Farmer-managed seed systems in Dowa, Malawi: A legacy of eroded confidence and agricultural diversity after decades of Green Revolution implementation

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On 7 April 2015 the African Centre for Biosafety officially changed its name to the African Centre for Biodiversity (ACB). This name change was agreed to by consultation within the ACB, to reflect the expanded scope of our work over the past few years. All ACB publications prior to this date will remain under our old name of African Centre for Biosafety and should continue to be referenced as such.

We remain committed to dismantling inequalities in the food and agriculture systems in Africa and to our belief in peoples’ rights to healthy and culturally appropriate food, produced through ecologically sound and sustainable methods, and to define their own food and agriculture systems.

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Kusamala Institute of Agriculture and Ecology (Kusamala) is a non-governmental organisation that promotes household-level permaculture and agroecology systems in Malawi. Founded in 2009, Kusamala houses Malawi’s largest permaculture demonstration site, Nature’s Gift Permaculture Centre. Through the Centre’s demonstrations, Kusamala shares knowledge with individuals and communities on how to improve nutrition, income generation, and environmental health.

Acknowledgements

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Abbreviations

ACB  African Centre for Biodiversity
AGRA  Alliance for a Green Revolution in Africa
ARIPO  African Regional Intellectual Property Organisation
CICOD  Circle for Integrated Community Development
COMSIP  Community Savings and Investment Promotion
DADO  District Agricultural Development Office
FAO  Food and Agriculture Organisation
FGDs  Focus group discussions
FISP  Farmer Input Subsidy Programme
FMSS  Farmer-managed seed system
GDP  Gross Domestic Product
NAP  National Agriculture Policy
NNSP  National Nutrition Policy and Strategic Plan
NGO  Non-governmental organisation
OPV  Open-pollinated variety
PGRC  Plant Genetic Resources Centre
R&D  Research and development
SADC  Southern African Development Community
SSA  Sub-Saharan Africa
SUN  Scaling Up Nutrition
Use of terms

In sub-Saharan Africa (SSA) most seed planted by smallholder farmers is selected and saved from the previous harvest, or sourced from neighbouring farmers and local rural trade (McGuire and Sperling, 2016). The importance of these activities for biodiversity and livelihoods has been highlighted in a large body of published work (e.g. Jarvis et al., 2011; Vernooy et al., 2015). Despite this, mainstream discourse continually refers to these systems as being “informal”, implying a structurally inferior position to “formal” seed systems, where seed breeding, production and marketing are regulated and have standardised quality controls designed for commercial purposes.

The term “informal” thus suggests something that is sub-standard and should be eradicated over time and replaced with commercial systems. It also suggests an absence or diminished role of social rules and norms governing such systems (Coomes et al., 2015). We prefer to replace the term “informal” with the term “farmer-managed seed systems” (FMSS). This concept recognises that farmers are the primary agents in these systems, that farmer control over material resources and processes should be recognised, protected and extended, and that farmers should be treated as equal and active partners in attempts to support their farming practices. FMSS as a concept also recognises the ongoing centrality and necessity of these systems to food security, nutritional diversity and agricultural biodiversity.

When considering FMSS we may look at a range of aspects, including: plant breeding and the role of farmers in this; sources of public sector germplasm and farmer access; seed selection, enhancement and production in the field; seed storage, seed banks, and in situ conservation; indigenous knowledge, farmer and indigenous varieties and resuscitation and building of seed diversity; social networks and protocols around seed exchange and management; intersections with formal seed systems and possible benefits and threats to farmer seed systems; and the role of extension services and farmer organisations in supporting and strengthening farmer seed practices.

In relation to FMSS, we also refer to any seed that farmers have saved and reused for more than one season as a “farmer seed variety”. This, therefore, may include seed that was previously certified but was not purchased or distributed through registered seed agents in the past season.

Following Cousins (2014) we make a distinction between “smallholders”, which refers to size of landholding (measured in hectares), and “small-scale” which refers to enterprise size (measured in income or turnover). It is possible to have very large landholdings but a small enterprise (e.g. extensive livestock farming), and also small landholdings and large enterprise size (e.g. intensive, irrigated horticulture). In most of Africa smallholders and small-scale farmers will overlap.
Findings

Farm-saved seed is widely acknowledged as the major source of seed for smallholder farmers in Malawi (Government of Malawi, 2016) and this is true of the farmers we engaged with in focus group discussions (FGDs) in two villages in the district of Dowa. In an effort to achieve agricultural gross domestic product (GDP) growth and ensure food security, over the last 20 years the government of Malawi has directed concerted efforts toward embracing Green Revolution technologies to increase production of a few commercial crops, primarily maize. This has had a severely negative impact on agricultural biodiversity and nutrition security (Government of Malawi, 2016) and has deskilled farmers and undermined their confidence in their own knowledge and resources.

