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# Improving Seed and Food Security in Malawi

The Role of Community Seed Banks

### **Key points**

- Smallholder farmers depend on cultivating a diverse range of local crops and varieties. This diversity helps farmers to adapt their production to the effects of climate change and to meet nutritional needs
- Seeds of local crops and varieties are often scarce; in many communities, much of the diversity is gone or is disappearing rapidly.
- In Malawi, official seed policies have contributed towards this reduced diversity, as they neglect the vital importance of local crops and varieties for food and nutrition security.
- Agrobiodiversity-based community seed banks contribute significantly to local seed and food security by serving as valuable hubs for the reintroduction of local crop diversity.
- Scaling out agrobiodiversity-based community seed banks is an important means to improve seed and food security among smallholder farmers in Malawi.







#### Seed Security - Definition

Seed security exists when men and women within the household have sufficient access to quantities of available good quality seed and planting materials of preferred crop varieties at all times in both good and bad cropping seasons.

(FAO 2016)

#### DIVERSIFARM - The Project

The research project *Pathways to* food security, poverty alleviation and livelihoods through the implementation of Farmers' Rights to crop genetic diversity (DIVERSI-FARM) is designed to identify agrobiodiversity-based pathways to food security, poverty alleviation and livelihoods among small-scale farmers in the Global South, with a focus on Community Seed Banks (CSBs). Case studies are underway in Malawi, Ethiopia and Nepal, with a view to deriving lessons relevant to other developing countries as well. The analyses are intended to inform governments, NGOs, international negotiations and development cooperation.

The DIVERSIFARM project is being implemented between 2020 and 2023 by the Fridtiof Nansen Institute (FNI), Norway, with partners from the University of Cape Town in South Africa, Mekelle University in Ethiopia, The Alliance of Bioversity International and CIAT in Nepal, German Institute for **Tropical and Subtropical** Agriculture and Norwegian University of Life Sciences. In Malawi, the project has collaborated with The Development Fund Norway, for facilitation of the field trip and outreach activities. DIVERSIFARM is funded by the Research Council of Norway (research grant number 302631).

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# Improving Seed and Food Security in Malawi

### The Role of Community Seed Banks

#### Background

Smallholder farmers are the backbone of the Malawian economy. However, they increasingly experience food shortages, particularly in the lean periods before harvest time. This Policy Brief focuses on the role of seeds in addressing hunger, and how community seed banks (CSBs) can contribute to seed and food security. We identify success factors for CSBs and conditions and suggest approaches for an enabling policy environment. The brief includes a set of recommendations for policymakers, legislators, NGOs and donors.

This Policy Brief builds on field studies conducted in Malawi in March 2022. The research involved semi-structured interviews with 25 focus groups and individuals in five communities across Northern and Central Malawi. We also interviewed key actors in Lilongwe and Mzuzu. A total of 100 farmers and 48 key informants participated in the research. The Brief also draws on a mapping exercise of CSBs that was done prior to the field studies, through a document and literature review and virtual interviews with 28 informants. In addition, a small, commissioned fact-finding study was conducted by the NGO Find your Feet. This brief presents preliminary findings of the research, to enable rapid feedback to respondents about the findings, and to summarise the needs and concerns expressed. A peer-reviewed article will also be prepared with a more comprehensive analysis of the results.

# The context: Factors driving the loss of crop diversity in Malawi

Many political, social and environmental factors are driving the loss of crop diversity in Malawi. In line with the agenda for a 'new Green Revolution in Africa' and the liberalization of the Malawian economy, these include a strong focus on 'modernizing' agriculture by promoting improved (certified) hybrid varieties which have high aggregate yields, and prioritizing a few crops such as maize and soybean, which have export and industrial value. Increasingly, there is also pressure to introduce genetically modified crops. As a result, there is a smaller range of food crops available to smallholder farmers than in the past, with negative impacts on household food and nutritional security (Chibwana et al, 2012) and reduced resilience to climate change (Bezner Kerr et al., 2019).

