Not all 62 are operating well, and some are relatively new (those in Bhutan and Malawi), but, overall, they offer important conservation and seed security services.

The community seed banks serve three major functions:

- *Provide access to germplasm:* Most gene banks are located far from farming communities, making it difficult for farmers to gain access to their collections. In addition, centralized gene banks have long-term conservation objectives and usually do not keep the large quantities of seeds required to fulfil farmers' short-term needs, for example, in the case of a natural catastrophe.
- *Make diverse, high-quality seeds available:* Variation in the quality of seeds in the informal seed system and the inability of the formal seed system to provide diverse seeds to poor farmers continue to be a challenge in poor countries. Community seed banks focus on germplasm collection, conservation, participatory plant breeding, participatory variety selection and community-based seed production and distribution.
- *Make up for the inadequate coverage of the formal seed supply system:* The formal seed sector (government and private industry) does not meet the demands of smallholder farmers; for these farmers, the system still dominates. For example, in Ethiopia (IFPRI, 2010) and Nepal (Joshi et al., 2012), the formal seed sector contributes less than 10 per cent of the national seed supply. Community seed banks strengthen the informal seed supply.

## Operations

During the last decade, seed bank practices have evolved in terms of crops covered, activities and management. In the beginning, restoration of crops from gene bank collections and farming communities was the main activity. This was done through seed multiplication on land that was either rented by the seed bank or offered by members. After multiplication, seeds were distributed by loan and through sales at a local price.

Table 35.1 Community seed banks currently supported by Norway's Development Fund

Country and region	Partner organization(s)	Year established	No. CSBs	No. FGBs	Organizational platform	Access		Main crops targeted
						Communities	Households	
<b>Ethiopia</b> Oromia region, East Showa (Ejere and Chefe Donsa)	Ethio-Organic Seed Action (EOSA)	1997	2		Run by legally registered farmer conservator associations.	15	1,142 Indirect benefits to over 2,000 households	Teff, emmer wheat, durum wheat, chickpea, lentil, grass pea, field pea, faba bean, barley, flax, fenugreek, some spices
Amhara region, North Showa (Ankober and Siya Debir)		1997	2		Set up through a Global Environment Fund project; since 2001, supported by IBC to some extent. Not fully operational. EOSA is reorganizing them with DF support.	8	239 maintained as members	Barley, durum wheat, naked barley, emmer wheat, oat, field pea, flax, faba bean, lentil, sorghum, grass pea, chickpea, some spices
Southern region, SNNP (Gunjuru, Andegna Akulu, Wita, Cigado, Shey Amba Qieni, Gozo Boma Shash, Beayde and Mimo)		2010	8		New and set up with the regional government budget and technical support from EOSA. EOSA is reorganizing them with DF support.	8	472 household members	Barley, durum wheat, emmer wheat, field pea, flax, faba bean, lentil, maize, sorghum, grass pea, enset, chickpea, root crops, spices

<b>Malawi</b> Northern Malawi (Rumphii)	Biodiversity Conservation Initiative and Find Your Feet	2008	14	Community managed with the support of local DF partner. The area development committees and village development committees play an important role in management, mobilization and supervision.	14 village development committees	13,440	Bambara nut, ground nut, maize, beans, sorghum, pearl and finger millets, sesame, pigeon pea, okra, amaranths, cow pea
<b>Guatemala</b> Chiantla, San Juan Ixcoy, Aguacatán and Todos Santos Cuchumatán	Asociación de organizaciones de los Cuchumatanes (Asocuch)	2008– 2010	7 4	A farmer seed committee runs each bank. The seed committees are linked to farmer cooperatives, which are associated with a larger network of cooperatives: Asocuch. Asocuch provides support through local promoters.	15	680	Maize, beans, wheat, legumes, potatoes
<b>Honduras</b> Taula B, Concepción Sur, Jesús de Otoro, La Iguala-Lempira and Monte Verde in San Francisco de Opalaca	Fundación para la Investigación Participativa con Agricultores de Honduras (FIPAH)	2004– 2009	6	Run by farmer research teams associated with regional farmers' associations, with FIPAH providing technical support.	6	370	Maize, beans, legumes, tapioca, chayote, taro