This Green Revolution push, aided by the distribution of certified/improved seed by the public extension service system and development agencies, has taken place within a political context where farmer seed varieties have been disparaged. Nevertheless, farmers have continued to access the bulk of their seed from their own farm-saved seed collections, neighbours and local markets. Farmers who participated in our FGDs advised that they continue to use a diversity of crops (up to 48 were identified) for both livelihood and home nutrition security. However, we found this agricultural diversity to be fragile and often maintained by just a handful of individuals.

General findings

- FMSSs are not acknowledged at all in Malawi’s strategy for agricultural GDP growth, as borne out by the National Agriculture Policy (NAP), currently under development. The core objective of the NAP is transitioning smallholders out of the agricultural sector and substantially growing the commercial sector (Government of Malawi, 2016a). Related to this objective are structural reforms taking place in the seed sector (CISANET, 2016) which only acknowledge and promote the role of improved and certified seed varieties and limiting or criminalising the use, distribution and sale of farmers’ varieties and farm-saved seed under certain circumstances. Nevertheless, there is a great deal of political will expressed in the National Nutrition Policy and Strategic Plan (NNSP) to support programmes designed to ensure nutrition security (Government of Malawi, 2007). Indeed, nutrition is recognised as a serious concern in Malawi. Policy solutions include educational programmes on nutrition with a focus on diversifying diets and utilising indigenous and traditional foods. This, however, has not been linked to the recognition, resuscitation, diversification, promotion or protection of genetic diversity and strengthening of FMSS – and the central and active role of farmers in reproducing this diversity. This means that the various food, agriculture, health and nutrition and gender empowerment networks must better coordinate and catalyse action for policy change, resource allocation and practical support for FMSS in Malawi.

- Limited research has been done on farmer seed systems in the Dowa district. Although farmers save seed from many crops and varieties, this activity is considered by farmers to be a necessary survival strategy because of the lack of alternatives, rather than a legitimate practice in its own right. The immense importance of saving seed to ensure that farming households survive from one season to the next, and to conserve agricultural biodiversity, has and continues to be poorly recognised at policy and practical support level – so much so that farmers themselves have learned to degrade their own activities and consider them to be inferior to external knowledge and inputs.

- Public and donor programmes are based on ad hoc dissemination of certified/improved seed, which, over time, has marginalised and dislodged the wide base of local and farmers’ varieties. With increasing reliance being placed on corporate-owned, external seed varieties, mostly limited to a handful of core crops (maize, legumes), agricultural biodiversity has been steadily eroded.

- The Farm Input Subsidy Programme (FISP) has played a huge role in displacing farmers’ varieties, eroding agricultural knowledge and promoting homogeneity where diversity is required, and is widely considered to be corrupt.
• There is limited, if any, public or private sector support for farmer-based seed practices, such as seed selection, on-farm or in situ enhancement, storage or exchange. While there is some recognition on the part of the government of the role of farmers in maintaining diverse genetic diversity, the importance and complexity of FMSS is poorly appreciated or understood.
• Limited resources, capacity and mandates impede institutions, such as the Malawi Plant Genetic Resource Centre (PGRC) from ensuring the utilisation and development by small-scale farmers of the country’s germplasm collection.

Findings from Dowa district

• Farmers are caught in endless short-cycle projects, often a number of projects at a time from different organisations, creating a dependency on external supplies of certified seed coming from these projects and FISP. Strategies for supporting farmers to maintain, enhance and share the diverse genetic resources at their disposal are not in existence.
• Farmers are advised repeatedly by most government advisors and non-government organisations (NGOs) that their own farmer seed is inferior and should be replaced with certified improved varieties wherever possible. Consequently, farmers frequently do not value their own seed or place importance on its conservation and enhancement, and instead strive towards accessing improved varieties.
• Women, in particular, are not confident about their agricultural knowledge, believing it to be of little consequence or importance.
• Nevertheless, participating farmers in the research sites cultivate and save seed for up to 48 different crops, mostly relying on local/farmer varieties. However, many of these crops are used and conserved by only a handful of individuals, indicating a worrying erosion of agricultural diversity, as well as loss of agricultural/traditional knowledge. As land pressure increases, wild crops may also be at risk of being lost. Traditionally, farmers have relied on wild crops to bolster nutrition, as they are ubiquitous and readily accessible in the wild.
• Farmers in both focus groups were sceptical about seed banks, citing lack of trust amongst themselves and past bad experiences that resulted in broken trust in the tribal authorities, who often preside over these banks. Particularly for primary crops, such as maize and soya, individual farmers were unwilling to share seed or grain with others; however they showed more willingness to share planting materials, such as sweet potato vines and local vegetables.
• Farmers’ associations utilising community grain storage facilities and selling cooperatively are already operating on a basis of trust and within well-managed community-based systems. This community cohesion and cooperation provides a strong basis for further work toward enhancing FMSS. Farmers from these associations expressed interest in accessing publicly held germplasm of groundnut varieties (especially one called Chalimba) as well as enhancing local cowpea varieties and developing early-maturing varieties of local maize.

