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SEED BANKS IN EMERGENCIES: A ROUNDTABLE DISCUSSION

DISCUSSING THE VIABILITY OF SEED BANKS IN EMERGENCY SETTINGS

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ISSD Africa

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Disclaimer

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About ISSD Africa

Integrated Seed Sector Development in Africa (ISSD Africa) is an international community of practice, guiding seed sector innovation and development on the African continent to alleviate the problem of limited access to quality seed.

About Mercy Corps

Mercy Corps is a leading global organization powered by the belief that a better world is possible. In disaster, in hardship in more than 40 countries around the world, Mercy Corps partners to put bold solutions to action - helping people triumph over adversity and build stronger communities from within. Now and for the future.

Introduction

Around the world, community seed banks (CSBs) play a vital role in helping communities to save and exchange local seeds, promote conservation of local seed biodiversity, support seed access and availability, as well as enhance local knowledge in seed quality control (Vernooy *et al*., 2017). However, to date, there is a dearth of literature on the use and or potential role of CSBs in emergency contexts, typified by complex humanitarian challenges resulting from natural disasters and man-made shocks. Emergencies often disrupt the lives of farming families, and the agricultural production systems they rely on are often rendered dysfunctional. Smallholder farmers are particularly vulnerable and deal with a range of shocks and stresses, including climate variability, conflict, and COVID-19.The seed sector is also vulnerable in these settings, with emergencies threatening and compromising the overall resilience of both formal and informal seed systems (Louwaars and Manicad, 2022). In emergency situations, such as in times of conflict or after a natural disaster, communities' priorities often shift and their ability to set up or maintain a seed bank becomes more challenging. Especially in places where the nature of the stress is recurrent, such as drought or displacement, the likelihood that the seed bank can be replenished regularly with quality inputs diminishes. This has led to instances where NGO stakeholders must replenish the stock in the short term, and the failure of the CSB in the long term.

As repositories for local crop genetic diversity (Vernooy *et al*., 2017), CSBs may play a role in communities' abilities to cope with shocks, such as enabling access to seed of a diversity of crop varieties in the event conflict disrupts the functioning of formal and informal seed supply systems. The nuances of when CSBs can act as a coping mechanism versus when they are at risk have received little attention in practice and literature.

Prompted by the need to discuss this subject further, Mercy Corps, through ISSD Africa, hosted a roundtable on the viability of seed banks in emergency settings. This document provides a summary of the key discussion points from the roundtable, including suggestions for further discussion, research or evaluation.

Roundtable Overview

On 18 January 2023, Mercy Corps in partnership with ISSD Africa hosted a virtual roundtable discussion with 14 stakeholders – composed of donors, agricultural researchers, technical advisors and consultants from Ethiopia, the Netherlands, South Sudan, Uganda and the United States of America – with interests in seed programming.

The overall aim of the roundtable was to explore the viability of CSBs in emergencies. Specific objectives were to:

1) Discuss CSBs' effectiveness in emergency situations and in the face of recurrent shocks/stresses
2) Identify specific considerations for setting up / maintaining CSBs in emergency settings
3) Discuss the circumstances under which humanitarian practitioners should/should not be promoting or establishing new CSBs in emergency settings.

To achieve the objectives, the roundtable adopted a topical approach, which included:

- How have community seed banks helped (or not helped) communities cope or adapt in the face of an emergency or recurrent shocks/stresses? What enabled them to succeed or not succeed?
- What are the foundational elements required to set up and sustain a community seed bank in an emergency setting? For example, what are the specific considerations for location selection, infrastructure, membership, selecting/maintaining quality seed, multiplication, etc.? What are the risk factors at each of these stages? How can they be mitigated?
- Under what circumstances should implementing partners (IPs) be promoting/setting up new CSBs during an emergency, if at all? How do we learn from where these have failed?