## The vicious circle of seed and food insecurity

The last months before harvest time are critical for food security in Malawi. Food shortages are frequent (IPC 2021) and farmers in desperate need of food often end up eating their own seeds. The result is that less seed is available for the next planting season and less food will be produced if the farmers are not able to acquire more seed. The low purchasing power of many smallholders and the reduced availability of preferred seed varieties means that the possibilities for buying seed are limited. A vicious circle ensues, and the possibility of meeting dietary needs deteriorates.

These trends were prevalent in all five sites visited in Northern and Central Malawi. As these areas are not among the most food-insecure areas in Malawi (IPC 2021), we expect this trend to be more widespread elsewhere in the country. More research is needed, but our initial findings are alarming.

"The case study findings are alarming"

#### Farmers' seed preferences

Farmers interviewed for the research emphasized the need for crop diversity to adapt their production to the effects of climate change, to spread the risks of crop failure and to meet their own dietary needs. We found that, despite the heavy governmental promotion of certified hybrid maize, smallholder farmers continue to prefer local maize. The local maize varieties are more tolerant to prolonged periods of drought, have greater resistance to pests and diseases, have longer storability, adapt better to traditional methods of processing and are considered to be much tastier. Local maize varieties are also more 'poundable', retaining more flour after milling and requiring less flour for making the staple porridge, nsima. Certified hybrid maize varieties are often preferred as cash crops, but only if farmers can afford to buy seed and input factors and have access to markets. Growing hybrid maize varieties is regarded as more risky, due to the danger of crop failure if conditions are not optimal.

Similar trends were observed for cassava. In sites near Nkhata Bay, where cassava is a staple crop, local varieties were popular, whereas commercial, hybrid varieties were cultivated only to a limited extent. Farmers prefer local varieties due to their resistance to pests and diseases, and because the flour that can be produced is very similar to maize and can be used for nsima.

Farmers emphasized their need to grow a diversity of crops, such as millets, sorghum, bambara nuts, groundnuts and various legumes and vegetables, to spread risks of crop failure and increase food and nutritional security.

"Access to quality seed of local varieties is among the critical factors for the food security of smallholder farmers in Malawi"

Seed scarcity is a limiting factor for most local crops and varieties. Farmers

generally depend on the seed they have managed to save or exchange with other farmers. Exchange is a possibility only when farmers have a surplus of seeds to offer — and this is often not the case. Seed insecurity is on the rise. Access to quality seed of local varieties is a critical factor for enabling the food security of small-holder farmers in Malawi.

## Community Seed Banks as a strategy

CSBs are local, informal or formal institutions whose core function is to maintain seeds collectively for local use (DF, 2011). They save and store quality seeds of diverse, often local, varieties for conservation, in order to make them available for members. Sometimes CSBs may also enhance local varieties through varietal selection based on farmers' preferences. Capacity building and farmer-tofarmer exchange of knowhow are typical features of many CSBs. CSBs are usually jointly managed by members as networks, cooperatives or associations with the aim of improving seed and food security, and sometimes income generation among members.

Recent evaluations of CSBs in Nepal and Ethiopia show that when managed well, CSBs contribute substantially to seed and food security, income generation and empowerment — among their members as well as in communities and nearby villages (Andersen 2019a and b).

## A brief history of CSBs in Malawi

The first CSBs in Malawi were established in 2010 in Rumphi District, Northern Malawi, to respond to concerns about food insecurity. In total, 14 CSBs were set up by the NGO Find your Feet (FyF) with support from The European Union and the Norwegian Development Fund (DF), a Norwegian NGO engaged in fighting hunger and injustice in the Global South. In 2013, FyF moved away from working on CSBs to re-focus its work on sustainable agricultural practices. The local NGO Biodiversity Conservation Initiative (BCI) took over the facilitation of four of the CSBs, also supported by the DF.

