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A new beginning for community seed banks

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Complementing ex-situ with in-situ conservation

South Africa's smallholder seed systems are increasingly coming under pressure. Factors, such as drought, crop failure, difficult storage conditions and poverty, are having a negative impact on both the amount of seed and the number of plant varieties available to farmers. In addition, as a result of agricultural modernization, farmers are increasingly purchasing more seed and losing locally adapted varieties along with the associated traditional knowledge and skills in selection and seed storage.

To turn this tide, the Department of Agriculture, Forestry and Fisheries of the Government of the Republic of South Africa is considering community seed banks as a means to strengthen informal seed systems, support conservation of traditional farmer varieties and maintain seed security at district and community levels. The *Departmental Strategy on Conservation and Sustainable Use of Genetic Resources for Food and Agriculture* proposes, among other focus areas, both ex-situ and in-situ conservation of plant genetic resources for food and agriculture.

South Africa has a well developed ex-situ conservation facility, the National Plant Genetic Resources Centre (NPGRC), where accessions of plant material are maintained. The centre's mandate has recently been extended to include community seed banks as a strategy to promote on-farm management and conservation. To fulfill this mandate, NPGRC considers capacity development of its frontline staff an important step. Capacity building should empower farmers by strengthening informal seed systems, supporting the conservation of traditional farmer varieties and maintaining seed security. NPGRC has joined forces with Bioversity International to develop a national plan for the establishment and support of community seed banks. Previous efforts to establish community seed banks in two of the country's smallholder areas supported by NPGRC were not successful.

A first step was an assessment in two smallholder farming regions: Mutale in the northeastern province of Limpopo and Sterkspruit in the Eastern Cape province in the southeast (Vernooy et al., 2013). The aim of this study was to answer the following questions:

- To what extent are farmers still engaged in growing landraces?
- What are the main factors influencing the choice of crops and crop varieties?
- Is loss of diversity occurring?
- Are farmers experiencing the impact of climate change? If so, how are they responding?
- Are farmers saving seed on farm or at the community level?
- Are farmers exchanging seeds? With whom, when and how?
- Are farmers' seed-saving and exchanging practices changing, and how?
- What do farmers think about a community seed bank?

To answer these questions, the assessment team organized seed fairs (Plate 32); carried out historical analyses of crop use, four-cell analysis of crops and crop varieties and seed network mapping; and conducted a farmer survey (for details, see Sthapit et al., 2012).

Reviving local seed systems

Farmers in both regions live and work in landscapes characterized by tough conditions, including low rainfall and poor access to major markets at both sites and cold and windy weather in the mountainous areas of Eastern Cape. However, the farmers still manage to make a living. They grow food mostly for subsistence, but also succeed in producing small surpluses for marketing. Crop and varietal diversity combined with diverse animal husbandry practices (cattle, sheep and goats) is central to their farming systems and to survival. In both regions, farmers rely on combinations of a few major crops grown in large areas by most households (white and yellow maize, white sorghum and millet; and groundnut in Limpopo) and on a larger number of crops grown in small areas (pumpkin, squash, beans, cowpeas, potatoes, melon, calabash and tobacco; and many fruits and vegetables in Limpopo). Intraspecies diversity of maize, sorghum and melon is relatively high, but it is low for other crops. Farmers said they have tried a number of modern varieties of maize and cowpea, but often these modern varieties do not perform well under difficult conditions.

Traditional crops and varieties are the lifeline of farmers' livelihoods. The major reasons both women and men farmers give for maintaining diversity are good taste and nutrition (the word farmers used translates as 'powerful'), easy to use in preparation of traditional dishes, drought resistant, resistant to pests and diseases, short growing cycle, low input, long-term storage, heritage and intercropping. However, in the last few decades, several crops and crop varieties have disappeared or their seeds have become difficult to obtain. Farmers' choice of crop species is limited, and research in this area is minimal. Reasons given by farmers for the situation include increased drought, replacement of traditional varieties by modern ones (maize) and disinterest of the younger generation in farming.

The organization of seed networks varies from village to village, but traditional seed exchanges continue to predominate in both regions. However, the purchase of seeds – from other farmers, street vendors or cooperatives – on a small scale is not uncommon. In a few villages, seed networks are dynamic and strong, with many people involved in donating and receiving seeds. In most villages, however, they are weaker with fewer exchanges or exchanges between only a few farmers. Seed exchange seems to be mostly among families, friends and church members. Most take place within the same village. In Limpopo, where many men work in areas other than agriculture, women are the main participants in the seed network, whereas in Eastern Cape, men predominate. When asked about their interest in setting up a community seed bank to strengthen both conservation and exchange at village and provincial levels, the farmers at both sites responded positively (see Box 43.1).

Box 43.1 Women farmers' views

Interviews with four women farmers in Gumbu village, Limpopo, revealed that most farmers in the village grow more vegetables than grain crops. The women contend that they maintain a range of species and varieties, because they inherited them from their parents. They report that crops are consumed by the household; variety gives them satisfaction and allows them to earn some extra cash by selling part of the produce; seeds and leaves are used for decoration and cultural celebrations; and rare species are adapted to local weather and soil conditions. Crop diversity at the farm level is not high, although some farmers maintain rare varieties. According to the women, exchange takes place mainly within the family and with fellow church members. Trust is a key factor in seed exchange. However, the women say that they welcome seed exchange with farmers of different communities and cultures and they are interested in developing a conservation strategy based on a community seed bank.

A decision-support framework for moving ahead

In light of the study results, the research team developed a framework to assess the viability of community seed banks in both areas. This framework has 14 variables (Figure 43.1).

Applying this framework to the study results led to the recommendation to establish a pilot farmer-led community seed bank at each site. The research team particularly stressed the importance of farmer responsiveness, the presence of a supportive extension agency and the possibility of connecting with the Department of Agriculture, Forestry and Fisheries, the national gene bank and research agencies.

Farmers' interests
Farmers' leadership
Responsiveness to decline in crop diversity
Potential to build on existing seed exchange practices
Accessibility of seeds
Number of beneficiaries
Possibility of linking community seed bank activities with crop improvement efforts
Potential to respond to the impact of climate change on local farming systems
Potential to evolve into a broader community development institution
Availability of sound technical support
Availability of a local resource person to mobilize people and facilitate initial steps
Feasibility of building a functional facility with low-cost maintenance
Enabling policy and legal environment (incentives, rewards, recognition)
Possibility of connecting with national gene bank and research agencies (exchange of seeds, cooperation)

Figure 43.1 Variables involved in the decision to establish community seed banks
Source: Adapted from Vernooy et al. 2013.

It was proposed that, for each seed bank, an initial three-year management and monitoring plan be prepared and supporting activities planned to ensure that the banks are not isolated but develop as platforms of social learning and community development. Through such a platform, the government of South Africa could provide incentives, such as awarding farmers for the greatest efforts to maintain traditional crop and variety diversity; supporting diversity fairs to bring together seed holders and seed seekers from the various sources, such as municipality, villages, other provinces and the national gene bank; and delivering improved seed management and production kits.

References

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