Roundtable Agenda

1) Background to the roundtable
2) CSBs' contributions to resilience
3) What is different about CSBs in emergency settings?
4) Should IPs be promoting CSBs in emergencies? Is it ever appropriate? Under what conditions?
5) What do we still need to learn? Ideas for future research, discussions, etc.
6) Summary of insights and next steps

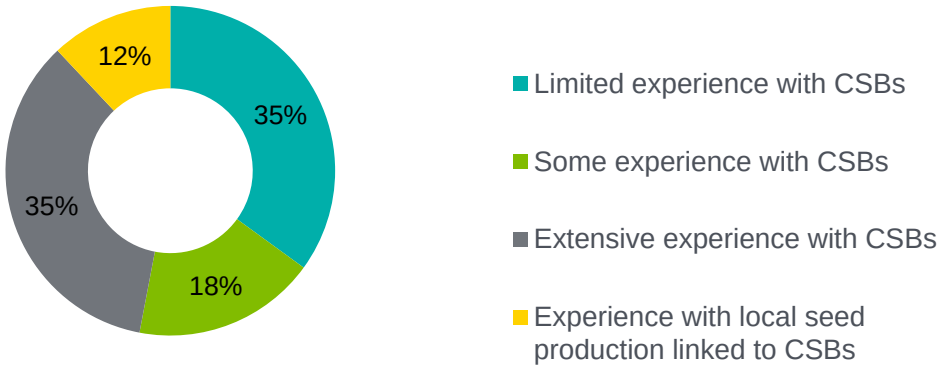
Summary of the roundtable discussion

During the roundtable, Mercy Corps-ISSD Africa asked participants to contribute ideas through facilitated discussion, a shared Google document, and the Teams chat box. The following represents a summary of participants' contributions in the discussion. It should be noted that the views reflected here are from a small group of people and that this discussion is a starting point in a process of further understanding the potential role of CSBs in emergency settings.

Level of experience with Community Seed Banks

While all participants had experience and interest in seed systems in general, they were first asked to indicate their level of experience with CSBs. The chart below indicates that 53% of the participants had either *extensive or some experience with CSBs*; 12% had experience with *other locally based seed initiatives* (e.g. local seed businesses); and 35% had *limited experience with CSBs*. The mix of expertise from different countries and stakeholder groups provided for a rich discussion and varying perspectives.

Figure 1. Participants' level of experience with CSBs



Discussion 1: Community Seed Banks' contributions to resilience

The first discussion focused on how new or existing community seed banks helped, or did not help, communities cope or adapt in the face of an emergency or recurrent shocks/stresses, as well as what enabled or hindered the CSBs' success. The following is a summary of participants' reflections on CBSs' contributions to resilience and success factors.

Roundtable reflections

Participants noted that communities have used CSBs to respond to numerous shocks and stresses, such as loss of crop diversity due to climate change and limited access to seed varieties due to conflict. However, it was noted that, in most cases, **the CSBs were set up prior to the shock or stress hitting the area**. In those circumstances, community members were able to draw on the CSB as a coping mechanism during the shock or stress.

Concerns were raised, especially by the donors in the discussion, about IPs recommending establishing *new* CSBs during emergency responses. Different types of emergencies – such as war versus drought or floods leading to pests and diseases – may require different seed-related responses, and any emergency response type (including, potentially, CSBs) needs to be informed by an assessment.

Participants also discussed how CSB preparedness is not common, but sorely needed. For example, many shocks are predictable using meteorological data, data on conflicts, etc. Existing CSBs can be more proactive in planning for shocks and stresses through having risk reduction plans in place, to enable CSB scaling up or down as needed during and post-shock, while maintaining basic CSB functionality.

Throughout the discussion, participants raised two main shocks or stresses during which CSBs have been used to support communities to cope or adapt. These are **conflict** and **climate change-induced loss of crop and variety diversity**.

CSBs' contribution to resilience in conflict-affected areas

In conflict-affected areas, formal and informal seed systems may be rendered dysfunctional, markets disrupted, social networks dismantled and crop/variety diversity lost. Participants provided examples of where CSBs have been used to improve resilience to conflict-related disruptions, as summarized in Table 1.