#### Crops at stake in Malawi

Traditional food crops grown in Malawi include sorghum, finger millet, pearl millet, cow peas, and pigeon peas, in addition to many wild plants collected for food. Until the turn of the 20<sup>th</sup> century, sorghum and millets were the main staple foods, but they have increasingly been replaced by maize, groundnuts, beans, sweet potatoes and cassava. The sizable increase in hectares dedicated to maize since 2005 can be attributed to the introduction of subsidy programmes focused on the distribution of fertilizers and certified maize seeds.

As a result, traditional food crops are increasingly under threat in Malawi. Most of the traditional varieties of maize, sorghum and finger millet are no longer grown in local communities and can now only be found as small samples in the Malawi Plant Genetic Resources Centre (Government of Malawi, 2015). Sweet potato and bean varieties have also disappeared, as have various indigenous vegetables. The genetic erosion of many traditional crops with high nutritional value is continuing at a rapid and alarming pace.



Finger millet in Chiwomo Community-based Fieldschool Photo: FNI - V.M.Vásquez



Sorghum at Kalongonda CSB (SFHC) Photo: FNI - V.M.Vásquez

#### The Biodiversity Conservation Initiative

The Biodiversity Conservation Initiative (BCI) was established as a non-profit organization in 2011 to contribute to the conservation and sustainable use of plant genetic resources for food and agriculture in Malawi. Based in Mzuzu, it has since been led by Dr Godwin Y. Mkamanga, former Director of the Department of Agricultural Research in Malawi, Director of the **SADC Plant Genetic Resources** Centre in Lusaka, Zambia, Associate Professor of Biology at Mzuzu University, and now the Executive Director of BCI. BCI serves as the focal competence centre on CSBs in Malawi.



Seed samples stored at Mkombezi CSB

Photo: FNI - V.M.Vásquez

The four CSBs managed by BCI aim to improve their members' access to quality seed of local varieties, while strengthening on-farm biodiversity conservation and enhancing agricultural methods to improve food security and income generation among smallholder farmers. The crops maintained at these CSBs include a range of local maize varieties, varied beans, Bambara nuts, cowpeas, sorghum varieties, pearl millet, finger millet, green gram, oil crops and many vegetables. Four local maize varieties have been enhanced through participatory varietal selection.

In 2015, FyF established two further CSBs in the Nkhata Bay and Mzimba districts. When financial support ended in 2017, FyF stopped supporting these CSBs. However, the CSBs are still operating today, and are managed by the members themselves without any NGO support.

Organizations such as the Catholic Development Commission in Malawi (CADECOM), the Schools and Colleges Permaculture Programme Malawi (SCOPE) and Small Producers' Development & Transporters Association (SPRODETA) have established CSBs in Malawi since 2017, 2019 and 2020, respectively. CADECOM facilitates the operation of five CSBs in Rumphi and Mzimba districts in Northern Malawi;

SCOPE works with two CSBs in Lilongwe, while SPRODETA has recently started working with three CSBs in the Mzimba district of Northern Malawi.

Altogether, there are 16 CSBs in Malawi aimed at promoting agrobiodiversity. Many more seed-related initiatives exist in Malawi which are termed 'CSBs', 'seed banks' or similar designations but most of these do not have a focus on agrobiodiversity. Our data indicates that there are currently at least 227 seed banks (and probably more) of various kinds in Malawi, servicing about 19,670 members with access to seed. The number of indirect beneficiaries is probably higher, assuming that seed sharing occurs, but could not be estimated from the data available.