Recommendations

• There is currently a disconnection between the nutrition policy, which seeks to diversify local nutrient intake through diversification of crops, and the seed policy, which is veering towards shrinking diversity. The current draft seed policy favours a private sector, profit-driven approach, and seeks to severely curb traditional farming practices, such as saving, exchanging, trading and bartering farm-saved seed, which is the very basis of the agricultural diversity in Malawi. The time has come for discussions about the seed sector to include approaches that integrate farmers, particularly small-scale and women farmers, into seed enhancement and production, and to develop contextually appropriate quality control systems based on farmer priorities, which offer a more sustainable and inclusive approach.
• Farmers need more information about seed obtained from both the formal and farmer-managed seed systems, as well as about seed-related policy and laws, in order to make informed choices and to envision and articulate how their own seed systems may be enhanced.
• Work needs to be done on strengthening
Farmer-managed seed systems in Dowa, Malawi: A legacy of eroded confidence and agricultural diversity after decades of Green Revolution implementation

• Practical, participatory research on the performance and value of local and indigenous crops and seed varieties is needed. Prioritising areas for research and development (R&D) of these crops and varieties, and participatory experimentation to enhance these crops and varieties according to farmer priorities, is essential for evidence-based advocacy. In this regard, there is a need to link relevant research institutions with farmers and support organisations, both within Malawi and across the region.

• The Malawi PGRC has acknowledged the importance of FMSS and indicated an eagerness to engage in research and repatriation of lost varieties. The Dowa District Agricultural Development Office (DADO) is very open to partnerships and collaborations, with most stakeholders reporting positive relationships with DADO. Opportunities thus exist for partnerships to be formed with farmers and their associations, and other interested civil society organisations and research institutions to deepen work around FMSS.

• Farmers could benefit from seed and knowledge exchanges to resuscitate varieties held by other communities. Agricultural and seed fairs offer opportunities to showcase seed diversity and their value especially of indigenous and traditional varieties, and can create spaces for farmers to share their knowledge and acquire new knowledge and information.

• Women farmers should be at the centre of these activities, to elevate, support and strengthen their knowledge and practices, including through forging links with organisations that focus on women farmers, nutrition, kitchen gardens and wild foods.
Introduction

Over the last decade the government of Malawi has consistently allocated over 10% of its national budget to agriculture, with the goal of fostering agricultural GDP growth of 6% per annum (Government of Malawi, 2016a). This is in line with the Maputo Declaration of 2003, in which signatory member states of the African Union committed to allocating at least 10% of their national budgets to agriculture, and adhering to the 2004 Comprehensive African Agriculture Development Programme (CAADP), which set a target of 6% annual agricultural sector growth.

The bulk of this budget has been allocated to input subsidies, which were reintroduced in Malawi in 1998, with the launch of the Malawi 2020 Vision – an overarching strategic development plan for the country. In 2005 three input subsidy programmes were merged to create the Farmer Input Subsidy Programme (FISP), which is a “smart subsidy” programme that provides farmers with vouchers to access certified maize and legume seed and synthetic fertiliser. In 2005/6, FISP accounted for 5.6% of the national budget and by 2011 the figure reached 6.5% of the national budget (ACB, 2016). To date, billions have been spent from public resources on FISP, which has been the key factor in financing, delivering and entrenching Green Revolution technologies in Malawi and creating a captive market for large agribusiness corporations that supply certified seed and inorganic fertilisers.

In our 2014 research into Green Revolution projects in Malawi, the ACB found that due to FISP, farmers are caught in a cycle of debt and declining soil fertility, and that there have been net transfers away from farming households to agribusinesses (ACB, 2014). Input subsidy programmes are an essential element in the expansion of Green Revolution technologies, because they institutionalise an approach to agriculture that is inherently not sustainable in their almost mono-focus on maize (to the detriment of dietary and agricultural biodiversity), wholesale promotion of synthetic fertiliser (which does not speak to building up health soil), and entry into commercial agricultural markets (which does not address issues of social and economic exclusion and inequities). The government of Malawi has acknowledged in the NAP that a single-minded focus on programmes designed to increase fertiliser use and adoption of improved seed has resulted in an “imbalance between agricultural production and nutritional outcomes” (Government of Malawi, 2016a).