Table 1: Participant examples of CSBs' contribution to resilience in conflict-affected areas

Country	How have community seed banks helped (or not helped) communities cope or adapt in the face of an emergency or recurrent shocks/stresses?	What enabled them to succeed or not succeed?
Nepal	CSBs were established during the civil unrest in the country when the formal seed supply system was severely restricted or disrupted (local seed security focus). Another issue was also the fast disappearance of local varieties of several food crops due to the push of only a few modern varieties (conservation focus). CSBs served both purposes - supporting conservation and bolstering the local seed system.	CSBs were an additional activity of already existing community-based organizations (CBOs), supported by non-governmental organizations (NGOs). They started with awareness raising, capacity building on seed collection, storage and distribution practices, and, only later, the physical structure was built. Also, strong support from the local government, such as providing land for free. The formal system was dysfunctional and CSBs were found to be more decentralized. The community could collect and conserve local crops/varieties.
South Sudan	FNS-REPRO is setting up new local seed banks based on the local context to maintain and make accessible popular landraces and to preserve germplasm. They are creating linkages to the basic national gene bank as a pilot.	The local seed banks are grounded in the local context and linked to informal seed networks (within which women play a key role in availing seed to local communities and beyond, including to internally displaced persons (IDPs), returnees etc.)
	Due to displacements resulting from wars and effects of climate change, local varieties disappeared. Community members have taken the initiative to collect seeds and keep them at a central place for conservation and preservation, while also enabling seed availability and access when farmers are in need. Currently, the community chairman is the custodian of the seeds, but there are plans to construct a neutral storage structure. However, it is clear that physical structures in areas of potential armed conflict may be a high risk and also, there is a need to win the trust of local community members.	The CSB initiative is community owned and driven by the community's need to conserve and preserve diversity of local varieties.
Sudan	CSBs were established across parts of Darfur during the conflict years but it is not clear what has happened since then in terms of their functionality.	There was strong community interest from donors/agencies but also concerns. Some donors wanted the CSBs in high visibility areas, which was not in the interest of local communities. Certainly not in high-risk areas where food/food stores were prime targets.

CSBs' contribution to resilience from natural disasters or climate change-related loss of crop/variety diversity

CSBs have traditionally been used as a way to conserve local seed biodiversity. Participants discussed examples of CSBs being used following natural disasters or climate change-related events as a way to access local biodiversity. Specific examples are summarized in Table 2.

Table 2: Participant reflections on CSBs' contribution to resilience from natural disasters or climate change-related loss of crop/variety diversity

Country	How have community seed banks helped communities cope or adapt in the face of an emergency or recurrent shocks/stresses?	What enabled them to succeed or not succeed?
Ethiopia	In Ethiopia there are community seed banks and local seed businesses (seed producer cooperatives) and other community-based seed producers which are producing and conserving seed.	While the CSBs have been largely supported by the public sector, NGOs and seed-based projects, they need to be somehow market-oriented to be successful. Also, the CSBs should be established proactively to meet farmers seed needs during emergency situations, and should start with preserving the local genotypes.
Nicaragua	Established by La Unión Nacional de Agricultores y Ganaderos de Nicaragua (UNAG) in 1979 in northern Nicaragua, seed banks are formally established with buildings, equipment, humidity testers, bags, etc. UNAG has more than 30 years of engaging farmers, beyond seed banks. Farmers belonging to UNAG had limited challenges in getting back to farming after hurricanes Eta and Iota.	The CSB was set up long before the hurricanes hit. The UNAG had been around for a long time, was formal and well-functioning.
Uganda	CSBs have been used to recover seeds that have been lost as a result of climate change and conflicts. Eastern and Southern Africa Small-scale Farmers' Forum (ESAFF) Uganda explained that, as a result of continuous loss of biodiversity in the community, small-scale farmers started collecting and saving seed in a specific part of their homes. Later, they upgraded to a constructed building because they had so many seeds. ESAFF Uganda has supported communities to construct CSBs, which have helped recover seeds that have been lost as a result of climate change and conflicts. CSB have played a key role in improving nutrition and food security, have empowered small-scale farmers to take control of their food and seed sovereignty and contain a wealth of medicinal seeds.	The success of these CSBs was attributed to: i) ownership of the CSB by members of the community with willingness to contribute to developing the CSB, and ii) availability of technical support and political support from local leaders in the community. CSBs have collaborated with the Ministry of Agriculture, especially seed certification authority. Through this collaboration, staff from seed certification visit CSBs, take samples and then have them tested in the national seed labs for purity, germination percentage, etc. As a result, some CSB members have been given the go-ahead to produce QDS.
	The National Agricultural Research Organization (NARO) through the Uganda National Genebank (UNGB) has been able to restore the lost diversity especially of common bean varieties to the farming communities by establishing CSBs.	This marked the beginning of CSBs in Uganda and has enabled other stakeholders to scale out community seed banking activities in the different regions of the country.