"There are currently at least 227 seed banks of various kinds in Malawi. However, few of these have a focus on agrobiodiversity"



Green gram seed

#### Photo: FNI - Viviana Meixner Vásquez

### A typology of CSBs in Malawi

Seed banks in Malawi differ substantially in terms of purpose, scope, functionality and activities but can be divided into two main types, each with two sub-groups:

- 1. Agrobiodiversity-focused CSBs, which focus on conserving agricultural biodiversity, reviving local varieties and providing farmers with access to high-quality seed of local crops. They may also enhance local varieties through participatory varietal selection, and may offer training to build capacity in climateresilient agriculture and other topics among their members. There are two sub-groups:
  - a. member-based CSBs aimed at promoting agrobiodiversity (the classical CSB-model: 16 CSBs in Malawi (see boxes with examples)
  - b. outreach-based CSBs, such as that organized by the NGO Soils, Food and Healthy Communities (SFHC). A management committee distributes seed from 52 crop varieties to new groups of farmers each year, to reach as many as possible.

- Crop-specific seed multiplication and distribution seed banks, which are also community-based, but focus on one or a few crops, mainly for income-generating purposes. The two sub-groups are:
  - a. Those based on local crop diversity, of which there are currently five initiatives in central and northern Malawi, managed by the Lilongwe University of Agriculture and Natural Resources (LUANAR), aimed at improving farmers' access to high-quality seed of neglected and underutilized local crops and varieties, through strengthening farmers' seed systems.
  - b. Those based on improved varieties, of which there are at least 184 in Malawi, most of them organized by the International Crops Research Institute of the Semi-Arid Tropics (ICRISAT) in collaboration with the National Smallholder Farmers' Association of Malawi (NASFAM), aimed at facilitating farmers' access to seed of improved groundnut varieties.

#### Mkombezi Community Seed Bank

Mkombezi CSB, established in Rumphi District in 2010 by Find your Feet, was the first 'classical' agrobiodiversity CSB in Malawi. Today, Mkombezi CSB is facilitated by the BCI and is a thriving initiative, with 75 members and 60 associated members, as well as three satellite groups in other communities, comprising another 80 members. Currently, the CSB produces more than three tonnes of seed annually of more than 50 local varieties of different crops, of which four maize varieties have been enhanced through participatory varietal selection.

The CSB includes a building with storage facilities, a meeting room and a library. A thriving diversity block is located behind the building and is used for displaying CSB crop varieties and collecting seed, and as an arena for exchanging experiences. Vegetatively propagated crops are also maintained. Members meet once a week to maintain the diversity block. They have received training in climate-resilient agricultural methods, nutrition and food preparation, group dynamics and gender issues. Through the CSB, members have access to seed of the local varieties they prefer. The CSB invites members to store their private seed in the facility, and to sign a contract with the management committee agreeing not to claim their seed back until the planting season, to avoid seed loss during the lean season. The CSB contributes substantially to seed and food security and income generation among its members, with positive effects also in adjacent local communities.



Members of Mkombezi CSB Photo: FNI - V.M.Vásquez

#### **Mkuli Community Seed Bank**

Mkuli CSB in Nkhata Bay District was established by the NGO Find your Feet in 2015. Members were recruited and a management committee was put in place, together with the construction of a building and the provision of some training. However, funding dried up shortly after its establishment. Today the CSB has 18 members and an active management committee that maintains the 12 crop varieties they were able to collect on their own as seed. In addition to farmers' fields, these seeds are grown in a diversity block right behind the building, together with vegetatively propagated crops. On their own initiative, members conduct experiments in the diversity block to identify optimal growing conditions for the crops. Mkuli CSB is particularly interesting because it has functioned without external support since 2016 in a very remote, poor area, and has made a positive contribution to seed and food security among its members. Despite the low number of members and varieties maintained, there is much to learn from the experience of this CSB.



Members of Mkuli CSB in front of their diversity block. Photo: FNI - Regine Andersen

All seed banks have in common a management committee responsible for supervising, coordinating, and managing seed-bank activities. They also all have a payback system for seed distributed to members: the same volume of seeds is returned after each season, with an additional interest rate. In this way, the seed volumes expand, and more farmers can be invited to join the CSBs. The CSBs also contribute to developing farmers' skills and knowledge in selecting and producing quality seeds, and often also in farming practices.