The 2014/15 growing season was reportedly the worst year for production in Malawi for the last seven years, due to devastating floods in January 2015, followed by prolonged periods of drought. According to the Malawi Vulnerability Assessment Committee, an estimated 2.83m people will experience acute food insecurity during the 2015/16 lean season (World Food Programme, 2016) with far-ranging humanitarian impacts. Nutrition insecurity is alarmingly high; the stunting rate for children under the age of five is 42% and 23% of all child mortality cases are associated with under-nutrition (World Food Programme, 2016). According to a 2011 Integrated Household Survey conducted by the National Statistics Office, 46% of the Dowa population – where this research was carried out – live in poverty. This is slightly below the regional and national rates of 49–50% (Government of Malawi, 2011b). It is extremely worrying that farmers’ resilience in the face of increasing natural disasters and the onset of climate change has been so profoundly diminished through the promotion of Green Revolution strategies and the concomitant loss of agricultural diversity.
Methodology and background to study sites

The research was carried out by a team consisting of five women and three men from the ACB, Kusamala representatives, and farmers representing the farming community in Nkulera and Mthuzi in Dowa district. Inclusion of farmers enabled them to actively participate in the research process and engage with other relevant stakeholders, including at district level.

- The team conducted two focus group discussions (FGDs) with farmers in Nkulera and Mthuzi. The FGDs consisted of 19 farmers in Nkulera (including eight women) and 15 farmers in Mthuzi (including eight women). The research team used colour cards picturing crops and seeds commonly cultivated in Malawi to stimulate discussion on FMSS. The picture cards were sourced from a community training tool kit – Scaling Up Nutrition (SUN) Malawi – developed by the Malawian government as part of the continuing efforts to end stunting and under-nutrition.1
- We made site visits to two farmer associations in Dowa that were saving grain in community storage facilities.
- We conducted key informant interviews with eight NGOs operating in Dowa and working with smallholder farmers to improve livelihoods and, in some instances, assisting with promoting sustainable agricultural practices. The team also interviewed staff members from the Dowa District Agriculture Development Office (DADO) and the Malawi Plant Genetic Resources Centre (PGRC).

Research sites

Dowa is a district in the Central Region, within the Kasungu-Lilongwe plain. It has a tropical climate with distinct wet and dry seasons. The wet season is from November to May and the dry season May to October. Approximately 81% of land in the district is under rain-fed crop cultivation. The annual rainfall ranges between 500mm and 2,000mm; substantial changes in the weather pattern have been noted, with the rainy season starting late and ending early (Dowa Council Chamber, 2015). The district is topographically divided into the predominantly

Figure 1: The research team

1. The manual and related food cards, planting calendars and other tools can be accessed at: https://www.dropbox.com/sh/kp6rx51oepj11o3/AAAhjHk_BHZlwpwsqwfdOua?dl=0
hilly eastern part, where crops, such as bananas, beans, vegetables, sugarcane and citrus fruits are grown; and the low plains of the west, where there is extensive cultivation of maize, tobacco and groundnuts, as well as livestock farming (Dowa Council Chamber, 2015).

**Kusamala baseline survey with farmers in their Integrated Household Farming programme**

Kusamala is implementing an Integrated Household Farming (IHF) programme with 1,500 farmers in Dowa district. The organisation chose to work here as the Dowa DADO identified farmers from these communities as having no extension services or development support from the public or NGOs/development sectors. In 2013 Kusamala conducted a survey with 374 farmers in the project catchment area, to establish a baseline for: livelihoods; perceptions of well-being and climate change preparedness; household diet diversity, food production and food security; and agricultural practices. Of farmers surveyed, 85% reported that their income rarely or never meets their basic needs, more than 75% reported that their soil was of poor quality, and 91% said their harvest quality and quantity was unsatisfactory or only fairly satisfactory. Farmers (85%) ranked high seed prices as the third highest threat to their farming systems (Kusamala, 2015). Only 34% of the respondents reported never worrying about running out of food before finding more food, and 44% reported that they save seed – although the survey did not go into any detail about which specific seed types farmers were saving.

