**Community Seed Banking for Improving the Resilience of Farmers; the case of Kiziba (Kabwohe) seed bank in Uganda**

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**Background and Context**

This seed bank was established under the project of improving productivity and resilience for farmers through enhanced use of crop varietal diversity, focusing on Common bean (*Phaseolus vulgaris*) and Banana (*Musa spp*). This project addressed two Bioversity International strategic objectives: (a) Rural communities have increased productivity, ecosystem services and resilience of farming systems, forests and landscapes (b) Farm households and rural communities have increased access to a diversity of quality seeds and other planting materials; leading to sustainable production and landscapes seen from enhanced productivity and resilience in farms and rural landscapes.

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 crops cultivars, therefore, 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 intra-specific 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 and ensured seed security through community seed banking. Common bean has been majorly a women’s crop therefore this project has benefited women in terms of availing them with the much needed diversity and equipping them with the capacity to grow them better thereby enabling them to have better yields, food and seed security.

**Key Strategies employed/Activities undertaken**

1. Determining whether the intraspecific diversity existed and how it was being accessed
2. Determining how to use the diversity to manage stresses like pests and diseases, climate change.
3. Enhancing the capacity of farmers in using the diversity to manage the stresses through trainings, exposure visits, demonstrations, diversity fairs.
4. Promoting actions that enhance the adoption of crop genetic diversity to manage the stresses – among these is community seed banking, diversity fairs and those in 3 above.
5. Providing opportunities to increase gender equity in program management and participation in activities and training opportunities. This was done by taking deliberate effort 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. More deliberate effort was put in ensuring that 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 as well as in the management and benefiting from community
Results/Impacts

Biodiversity Impacts

Kiziba (Kabwohe) seed bank was established in Kabwohe site, Sheema district. At the start of the project in 2008, there were 27 common bean varieties in this site and some varieties were getting rare, others were extinct. Farmers used to get their seed from markets, friends, relatives, own saved seeds; without quality control.

Farmers faced constraints like: seeds being expensive to buy and transport, varieties were not available in enough quantities at the right time, poor quality seed infested with pests and diseases, preferences not met as some varieties were no longer available as well as a high turnover of varieties due to the fact that farmers could only plant varieties that would be available at that point in time; even if they were not much desired due to their bad traits. This would the resilience of the farmers because at times they would change to varieties that are susceptible to pests and diseases, others that would succumb to too much sunshine or rain and when such stresses came, the farmers would be vulnerable to them because of lacking choices.

The seed bank has secured common bean diversity through: varieties collection, seed production, storage and distribution. 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 policy makers in taking on diversity-rich options of production through awareness and sensitization activities has been enhanced. The seed quality has been management through; monitoring at farm level, seed treatment while at the bank with organic materials and accepting only seeds that meet the quality standards at the bank.
Kiziba seed bank was opened in June 2010 with 100kg of 49 varieties including the 27 varieties that were in this site before the project and the other varieties were brought in from the National gene bank and the other project sites. As of now, it has 69 varieties including landraces and improved varieties; out of which 26 varieties are very popular to farmers due to their desirable attributes like good taste, low cooking time, marketability, high yielding and resistance to pests and diseases. The issue of popularity poses a challenge of conserving even the less popular varieties in situ to promote their continued evolution, adaptation and future use especially in this era of climate change. Varieties that were getting rare and those that had gotten extinct from the area have been revived. 1027 farmers have benefited so far from over nine tons of seed so far distributed. The seedbank opened another distribution center in Sheema town council in 2014 and also started a business arm to do seed production as a business, to ensure sustainability of the seed banking activities. It is linked to the National gene bank and breeders to contribute to the continuous improvement of varieties.

**Socioeconomic Impacts**
The farmers that access seed from Kiziba seed bank are trained in proper agronomic practices for growing common bean including farm management, pests and diseases control and post-harvest handling so that they are able to produce seeds that meet the quality standards of the seed bank. As a result of accessing good quality seeds from the bank, there is seed security and the training in proper 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. Common bean is a source of protein and minerals like iron, zinc, therefore this community has access to these nutrients and their health has also improved in addition to the health of the banana plantations where
common bean is intercropped with banana and the latter benefits from the nitrogen fixed by the former as well as the mulching materials that are gotten from common bean after harvesting. The 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.

Deliberate effort was taken to ensure that there is participation of both men and women in the seed bank activities. The management committee comprises of 12 farmers out of which half are women. Even 60% of the seed bank beneficiaries are women because common bean has been majorly a women’s crop although the trend is changing with its getting commercialized in Uganda. These days, 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 grain for eating though 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 bank is on a voluntary basis but in future when its seed business has stabilized, they will start employing staff to run the bank activities.

Policy Impacts (Local and/or National Levels)
Kiziba seed bank promotes farmers’ rights of: saving, using and exchanging seed; 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 seed bank have guided the inclusion of community seed banking 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 of providing seed of local varieties and conservation of local varieties, indigenous knowledge, and practices through community genetic resource management.

Sustainability and Replication
The seed bank 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; which aspects are very important for enabling farmers adapt to climate change. It has a plan of doubling the amount of seed being accessed on a loan basis but also increase tremendously the amount of seed being sold by the business arm as well as the beneficiaries so that it becomes the number one good quality seed producer in the south western region by 2018. The management committee shares information with different stakeholders who are now visiting it to learn from its experiences so that they replicate the
seed banking activity in their respective areas. Information is also shared through seed fairs, diversity fairs, food fairs and agricultural shows where they are invited to showcase the diversity and knowledge they have in seed production and diversity management. Apart from those, the seed bank 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. The potential to sustain the positive impacts in the long term is high with the opening of the business arm where the seed bank is generating funds to run the seed banking activities like facilitating the management committee with transport to reach out to beneficiary farms that are far from it. Also 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.

**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 as well as the 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 the other is in charge of seed quality control, which functions are very crucial for the running of the seed bank. The women on the committee are trainers as well which motivates other women to come and benefit from the seed bank as they admire fellow women who are involved in its management.

**Lessons Learned/ Outcomes**

Kiziba seed bank has proven that seed banks do:

- Avail seed at right time on a loan basis
- Control the quality of seed
- Avail a diversity of varieties
- Offer choices for farmers
- Bring seed nearer to the farmers
- Conserve varieties
- Link farmers to the National gene bank and breeders
- Revive rare or extinct varieties
- Protect and promote farmers’ rights
- Equitably benefit both men and women
- Enable women to play a big role in the management of the seed banks as key decision makers.

**Remaining Gaps/Challenges**

Community seed banks going into seed production as a business threatens existence of landraces in Uganda as they are at the moment not registered on the nation’s list of varieties yet only registered varieties are legally traded in. The situation is worsened by the fact that there is no organization that is fast tracking the registration of landraces as of now. There market also favors few varieties which beats the logic of having such a high diversity of
common bean varieties because farmers tend to focus on varieties that they can market to get income.

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