



The General Manager, Geoffrey Mugarura (centre in a white T-shirt) and the Quality Assurance Manager, Joy Mugisha (on the right in a white T-shirt) receive a certificate from the Commissioner of Crop Protection after exhibiting common bean diversity from Kiziba community seedbank in the National Seed Fair.

Community seedbanking to improve the resilience of farmers: the case of Kiziba seedbank in Uganda

Rose Nankya¹, John W. Mulumba², Isabel Lopez³ and Devra I. Jarvis³

¹Bioversity International, Uganda Office

²Plant Genetic Resources Centre, Uganda

³Bioversity International, Italy

Background and context

Kiziba seedbank was established in June 2010 in Kabwohe site, Sheema district under a project improving productivity and resilience for farmers through enhanced use of crop varietal diversity, focusing on Common bean (*Phaseolus vulgaris*) and Banana (*Musa spp.*).

Small-scale farmers in Uganda as well as in other developing countries continue to depend on genetic diversity to maintain sustainable production and meet their livelihood needs. Loss of genetic choices, reflected as loss of local crop cultivars, diminishes farmers' capacities to cope with changes in pest and disease infection, and leads to yield instability and loss. Local cultivars are a primary source of new resistant germplasm.

This project built on the intraspecific diversity that was available on farm to reduce the pressure of pests and diseases, and on farmers' knowledge to develop new low-cost and sustainable methods and management practices to increase common bean diversity. Common bean has been primarily managed by women, therefore this project benefited women in terms of availing them with the much needed diversity and equipping them with the capacity to grow better seeds enabling them to have better yields, food and seed security.

At the start of the project in 2008, there were 27 common bean varieties in this site and some varieties were becoming rare. Farmers used to get their seeds from markets, friends and relatives without proper quality control.

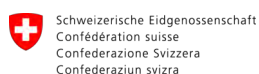
Farmers faced constraints such as: seeds being expensive to buy and transport, varieties not available in enough quantities at the right time, poor quality seed infested with pests and diseases and lack of variety.

Strategies employed and key activities

The various constraints that farmers faced in this community showed a clear gap in seed diversity and good seed quality. In order to fill this gap, the Kiziba seedbank was established and managed by farmers.

Before establishing the seedbank, the project determined various factors that would lead to a successful and useful seedbank for farmers and the community. These factors included determining the existing intraspecific diversity and how it was being accessed, and how the available diversity was being used to manage stresses like pest and disease and climate change.

Throughout the project, farmers participated in activities and training opportunities in order to manage the seedbank and enhance their capacity to use diverse seeds to manage



Swiss Agency for Development and Cooperation SDC



The Kiziba seedbank

future stresses. Deliberate efforts were made to have both men and women in the implementation structures of the project which included: the technical committee, the national implementation unit and the site coordination committees. Both men and women participated in implementation of the project activities, like hosting the on-farm trials, participation in community project meetings and in capacity building events like workshops, hosting the demonstration trials, cross-site visits and diversity fairs.

Results

Biodiversity impacts

The seedbank has secured common bean diversity through: variety collection, seed production, storage and distribution. In 2010, the seedbank was opened with 100 kg of 49 varieties, including the 27 varieties that were in the site before the project began. As of now, it has 69 varieties including landraces and improved varieties (see Figure 1). It has

improved the seed system through seed multiplication and an efficient seed distribution network and empowered farmers to embrace good quality seed production practices. The capacity of farmers and policymakers in taking on diversity-rich options of production through awareness and sensitization activities has been enhanced. Seed quality has been managed through: monitoring at farm level, seed treatment while at the seedbank with organic materials and accepting only seeds that meet the quality standards at the seedbank.

Socio-economic impacts

The farmers that access seed from Kiziba seedbank are trained in proper agronomic practices for growing common bean, including farm management, pest and disease control and post-harvest handling so that they are able to produce seeds that meet the quality standards of the seedbank. As a result of accessing good quality seeds from the bank, agronomic practices have greatly

improved common bean yields by 50% for most of the beneficiary households, which has led to food security and improved household incomes from the sale of the surplus production.

Deliberate efforts were made to ensure that there is participation of both men and women in the seedbank activities. The management committee comprises 12 farmers of whom half are women. Sixty percent of the seedbank beneficiaries are women because common bean has primarily been a women's crop. Cooperation and social harmony has increased in the households as a result of working together and this has improved the general social cohesion within the community.