The baseline survey looked at dietary diversity of farmers in their catchment area and whether food consumed came from their own production, purchases, gifts or bartering. The survey found that maize as the staple food was consumed by 93% of respondents in the previous 72 hours and 81% of that maize had come from farmers’ own production. The survey also found that families tended to keep maize produced from local seed for their own consumption and maize produced from cultivated hybrid seed for sale.
Survey results showed that, during the rainy season, farmers have access to diverse vegetables. Some of these are cultivated, whereas wild and indigenous vegetables grow naturally around their homes, in dimba (wetland) gardens, staple fields and in the wild. Of respondents, 96% had eaten dark-green leafy vegetables, including mustard greens, pumpkin greens, rape, amaranth, bean greens, Chinese cabbage, cassava leaves and sweet potato leaves within the last 72 hours. Half of these came from their own production, 45% from purchase at local markets with the remainder coming from sharing and bartering. In contrast, “other” vegetables, such as tomato, onion, cabbage, mushroom and okra pods, which were consumed by 86% of respondents, were predominantly purchased (71%). These crops require expensive inputs, such as certified seed, which are beyond the reach of farmers surveyed. In addition, at the time of the survey, dimba gardens were generally flooded due to seasonal rains.

Legumes, nuts and edible seeds were the most reliable source of protein amongst those surveyed, with 76% of respondents having consumed from this group of foods, predominantly sourcing from their own production (63%), with 25% relying on purchase, 6% on sharing and 1% on bartering. Households also consumed other starch staples, but to a lesser extent (including rice, wheat, sorghum, millet, mandasi, bread, white roots and tubers, white/ Irish potatoes, white yams, white cassava, white sweet potatoes); vegetables and tubers rich in vitamin A (pumpkins, orange fleshy sweet potatoes); fruits rich in vitamin A (mangoes, papayas, tangerines); and other fruits (bananas, guavas, lemons, avocados). These results were to a large extent influenced by what was available in season, for example during the time of the survey (December) pumpkins and many foods rich in vitamin A are not available.

Initial scan of crops and varieties in the research sites

Before the scan began a session was held to discuss the differences between indigenous varieties, farmers’ varieties, open pollinated varieties (OPVs) and certified/improved/hybrid seed. The farmers expressed the view that any seed that is recycled, even just for one season and no matter its original source, is regarded as “local seed”. They contended that when seed is recycled, it “reverts back to local”. Implicit in this idea is that the varieties become localised through the process of being sown in the soil and are then considered as part of farmers’ own varieties. Participating farmers referred to store-bought seed as hybrid seed, with no distinction being made between certified OPVs and hybrid seed. Farmers asked for clarification on the positive characteristics of OPVs as they were unaware that choosing OPVs could alleviate the yield losses associated with recycling hybrids. One farmer realised that she was using an OPV maize (Demeter) and said that she would carefully observe the difference in performance in the next season.

During the scan in the two FGDs, farmers listed the crops they utilise throughout the year. We found it particularly striking that farmers experienced a great deal of difficulty in engaging in discussions about seed beyond maize, tobacco and legumes. We found that they really struggled to understand why we were interested in the crop and seed varieties they utilise for producing income and for nutritional purposes. We got a strong impression that the “mantra” that only certified seed can be categorised/characterised as seed has filtered down to farmers and there was general agreement that the only reason farm-saved seed is used at all is due to lack of access to certified seed.

Farmers noted that recycling hybrid seed was common practice borne out of necessity, due to the lack of resources to purchase fresh seed every season and an inadequate supply of own seed, even though this resulted in a loss of yield. Farmers had no knowledge
whichever about the current reform of the seed sector taking place in Malawi; or of the concept of plant variety protection; or of any regulations prohibiting the sale, distribution and dissemination of uncertified seed. The historical process of input vouchers for the purchase of certified seed and the common practice of certified seed donations/aid from development organisations have entrenched a legacy of farmers taking whatever is on offer from year to year and project to project, and, in the process, becoming increasingly unskilled, unconfident and unable to be discerning and exercise free choice.

The research team’s use of picture cards sourced from a government nutritional training kit, SUN Malawi, which showed colour photographs of common foods eaten in Malawi,2 was invaluable in stimulating farmers to share their seed practices outside of the common commercial seed (that is, certified maize, soya and beans). We selected cards representing crops that Kusamala had already identified in their 2013 baseline survey as being cultivated, and asked farmers if they were cultivating these crops and where they were sourcing the seed from. We then asked farmers to identify any further crops they were cultivating and saving seed from.3

Table 1 indicates a high level of recycling. The Nkulera group were saving and recycling seed for 28 different crops, compared to 48 in Mthuzi. The majority of farmers who participated in the focus groups saved seed for maize, soya, beans, pumpkins, groundnuts, cowpeas and amaranth. Farmers who reported saving indigenous varieties of maize numbered six out of 13 in Nkulera, and four out of 18 in Mthuzi. Indigenous maize varieties being saved are Kalakanyani, Kanjedenjede, Kachiswe, Mkangala and Kachamsana/Mtsakinya. The latter – Kachamsana – literally translates to “maturing in the afternoon”, implying early maturing. All farmers from both localities were saving and recycling hybrid maize. Maintaining varieties or variety purity is a challenge, given the small plots and close proximity of plots to one another.