(Continued)

Table 35.1 (Continued)

Country and region	Partner organization(s)	Year established	No. CSBs	No. FGBs	Organizational platform	Access		Main crops targeted
						Communities	Households	
<b>Nicaragua</b> Pueblo Nuevo-Estelí, Unile, Somoto and Cayantu Totogalpa	Federación de Cooperativas para el Desarrollo	2010	3		Run by a seed committee, which is linked to a farmers' cooperative.	7	100	Maize, beans, sorghum, millet, Jamaica, nitrogen fixing beans
<b>Bhutan</b>	National Biodiversity Centre, natural resources and renewable research centres, district offices of the Department of Agriculture	2009	4		CSBs are managed by Farmer Field School graduates in each of the four districts with support from local extension agents (technical backstop-ping) and the National Biodiversity Centre.	10	More than 300	Rice, maize, buckwheat, millet, legumes
<b>Nepal</b>	LI-BIRD	2009	6	54	Managed by village development committee level farmers' organization called Biodiversity Conservation and Development Committee.	6	More than 2,000 annually	Rice, wheat, maize, vegetables (cucurbits, beans, cow pea, etc.), root crops, spices

## Philippines

Local government units, agricultural colleges and universities, farmers' organizations	1996	3	Managed by farmers' groups (FFS graduates) together with agricultural colleges and SEARICE.	17	500	Mainly rice and maize
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## Thailand

Joko Learning Centre (JLC), Agriculture Land Reform Office, Alternative Agriculture Network, local government units (tambon)	1996	7	Managed by farmers' groups and supported by JLC, schools in some areas and tambon administration in other areas.	60	1,800	Rice, maize, legumes (mungbean, yardlong bean, pigeon pea, etc.), vegetables (eggplant, luffa, pumpkin, chilies, tomatoes, etc.)
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Note: CSB = community seed bank; DF = Development Fund; FFS = farmer field school; FGB = field gene bank; IBC = Institute of Biodiversity Conservation; LI-BIRD = Local Initiatives for Biodiversity, Research and Development; SNNP = Southern Nations, Nationalities and People's region.

Other activities included variety rehabilitation (purification and restoration of varieties whose qualities had deteriorated), participatory plant breeding and participatory variety selection (Plate 25). These activities are undertaken by farmer groups with technical support from relevant institutions. Linking conservation with economic incentives has become important during the past few years, and some members of community seed banks are becoming organized in seed grower associations for local seed production and marketing (e.g. in Ethiopia and Guatemala).

In terms of crop coverage, most of the pioneer work has been done on cereals, pulses and oil crops; however, work has also expanded to accommodate other crops, such as potatoes in Ethiopia and chilies in Thailand. More and more farmers are forming cooperatives as a way to engage in the seed market. Another activity that has received increasing attention is the documentation of traditional knowledge of local plant genetic diversity to protect it from disappearing or being misappropriated; for example, in Nepal, seed banks keep 'community biodiversity registers'.

## Services

The Development Fund's partners promote various community seed bank activities in different countries. Some are highly specialized in the collection, regeneration, distribution and maintenance of local crop diversity and documentation of the associated information and traditional knowledge, while others are engaged in variety improvement, seed production and marketing of improved farmers' varieties and modern varieties released from public research institutions.

The main services seed banks provide include:

- *Stable local seed supply:* Being close to the growers, community seed banks ensure the availability of enough good planting materials for poor farmers at the right time.
- *Conservation:* Small samples of crop varieties are collected and conserved in community seed banks to ensure that planting material is available, especially varieties that are endangered. Such samples are multiplied for conservation and for use in participatory variety improvement.
- *Emergency relief:* Seeds are stored in large quantities by organized groups of farmers to ensure that planting material is available to members through a loan system and to non-members through sales at the local price. During emergency situations, e.g. crop failure due to drought, hail or flood, the community seed bank serves as a source of planting materials for the community.
- *Variety development:* Community seed banks serve as a meeting place for the exchange of knowledge and skills in the management of plant genetic resources in general and in varietal improvement in particular. They provide a venue in which organized farmers' groups can conduct participatory plant

breeding and participatory variety selection using their own collections and advanced lines from public research institutions to develop varieties more adapted to their needs.