Men are also actively growing common bean not for home consumption as women do but for sale to generate income. A woman only sells the surplus after making sure that the home has enough beans

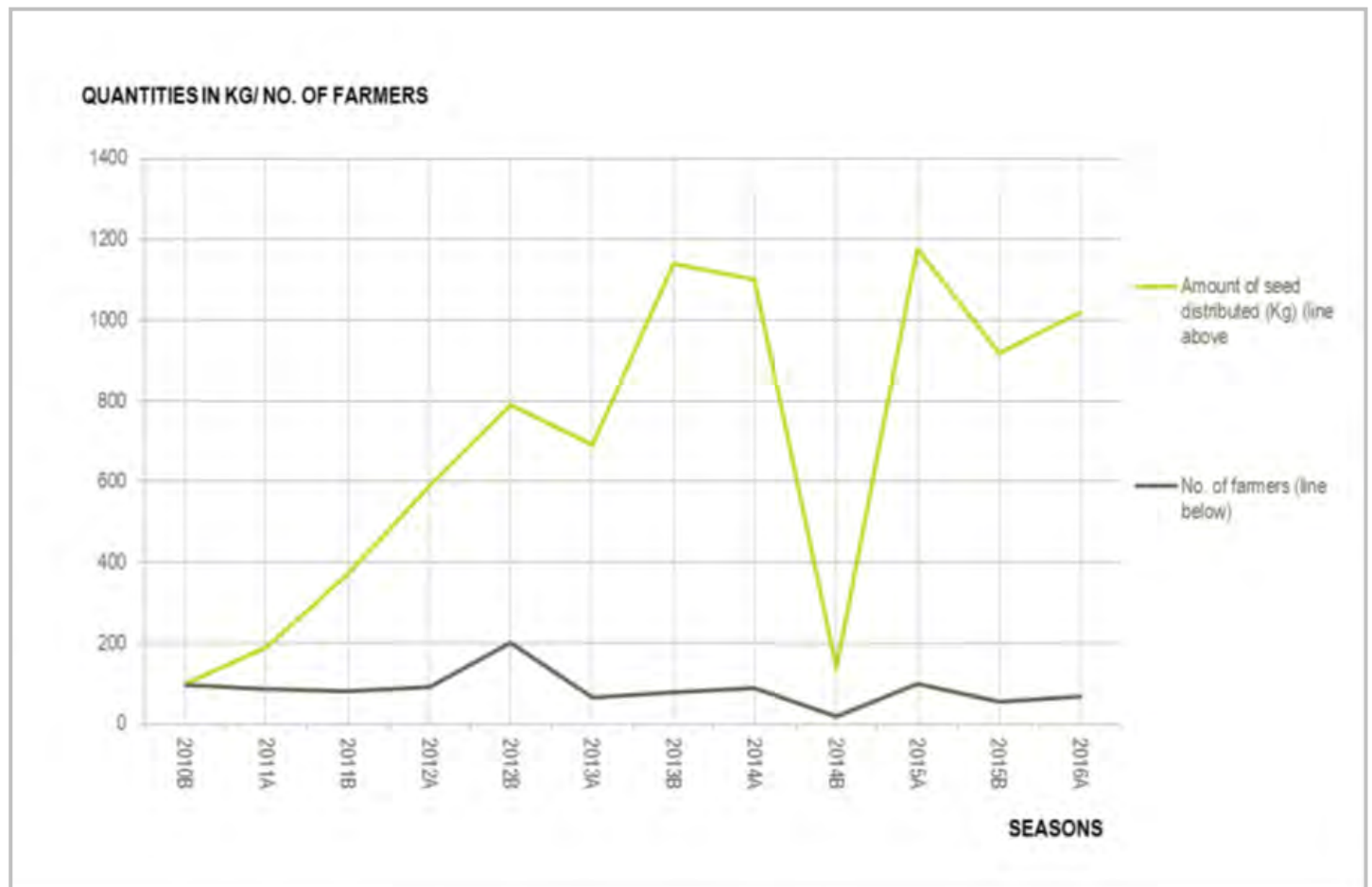


Figure 1. The graph represents the amount of seed distributed to farmers since its opening in June 2010. The seedbank is a great resource for farmers since it conserves different varieties and acts as a fallback in case of bad crop seasons, as shown for the year 2015. During a good season (year 2014) the seedbank can save and expand on its varieties for further sustainability in future seasons.