A relatively high proportion of farmers also saved seed for up to three varieties of indigenous spiky cucumber: African horned cucumber (Cucumis metuliferus – Zipwete), bur cucumber (Cucumis Anguria – Zikanyanga) and Kayimbi (Cucumis spp). Farmers noted that all of these varieties are adaptable and resistant against pests and diseases. The African horned cucumber is an annual vine that bursts forcefully to release seeds; thereby effectively replanting itself. It is a traditional African wild food plant, rich in vitamin C and dietary fibre. The bur and Kayimbi cucumbers can be cooked as a vegetable or eaten raw. Like the African horned cucumber, these varieties also burst forcefully and release their seeds, germinating when the rains come, without farmers having to make the effort to plant them. However, because of common clearing practices that use fire, these seeds get burnt and are gradually disappearing. To ensure that they have cucumber seed for planting the next season, some farmers save their own seeds by smearing the undried seeds, still covered in jelly flesh, onto a wall.

While the practice of crop diversity displayed by participants in the two groups can seem quite healthy, it must be noted that the diversity within these crops is low, and, in many instances only one farmer was found to be utilising a particular crop or variety, indicating that this diversity is also very fragile. In addition, through discussions it became apparent that, although wild vegetables are commonly eaten and are vital components of family nutrition, their habitats are increasingly under threat.

2. See: https://www.dropbox.com/sh/kp6x51oepj1103/AAAhjHk_BHZ2lw5pswqdODu?dl=0
3. Unfortunately, we did not have an opportunity to go deeper and learn about the many varieties in use. This information would be important to gather in further research.
Table 1: Diversity of crops in farmer-managed seed systems

<table>
<thead>
<tr>
<th>Crop</th>
<th>Nkulera</th>
<th></th>
<th>Mthuzi</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. of farmers saving seeds</td>
<td>Sourced from</td>
<td>No. of farmers saving seeds</td>
<td>Sourced from</td>
</tr>
<tr>
<td>Maize</td>
<td>13</td>
<td>Six local and 13 hybrid</td>
<td>15</td>
<td>Four local and 13 hybrid: two grow local and hybrid</td>
</tr>
<tr>
<td>Soya</td>
<td>13</td>
<td>Three local and 10 hybrid</td>
<td>15</td>
<td>Both local and hybrid</td>
</tr>
<tr>
<td>Bean</td>
<td>13</td>
<td>Both local and hybrid</td>
<td>15</td>
<td>Hybrid</td>
</tr>
<tr>
<td>Pumpkin</td>
<td>13</td>
<td>Both local and hybrid</td>
<td>15</td>
<td>Local</td>
</tr>
<tr>
<td>Groundnut</td>
<td>13</td>
<td>Both local and hybrid (eight farmers save the hybrid )</td>
<td>15</td>
<td>Both local and hybrid</td>
</tr>
<tr>
<td>Amaranth</td>
<td>13</td>
<td>Both local and hybrid</td>
<td>15</td>
<td>Both local and hybrid</td>
</tr>
<tr>
<td>*Black Jack</td>
<td>13</td>
<td>Local</td>
<td>15</td>
<td>Local</td>
</tr>
<tr>
<td>*Roselle</td>
<td>13</td>
<td>Local</td>
<td>15</td>
<td>Local</td>
</tr>
<tr>
<td>Cow pea</td>
<td>11</td>
<td>Both local and hybrid</td>
<td>15</td>
<td>Both local and hybrid</td>
</tr>
<tr>
<td>Spiky cucumber</td>
<td>13</td>
<td>Local</td>
<td>8</td>
<td>Local</td>
</tr>
<tr>
<td>Banana</td>
<td>10</td>
<td>Both local and hybrid</td>
<td>9</td>
<td>Nine have only local and seven also have hybrid</td>
</tr>
<tr>
<td>Monkey orange (Strychonos cocculoides)</td>
<td>0</td>
<td>n/a</td>
<td>15</td>
<td>Local</td>
</tr>
<tr>
<td>Gould</td>
<td>0</td>
<td>n/a</td>
<td>15</td>
<td>Local</td>
</tr>
<tr>
<td>Okra</td>
<td>0</td>
<td>n/a</td>
<td>15</td>
<td>Local</td>
</tr>
<tr>
<td>Snotapple (Azanza garkeana)</td>
<td>0</td>
<td>n/a</td>
<td>15</td>
<td>Local</td>
</tr>
<tr>
<td>Gallant soldier</td>
<td>0</td>
<td>n/a</td>
<td>15</td>
<td>Local</td>
</tr>
<tr>
<td>*Luni</td>
<td>13</td>
<td>Local</td>
<td>0</td>
<td>n/a</td>
</tr>
<tr>
<td>Small spiky cucumber (Kaimbe)</td>
<td>13</td>
<td>Local</td>
<td>0</td>
<td>n/a</td>
</tr>
<tr>
<td>Water melon</td>
<td>13</td>
<td>Local</td>
<td>0</td>
<td>n/a</td>
</tr>
<tr>
<td>Okra (pods)</td>
<td>13</td>
<td>Local and hybrid</td>
<td>0</td>
<td>n/a</td>
</tr>
<tr>
<td>Sorghum bicolor</td>
<td>13</td>
<td>Local</td>
<td>0</td>
<td>n/a</td>
</tr>
<tr>
<td>Sweet potato</td>
<td>3</td>
<td>Both local and hybrid</td>
<td>8</td>
<td>Both local and hybrid</td>
</tr>
<tr>
<td>Tomato</td>
<td>5</td>
<td>Both local and hybrid</td>
<td>5</td>
<td>Both local and hybrid</td>
</tr>
<tr>
<td>Rape</td>
<td>5</td>
<td>Hybrid</td>
<td>4</td>
<td>Both local and hybrid</td>
</tr>
<tr>
<td>Rice</td>
<td>2</td>
<td>Hybrid</td>
<td>7</td>
<td>Local</td>
</tr>
</tbody>
</table>
The Mthuzi farmers relied on a much greater diversity of indigenous and traditional crops, with noticeably more fruits. The focus group reported that they rely solely on their FMSS for the following crops: roselle, black jack, cat whiskers (*Cleome gynandra* L.), gallant soldier (*Asteraceae*), mustard, gould, okra, snot apples (*Azanza garckeana*), pumpkins, spiky cucumbers (three varieties), cassava, Irish potatoes (white fleshed, as opposed to orange), millet, cucumbers, rice, peppers, papaya, coconuts, lemons, Bambara nuts, hissing tree (*Parinari curatellifolia*), monkey oranges (*Strychnos sp.*), tangerines, musuku (wild loquat/*Uapaca kirkiana*) and other indigenous fruits – Mpondageya, Nthudza, Nthengere, Mbulumbunje, Katope, Nziru and Mpsipsa. This diversity is, however, fragile; for example, only one out of 18 farmers saved seed for tangerine, masuku, millet, and the leafy vegetable called cat’s whiskers.