- *Local seed business:* Community seed banks allow farmers jointly to produce high-quality seeds that can be marketed. This can generate income and ensure the sustainability of community seed bank activities.

Women are closely involved in Development Fund-supported activities at the grassroots level: as selectors, preservers and traders of seed. In many farmers' groups, women are well represented and even outnumber men. However, there are still challenges in terms of women assuming leadership and decision-making roles given that they are often less vocal because of cultural norms that limit their mobility, education and self-confidence.

### **Policy and legal environment**

In most countries where the Development Fund is active, the policy and legal environment is not very supportive of local seed systems. Some countries, such as India and Ethiopia, have farmers' rights acts or provisions, but implementation may not be evident. In many cases, smallholder farmers are not allowed to produce or market seeds; in others, the laws are too restrictive, e.g. seed certification laws based on criteria of the formal seed system for distinctiveness, uniformity and stability. Seed policies that are not supportive of local seed systems affect the availability of funding and technical support from governments. On the positive side, the Development Fund is working towards the legal registration of community seed banks. This step is important in terms of managing funds, seed marketing in some countries and gaining recognition and support from local government and other stakeholders.

The Development Fund has some experience with networking. South-south exchanges within and between countries allow the sharing of experience and knowledge, not only at the partner nongovernmental organization (NGO) level, but also among farmers' groups within a country. Although links between stakeholders involved in Development Fund projects at the national level are generally good, networking among the farmers' organizations that support community seed banks has been weak. Furthermore, it has been difficult to gain the support of the institutions that are developing and revising policies and regulations in the seed sector.

At the international level, the governing body of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) is a relevant platform for the Development Fund and its partners. The Development Fund wrote a report about community seed banking practices that was distributed at the 4th session of the governing body meeting in Bali (Development Fund, 2011). The report reached delegates from over 120 countries as well as observers from many international and civil society organizations. Some of the points made were the need for governments to:

- Establish and/or support community seed banks as part of their obligation to implement farmers' rights and other provisions of the ITPGRFA, such as sustainable use and conservation of crop genetic diversity. Parties should support the up-scaling of community seed banks to reach as many farmers as possible, especially in marginalized areas.
- Integrate community seed banks with broader programmes on agricultural biodiversity, where the local seed banks should serve as a storing place for results of participatory plant breeding and participatory variety selection, and make such results accessible to farmers. Seed banks should also be venues for seed fairs for farmers to exchange and display their seed diversity.
- Include community seed banks in governments' agricultural development strategies as a vehicle for adaptation to climate variability. Agricultural extension services would provide the best institutional infrastructure to embark on a scaling up of local seed bank experiences to a national level.
- Revise seed regulations and provisions on intellectual property rights to seeds to ensure farmers' rights to save, use, exchange and sell farm-saved seeds.
- Redirect public subsidies from promoting modern varieties to fund the abovementioned activities.

## **Sustainability**

Some of the key elements needed to ensure sustainability are strengthening the technical and organizational skills of farmers' groups and collaborating with stakeholders in the various countries. The latter are institutions supporting farmers on issues related to organization (e.g. the offices of cooperatives), seed-related policies and regulations (e.g. seed control and certification) and technical skills (e.g. research institutes, gene banks, seed quality and marketing control units).

Policy work related to plant genetic resources is also important. The Development Fund works with networks at various levels – local, national and international – to promote smallholder farmer friendly policies and the realization of farmers' rights. In this regard, the Development Fund's policy and advocacy work draws on the practical results of the community seed banks it supports.

Technical training of stakeholders is important to increase knowledge and skills in such activities as germplasm collection and short-term conservation, participatory variety selection, high-quality seed production and distribution, as well as financial management and local governance.