Discussion 2: Setting up CSBs in emergency situations: What's different?

Following the discussion on CSBs' contributions to resilience, participants discussed what is different about setting up and maintaining CSBs in emergencies compared to more stable settings; what considerations and risk factors are inherent in these settings; and how to mitigate them.

Based on the foundational elements for establishing and sustaining CSBs in stable contexts (e.g., site selection, infrastructure, membership, seed selection/quality maintenance), participants were asked to identify the considerations and risk factors for each of the elements in emergency settings – both for establishing new CSBs and maintaining existing ones – and mitigation strategies, where applicable. Other than the four elements, participants also had the liberty to list any additional elements. The responses below are a reflection of the key considerations and mitigation strategies noted by participants, which focus more on conflict-related shocks/stresses rather than naturally occurring shocks/stresses, and are not listed in any particular order.

SITE SELECTION (E.G., WHERE TO LOCATE THE SEED BANK)

- **Considerations and risk factors:** There should be relative accessibility to infrastructure and utility; crop diversity in the area; assess social suitability/based on need and local context and ensure motivated community members for ownership and maintenance; consider security issues and the neutrality of where the CSB facility is located (if it is a physical structure); and have a clear understanding of the conflict issues and conflict zones (inter-communal or government army vs opposition, etc.) *Note: it was recognized that not all CSBs are physical structures; some are community systems that may not have a central location or infrastructure.

- **Potential mitigation strategies:** Assess the need for a CSB based on the seed system functioning, demographics and geo-context; assess if a CSB is the right response - if the place is in an active conflict zone then the CSB structure could be targeted and potentially increase insecurity (avoid active or potential conflict zones); keep some seeds in portable containers within homes (easy to carry in case of need to move); if a CSB facility is set ensure it is in neutral, relatively well-protected and guarded places and potentially away from communities or other social areas,.

INFRASTRUCTURE

- **Considerations and risk factors:** The nature of the storage facility (e.g., a temporary storage structure if in a conflict-affected area and the risks of invasion and potential losses are high; or a permanent storage facility that can withstand predictable shocks like floods; or a well-secured facility to prevent invasion by insurgents); utilities (e.g. power and water sources) to support seed health and quality during storage; condition of the roads and accessibility to farmers; and the availability of distribution systems. *Note: it was recognized that not all CSBs are physical structures; some are community systems that may not have a central location or infrastructure.

- **Potential mitigation strategies:** Assess the context to understand well the shocks/stresses and community dynamics before deciding on infrastructure; promote use of Grain Pro bags and other hermetic bags now available, which do not affect germination capacity; if the area is an active conflict zone, the seed storage could be underground (hidden).

CSB MEMBERSHIP

- **Considerations and risk factors:** Community members' willingness to engage in the CSB; potential of including opposing groups in the same CSB in a conflict-affected area; elite capture / control over seed bank.

- **Potential mitigation strategies:** Prior awareness creation and interest raising through training; develop and enforce bylaws to guide the operations of the CSB; ensure potential conflict resolution/mitigation discussions are held before engaging opposing groups to manage CSB together.

SELECTING AND MAINTAINING SEED QUALITY

- **Considerations and risk factors: *Seed health*:** Variation in seed quality control practices and seed quality perception among farmers and groups may differ in communities with populations from different locations (e.g., internally displaced persons, refugees, host population, etc.); power cuts especially in areas affected by conflict and natural disaster. ***Farmer and other end-user trait preferences*** may differ if in an area with displaced populations from different places and cultures.