We found less crop diversity in Nkulera, although the majority of farmers maintained a number of crops that were not found in Mthuzi, including the Kaimbe cucumber, watermelon, okra and sorghum bicolor.

(Sorghum bicolor is a variety of sweet sorghum that has a low yield in grains but the stalks are eaten in a similar way to sugarcane.) The fact that most of the farmers in this group were saving seed of these local crops suggests that a fair number of varieties exist, requiring further investigation. However, only one out of 13 farmers saved seed for sorghum, Bambara nuts and millet.

<table>
<thead>
<tr>
<th>Crop</th>
<th>Nkulera</th>
<th>Mthuzi</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. of farmers saving seeds</td>
<td>Sourced from</td>
</tr>
<tr>
<td>Papaya</td>
<td>3</td>
<td>Local</td>
</tr>
<tr>
<td>Lima bean</td>
<td>4</td>
<td>One farmer saves both local and hybrid; the rest save hybrid</td>
</tr>
<tr>
<td>Cassava</td>
<td>0</td>
<td>n/a</td>
</tr>
<tr>
<td>Irish potato</td>
<td>4</td>
<td>Local</td>
</tr>
<tr>
<td>Pepper</td>
<td>0</td>
<td>n/a</td>
</tr>
<tr>
<td>Bambara nut</td>
<td>1</td>
<td>Local</td>
</tr>
<tr>
<td>Cucumber</td>
<td>3</td>
<td>Local</td>
</tr>
<tr>
<td>Coconut</td>
<td>0</td>
<td>n/a</td>
</tr>
<tr>
<td>Lemon</td>
<td>0</td>
<td>n/a</td>
</tr>
<tr>
<td>Sorghum</td>
<td>0</td>
<td>n/a</td>
</tr>
<tr>
<td>Hissing tree (Parinari curatellifolia)</td>
<td>0</td>
<td>n/a</td>
</tr>
<tr>
<td>Millet</td>
<td>1</td>
<td>Local</td>
</tr>
<tr>
<td>Sorghum</td>
<td>1</td>
<td>Local</td>
</tr>
<tr>
<td>Chilli</td>
<td>1</td>
<td>Hybrid</td>
</tr>
<tr>
<td>Tangerine</td>
<td>0</td>
<td>n/a</td>
</tr>
<tr>
<td>Masuku (Uapaca kirkiana)</td>
<td>0</td>
<td>n/a</td>
</tr>
<tr>
<td>Cat whiskers</td>
<td>0</td>
<td>n/a</td>
</tr>
<tr>
<td>Sunflower</td>
<td>0</td>
<td>n/a</td>
</tr>
</tbody>
</table>