# Success factors for agrobiodiversity-based community seed banks

Agrobiodiversity-based CSBs are hubs for the reintroduction of local crop diversity. Moreover, when they function well, they can contribute decisively to local seed and food security. Scaling out well-functioning CSBs would therefore be an important contribution to improving seed and food security among smallholder farmers in Malawi. The preliminary findings of our field studies in Malawi, supported by the CSB literature, suggest the following factors as important for the success of agrobiodiversity-based CSBs:

### 1. Technical support and access to seed in the initial period

The initial period of establishing a CSB is very important. Access to reliable technical support is critical in this period and needs to be in line with the preferences of involved farmers, recognizing and taking their traditional agricultural knowledge as a point of departure. Such support may take many forms. Organisational support helps to shape good governance structures and develops social cohesion among members: the 'glue' of a successful CSB. Technical support will be needed to develop seed-bank procedures, and to facilitate training in relevant issues. Technical support may also be needed for acquiring seed samples of the crops and varieties that members wish to grow, e.g.,

from the Malawi Plant Genetic Resources Centre or nearby communities, and for organizing seed multiplication.

#### 2. Appropriate location and facilities

CSB buildings and facilities should be located as centrally as possible in the local community, with easy access for as many members as possible. Accessibility tends to determine the level of participation. The storage facilities for seed, and roofing in particular, should be suitably constructed. A well-functioning CSB may grow rapidly: therefore, the facility should have sufficient space for the resultant volumes of seed. Space is also needed to store private seed as many seed banks now store members' seeds as a protective measure against them being used for human consumption. A CSB meeting room is also recommended. Arrangements should be made to ensure proper maintenance of the buildings. The diversity block should be located next to the CSB building, in order to ensure that it will be taken care of and function as an arena for exchange of experiences, and to promote social cohesion among members. The diversity block may also contain a field gene bank for vegetatively propagated plants, and should preferably have access to water.

#### 3. Good governance and leadership

Good governance is a crucial success factor for all CSBs. This includes clear and understandable bylaws, and robust democratic and transparent decision-making structures and processes. There should also be a strong, inclusive and transparent leadership that can show the way, while remaining attentive to the needs and preferences of CSB members and facilitating good management procedures. Identifying and electing good leaders is critical, as is training and coaching in leadership, governance and CSB management procedures to support their work, particularly in the initial stages.

#### 4. Capacity-building of members

To ensure the production of quality seed, farmers must be trained in seed selection, storage and management. Such training should recognize and take farmers' traditional knowledge as points of departure. Training in agroecological methods to adapt agricultural production to climate change can help members to make the most out of the varieties to be grown. Training in nutrition and food preparation has proven useful for improving food and nutrition security. Training in group dynamics and gender issues are also important supportive measures. Induction sessions could be offered to new members, alongside refresher courses on topics identified as priorities.

#### 5. Social cohesion

Social cohesion is the glue of any CSB and should not be underestimated. This may develop over time, provided that there are arenas for members to meet and where such developments can unfold. Diversity blocks have proved to function as such spaces, where farmers meet once a week, share experiences and perhaps a good meal, maintain the fields, and build relations. Trainings may also contribute to social cohesion, as may youth groups and women's groups where members support each other through various activities. Consideration may also be given to other arenas for farmer-to-farmer exchange, such as seed fairs and other events.

#### 6. Income generation

For a CSB to become independent of external support, it is important to have the financial means required to continue operations. Income generation for CSB is key. As the CSB movement in Malawi is still young and developing, experience in this regard is not plentiful. Experiences from Nepal show that seed sales can be a source of income. In Malawi, selling agricultural produce can be such a source, as has been the case for at least one CSB. More work needs to be done on

developing models for CSB income generation.