- **Potential mitigation strategies: *Seed health****:*** Minimum seed quality requirements and standard guidelines for quality seed and quality control practices, especially where farmers themselves contribute the seed for storage in the CSB; investments in renewable or backup power supply options such as solar, generators, etc., could help. ***Farmer and other end-user trait preferences:*** conservation of crop diversity including locally-adapted, climate smart, pest/disease resistant varieties within the CSB (however, the focus should be beyond local varieties as well); adopt frequent seed replenishment and participatory plant breeding practices engaging all the target groups.

KNOWLEDGE SHARING AND NETWORKING

- **Considerations and risk factors:** Limited implementers' contextual knowledge and communities' knowledge about CSB management; poor or no linkage between local seed initiatives and national seed institutions; weak or no forecasting capacity and feedback loop.

- **Potential mitigation strategies:** Sourcing diverse knowledge on seeds to share with members also to facilitate linkage between CSBs during shocks; establish linkage to the local government, local agriculture office and the national gene bank (if it exists); enhance access to information for increased preparedness and capacity to respond.

FUNCTIONALITY - SCALING UP OR DOWN DEPENDING ON THE SITUATION & DYNAMICS

- **Considerations and risk factors:** Maintaining core functions of the CSB in the face of expected shocks/stressors.

- **Potential mitigation strategies:** Conduct a proper seed system assessment to understand past dynamics in the face of shocks/stressors; prepare for and strengthen resilience of the CSB to be able to cope/adapt in response to *expected/anticipated* shocks/stressors; build upon, and where/when possible, strengthen the existing local capacities and to up- or down-scale the CSB depending on situation/dynamics.

SUSTAINABILITY

- **Considerations and risk factors:** Matching the crops and varieties of seed in the CSBs with the demands of local communities; poor networking with local government and other partners; limited organizational capacity within communities; prohibitive policies that are non-supportive of CSBs; most CSBs distribute the seed through 'seed credit' or 'seed loan' basis, but selling seed in cash for some popular varieties could also generate income to the CSBs (this practice is now in operation in some of the CSBs); limited engagement in value addition by CSB members.

- **Potential mitigation strategies:** More investment on community capacity building, organization development and quality seed storage and maintenance; give priority to conducting an assessment and understanding the conflict issues and risks mitigation - do not start with building the CSB infrastructure first; extend the networking and partnership with local government, local NGOs, national gene bank and others; develop enabling policy that support the CSBs (e.g. seed policy, or plant genetic resources for food and agriculture [PGRFA] policies); encourage cash sales to generate income for the CSBs; encourage CSB members to invest in value addition for increased production of local crops and to sell to the market (e.g. CSBs in Kisumu county in Kenya).

Discussion 3: Should IPs be promoting CSBs in emergencies?

Following the discussion on the fundamental elements required for setting up and sustaining CSBs, Mercy Corps-ISSD Africa facilitated an open discussion with participants to address under what circumstances (if at all) IPs should be promoting/setting up new CSBs during an emergency. There was general consensus that CSBs can help communities bounce back from shocks/stresses, however, their choice and establishment should be informed by an assessment and driven by the communities' needs and preferences. Additionally, their implementation should aim at enhancing long term local seed system resilience rather than short term response.

Participants shared reflections on what might help increase the effectiveness of CSBs in emergency situations, including:

- At the minimum, community seed needs assessment (such as a seed system security assessment [SSSA]) should precede any decision to select CSB as the most preferable response option in an emergency situation. First and foremost, we need to ensure we are doing no harm in a particular context.

- In areas where shocks can be predicted, such as through the use of meteorological or conflict data, CSBs need to be organized proactively (i.e., established early and adjusted in response to shocks/stresses). Currently, the capacity of CSBs to map the expected shocks and create preparedness plans is limited. However, with good data and information, IPs and communities can establish CSBs and prepare for shocks long before emergency situations occur.

- The scale of the CSBs should be large enough to respond to a wide range of emergencies. Right now, most CSBs (e.g. in Ethiopia) are limited in their abilities to support communities in the event of major shocks.

- It is critical to understand the different forms and elements of CSBs (e.g., whether a community, individual household or donor initiative, and the scale), to enhance the capacity of local communities/households within and across different tribes to tap into CSBs' richness, and to avoid establishing CSBs when IPs lack sufficient contextual understanding. Some key questions to ask include: What are the different forms and elements of CSBs that could be applicable in this situation? What is the community's level of knowledge about CSB and its management? How do we connect between informal/formal systems for sustainability of the CSB?