Geoffrey Mugarura and Joy Mugisha; display the certificate they got after exhibiting common bean diversity from Kiziba/ Kabwohe community seedbank in the National Food Fair

to eat. There are also households where this is done by the couple and decisions of how much to reserve for food and the surplus to sell are agreed upon together. This has empowered women to become more financially able and to take on leadership roles confidently. The management committee of the seedbank participate on a voluntary basis but in the future when their seed business has stabilized, they will start employing staff to run the bank activities.

Policy impacts

Kiziba seedbank promotes various farmers' rights such as the protection of traditional knowledge, equitable sharing of benefits and participation in decision making of men and women farmers. The experience and lessons learned from Kiziba seedbank have guided the inclusion of community seedbanking in the Draft Seed Policy of Uganda 2016 and in the Draft Policy on Plant Genetic Resources for Food and Agriculture 2016, as a means to provide local seed varieties, conservation of local varieties, indigenous knowledge and practices through community genetic resource management.

Sustainability and replication

The potential to sustain positive impacts in the long term is high with the opening of a business arm where the seedbank is generating funds to run the seedbanking activities. Moreover, the capacity built in the management committee and many of

the beneficiary farmers enables them to train other farmers as they get on board, which makes it a self-sustaining process.

The seedbank is providing seed security for farmers, conserving the diversity of common bean *in situ* thereby enabling its continued evolution and adaptation, as well as providing diversity choices. These aspects are very important to enable farmers to adapt to climate change. It has a plan to double the amount of seed being accessed on a loan basis and increase the amount of seeds being sold by the business arm. The management committee shares information with different stakeholders who are now visiting the community

seedbank to learn from its experiences. With their visits, stakeholders are able to replicate the successful seedbanking activities in their respective areas.

Information is also shared through seed fairs, diversity fairs, food fairs and agricultural shows, where the management committee is invited to showcase the diversity and knowledge they have in seed production and diversity management. The seedbank has a diversity register where information about the different varieties they have is kept and shared with visitors to the bank. At the same time, the management committee has started opening distribution centres in other areas of Sheema district and training farmer groups so that they can run similar facilities in those areas.

Monitoring and evaluation

The management committee has a secretary who keeps records of seed loaned out and brought back, the beneficiaries and their respective gender, where they are located and a diversity register. The committee also carries out participatory monitoring of farms to ensure that the beneficiaries are conforming to the quality control standards right from the garden. One of the women on the committee is responsible for record keeping while another woman is in charge of seed quality control. The functions are very crucial for the running of the seedbank. The women on the



Joy Mugisha giving seed to one of the farmers who came to the National Seed Fair

committee are trainers as well which motivates other women to come and benefit from the seedbank as they admire fellow women who are involved in its management.

Project news

In 2017 Joy Mugisha, the Seed Quality Assurance Manager of the Kiziba seedbank, was declared the 'Best Farmer in South Western Uganda' at the 2016 Best Farmers Nationwide competition, which draws contestants from all over the world. She was also named 'Common Bean Encyclopedia' for

demonstrating her extensive knowledge on common bean diversity and capacity management.

Joy was among the 13 farmers who were declared 'Best Farmers of 2016' out of 710 farmers that participated in the competition. She has won an all-expenses paid study trip to the Netherlands, courtesy of KLM Airlines, DFCU bank, the Netherlands Embassy and the Vision Group; who organized the competition.



Bioversity International is a CGIAR Research Centre. CGIAR is a global research partnership for a food-secure future. www.cgiar.org

Bioversity International is registered as a 501(c)(3) non-profit organization in the US. Bioversity International (UK) is a Registered UK Charity No. 1131854.



The Records manager, Joy Rwakasheija explains to farmers about the common bean diversity exhibited during the World Food day celebrations of 2012.

Contacts:

Bioversity International
Via dei Tre Denari, 472/a
00054 Maccarese (Fiumicino), Italy
Tel. (+39) 06 61181
Fax. (+39) 06 6118402
bioversity@cgiar.org

www.bioversityinternational.org

Key Partners

Government of Uganda
United Nations Environment Programme
Global Environment Facility
International Fund for Agricultural Development
National Agricultural Research Organization, Uganda
Swiss Agency for Development and Cooperation
Bioversity International, Uganda

Suggested readings

https://www.bioversityinternational.org/fileadmin/user_upload/online_library/publications/pdfs/Community_Seed_banks/Community_Seed_Banks.pdf

All pictures: Bioversity International/R. Nankya