#### 7. A national network for CSBs

Technical support cannot go on forever, and the NGOs providing such support may wish to support new communities. This makes it important to establish a structure for backstopping established CSBs with advice when required. Such a structure could also facilitate exchange among CSBs, offer refresher trainings when needed and provide other functions that may arise. A national network to accommodate these functions would be useful for ensuring the long-term sustainability of CSBs and as a basis for expanding CSBs in Malawi. Similar networks have been established in Nepal and Ethiopia.

Collaboration with other initiatives and structures, such as lead farmer programmes, extension services and farmer field schools, may provide synergy effects that can boost the impact of CSBs.

## Conditions for an enabling policy environment

The most important conditions for an enabling policy environment are supportive legislation and policies. Current legislation in Malawi, confirmed in the 2022 Seed Act, implicitly allows farmers to save, use, exchange and sell farm-saved seed, as long as it is not sold as 'certified seed'. The primary objectives of the Seed Act are to establish a Seed Regulatory Authority; to provide a framework for the release and regulation of new crop varieties; and to certify seed to be sold for cultivation. This Act, along with other agriculture and seed policies, heavily promotes the commercial seed sector. Comprehensive subsidy programmes for commercial seed accompany these policies. If only a fraction of all the funding invested in commercial production could be allocated for the support and development of CSBs, much would be achieved. This neglected potential needs to be activated through robust government support programmes in order to strengthen seed and food security among small-



Good governance is a decisive success factor: Mr. Ringostar Kanyenda, Chair of Mkombezi CSB Photo: FNI - V.M.Vásquez

"Social cohesion is the glue of any CSB and should not be underestimated"



Members of the Mkuli CSB demonstrating the use of leaves and roots of Cassava for food. Photo: FNI – V. M. Vásquez

holder farmers in Malawi. An active policy for the conservation and utilization of crop genetic diversity is long overdue. This policy should be in line with Malawi's commitment as a party to the International Treaty on Plant and Genetic Resources for Food and Agriculture and the Convention on Biological Diversity with its Cartagena Protocol on Biosafety, and subsequently Farmers should participate in drawing up this policy.

"An active policy for the conservation and utilization of crop genetic diversity is long overdue."

#### Recommendations

The success factors described may serve as points of departure to scale out best practices and improve the functioning of current agrobiodiversity-based CSBs in Malawi. We add the following recommendations as the basis for a broader strategy to enhance the functioning of CSBs in Malawi.

A. Scaling out agrobiodiversity-based CSBs may be accomplished by means of crop-specific seed multiplication and distribution seed banks which already encompass organizational and physical structures as well as relevant knowhow and capacity. Our interviews in two such seed banks show considerable interest in such an endeavour: initiatives to date have focused on only one or two crops for marketing purposes, whereas most farmers

- need access to seeds of various crops relevant for improving their food security. Utilizing existing structures and knowhow could offer a fast track. Organizations involved in these seed banks could collaborate with NGOs involved in CSB facilitation to scale out agrobiodiversity-based activities in these seed banks.
- B. Organizations involved in smallholding farming projects in Malawi should consider assessing the seed security in their project areas and including CSBs as components of their projects. This will help to ensure that farmers have access to seeds of preferred crop varieties.
- C. The BCI has a central role in expanding CSBs in Malawi, as a centre of excellence and a knowledge hub for the country. The continued support of organisations such as BCI is vital to ensuring the further development and expansion of available expertise and capacity. The involvement of BCI as a knowledge hub and facilitator for CSBs throughout the country, is an important condition for the future success of CSBs in Malawi.
- D. An active and inclusive national policy should be adopted on the conservation and utilization of crop genetic diversity with a robust long-term support programme for CSBs. A national network for CSBs in Malawi should be established to enable the long-term sustainability and expansion of CSBs in the country, and could be part of such a long-term support programme.



Mkombezi Community Seed Bank.

Photo: Rachel Wynberg

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Front page photo: Members of Mkombezi CSB working in the diversity block. Photo: FNI - Regine Andersen

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