- If IPs are supporting or promoting CSBs in fragile environments, they should keep in mind that CSBs are part of a larger seed system. They are only one potential tool in supporting farmers to access quality seed and planting materials.

- Other than conserving diversity, CSBs can be used to achieve reintroduction of traditional varieties into communities, increase information and knowledge access and exchange.

- It is important to have the concept of CSB incorporated in the national seed policy (as it is encouraged in Uganda) and connected to the national genebank. If connected to the genebank, then there is a place from which to replenish seed stock if a shock occurs and damages the CSBs' stocks.

- As an incentive for farmer engagement, and to sustain CSBs in the long-term, efforts should be made to register farmers' varieties so that they can officially sell them (e.g. in the mountainous areas of Ethiopia, farmers started CSBs themselves, registered their varieties and have now double protected their varieties through local variety conservation and variety registration.)

Discussion 4: What do we still need to learn? Ideas for future discussion & research

Finally, participants were asked to share outstanding questions they have or ideas for future discussion, research or evaluation related to seed banks in emergency contexts. The list below summarizes the ideas raised.

- How might IPs determine if communities have the capacity to manage CSBs in a way that is not predicated on continuous support from NGOs or other external support? If an NGO is continuously replenishing seed in the CSB, it turns into an NGO bank, not a community seed bank. Establishment of CSBs should be informed by communities' needs assessment, e.g., through a seed system security assessment.

- How might IPs proactively increase chances of success and effectiveness of CSBs in emergency settings? How can seed sector stakeholders in emergency settings support an integrated risk management approach in the maintenance of CSB seed supply, diversity, availability and timely distribution? One idea is to use the drought cycle management framework (or something similar) for existing CSBs, to plan for CSB activity adjustments at different stages – from emergency through to the development (pre-, during, and post-emergency, and in more stable periods). This would enable a CSB to have a clear response plan should the context change, for example from a lower to a higher conflict context, and be linked to pre-determined trigger indicators that would instigate a change in activities (see Disaster Risk Reduction in Drought Cycle Management).

- When we say “local CSBs”, what exactly do we mean? Often we have in mind an institution or infrastructure, but if one is in the heart of conflict-affected areas, local seed banks might exist but in a very different manner than we expect them to exist (e.g., some are small initiatives of the local community or individual households within and across different tribes - not necessarily structures). This is to reduce the risk of shocks such as violence and targeted defects to food systems. There is a need to identify CSBs based on local contexts, needs and wants, and then, based on the situation, determine how they can scale up or scale down to maintain basic functionality. Basically creating an architecture of CSBs across different contexts and countries that can scale up or down to maintain basic functionality if things go wrong.

- How do we interconnect the formal and informal systems for the different roles that various parties in the CSBs might play? One potential way to achieve sustainability is to integrate CSBs into the national seed system. CSBs have a niche role in the national seed system. For example, in a good CSB, there may be hundreds of crops/varieties, which is more than most formal businesses would have. That is oftentimes the only source outside of farmer own saved seeds, thus adding value to the overall system.

- How do we ensure gender inclusivity in the establishment and management of the CSB? How do we ensure that the underlying gender differences and sensitivities overlain by emergency situations do not pose a threat to the existence of the CSB, but contribute to its sustainability in a complementary manner? How do we deliberately engage women in the CSB’s key decision making processes given their interests in and roles played in CSBs, which could be a good entry point for interventions and support?.

Conclusion and next steps

This discussion highlighted numerous examples of CSBs. It also raised a number of concerns, considerations and potential mitigation strategies that IPs should take into account if they are proposing CSBs in emergency settings. There is an opportunity to document cases and learning on the use of CSBs in emergency settings, and continue to build the evidence base for what works and does not work.

If you are interested to continue this discussion, sign up for the ISSD Africa newsletter or the SCALE newsletter to stay updated on any future roundtables, webinars and more.

Resources about Community Seed Banks

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Capacity development for community seed banks

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