Apart from the financial support channeled through the Development Fund, a local fund is established and managed by the farmers' group managing each seed bank. Income sources are the sale of seeds to non-members in the community when there is a surplus, contributions from local governments and registration fees. Long-term economic sustainability could be ensured by

establishing local seed businesses. Nonetheless, care should be taken to promote diversity instead of narrowing the genetic base by focussing on a few varieties and crops. Table 35.2 shows examples of how seed banks in Ethiopia are working towards sustainability.

*Table 35.2 Strategies for ensuring the sustainability of farmer-led community seed banks in Ethiopia*

<i>Strategy</i>	<i>Examples</i>
<i>Financial sustainability</i>	
Develop local seed businesses and other micro-enterprises to generate income	Initiatives include beekeeping, fruit production, membership fees and rental of meeting rooms/office space. A new community seed bank built in Ejere with Development Fund support is set to provide services as a centre for both national and international training sessions and conferences.
Enhance financial management skills	The community seed banks have bank accounts and undergo annual government audits of their finances; they are working to strengthen financial systems further in light of an increasing diversity of initiatives (youth/women's groups, soil and water conservation, etc.).
Diversify sources of financial support	Engage in seed production and marketing as well as feed supply.
Use local materials and construction techniques	The community seed banks are constructed using local materials to ensure lower costs.
<i>Organizational sustainability</i>	
Register farmers' groups as cooperatives or other legally recognized entities	At the community seed bank in East Showa, some farmers' groups are legally registered as seed producers. The Ejere group is one of four farmers' organizations that have won government awards at the national level: the prize was a tractor with full accessories, which will be used to provide services at the local level enabling the association to generate income.
Enhance women's leadership and participation	All programmes encourage women's leadership and ensure that their skills and knowledge within the community are valued. Strong women's leadership also helps motivate other women to become involved.
Engage young farmers and youth in activities	In all programmes, specific strategies have been developed to engage school children, youth and young farmers, including support for youth-specific farmer research teams and young farmers' productive activities (seed production and beekeeping) as well as collaboration with local schools.
Collaborate and partner with local government, agricultural extension services and other institutions	Community seed banks in East Showa have established links with local and national government agencies (extension and environment development) and research organizations in terms of participatory variety selection, genetic diversity study, on-farm conservation, germplasm introduction and seed production.

## **Challenges and prospects**

From our work over the years, we have learned that community seed banks have brought important crops and varieties from national gene banks back to farmers' fields, distributed seed to farmers after natural catastrophes, made high-quality seeds available to farmers, secured the seed demands of poor farmers who cannot afford to buy seeds from traders, conserved crop diversity and increased farmers' income through seed sales and community biodiversity management funds.

However, there remain many challenges. Among them are: lack of policy and technical support; lack of markets for farmers' varieties; inadequate capacity and knowledge about marketing seeds among farmers; inadequate storage facilities; lack of human resources for group work during peak seasons; inferior seed quality; late distribution of seeds and late payment of seeds loaned; as well as high dependence on NGOs or a few dedicated farmers.

The main challenge, however, is at a higher level than the community. Government agricultural policies that prioritize a few high-yielding varieties still work against community seed banking objectives. Funding, research and government extension services are focused on improved varieties and ignore local seeds, and the training and orientation of development/extension agents gives them little appreciation of the need to support local seed diversity.

There is also an impression among farmers that their traditional varieties are inferior because of the push to use modern varieties, and this may contribute to erosion of genetic resources and loss of related traditional knowledge.

Despite these challenges and based on ongoing debates and recognition of the role of plant genetic diversity for local food security and climate change adaptation, we are optimistic that governments may increase their support to community seed banks. We have already observed this in Ethiopia, Nepal and several countries in Central America. We also hope that the international community will continue to support the objectives of the ITPGRFA and that community seed banks become a key approach to the management of plant genetic resources. A step in the right direction could be made if the Global Crop Biodiversity Trust – which collects, conserves, characterizes and evaluates wild and weedy relatives of crops – would consider collaborating with the civil society organizations that support community seed banks.

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