* Farmers indicated that they save these seeds, but in this context they mean the seeds and crops are collected from the wild.
It is interesting to note that in our discussions on wild vegetables, such as luni, roselle or blackjack, most farmers stated that they do not save seed, as they can reliably harvest from the wild, from season to season. However, when we listed crops in use and the source of the seed, all indicated that they save these wild seeds. In questioning this discrepancy it became apparent that farmers consider the wild to be an extension of their home seed banks, from where they can collect seed if they wish and broadcast the seed in a desirable place or simply harvest food from where it naturally grows.

Dwindling plant genetic resources in Malawi

Malawi’s dwindling agricultural biodiversity was recorded in a status quo report on plant genetic resources in Malawi compiled for the Food and Agriculture Organisation (FAO) and published in 2010 (Government of Malawi, 2011a). The report indicated that Malawi has an abundance of plant diversity, with an estimated 6,000 recorded species, of which 555 are known to be edible. However, there is immense pressure on and erosion of these resources, due to increasing population and related development needs, related loss of habitat and the promotion of conventional seed varieties that have displaced indigenous seed varieties. The report to FAO states that “mushrooming of improved varieties has contributed to loss of local crop varieties from farming communities” (Government of Malawi, 2011a: 8).

The FAO report pointed to substantial genetic erosion in finger millet, sorghum and wild rice, and claimed that some of the varieties that have been lost include: Kanjerenjere (one of the early maturing maize varieties that was identified in the FGDs), Kamchiputu (aromatic sweet potato) and Saopaalendo (a fast cooking bean variety); and most indigenous vegetables have disappeared from their habitats. It also reported under-utilisation of a number of crops that have been outcompeted by a selected few major crops. These crops include certain species of wild African finger millet (*Eleusine coracana* subsp. *Coracana*), Bambara nut (*Vigna subterranea*), sorghum (*Sorghum bicolor*), pearl millet (*Pennisetum glaucum*), mung bean (*Vigna radiate*), amaranth (*Amaranthus hybridus*), African cabbage (*Cleome gynandra*), air potato (*Dioscorea bulbifera*), yam (*Dioscorea rotundata*), Livingston potato (*Plectranthus esculentus*), moringa (*Moringa oleifera*), chickpea (*Cicer arietinum*), sesame (*Sesamum indicum*), chickpea (*Cicer arietinum*), sesame (*Sesamum indicum*), and winter squash (*Cucurbita maxima*) (Government of Malawi 2011a).

These plants represent a cornucopia of health, livelihood, abundance and age-old traditional knowledge about their cultivation and use that has great potential to increase food and nutrition security, if efforts were directed towards resuscitation, conservation and sustainable use. However, this treasure trove could potentially disappear altogether as the agenda for increased commercialisation of plant genetic resources through Green Revolution strategies is relentlessly pursued. There is currently a disconnection between nutrition policy, which seeks to diversify local nutrient intake through diversification of crops, and agricultural and seed policies, which are veering towards shrinking diversity, whether by design or unintended consequence.

Challenges identified

Challenges identified by farmers in both FGDs included; pest damage, caused by weevils during storage; declining yields, through recycling of hybrid seed; and seed consumption during hungry times, meaning that seed is not available at planting time. Some also noted that market dictates played a role in the seed they planted, for example, due to low market demand for sunflower and rapeseed, these crops were abandoned. In Nkulera, women said cassava was no longer cultivated because the children eat it before it can be taken to market. Children are told they may not eat various crops, like cassava or banana, because they are destined for the market; this suggests that the commonly held notion that farmers provide for household consumption and then sell surplus to the market may not always be correct. Instead, in some cases, it seems that the household receives what the market does not want, which has implications for household nutrition security.
While men and women acknowledged that men tend to focus on crops with commercial value, such as maize and tobacco, and women deal more with crops for household use, there was not a great difference between women and men regarding their seed practices, challenges and recommendations for improvement. In Nkulera, women worried that they “do not have much knowledge” about seed. However, this may be more an indication of the lack of value attached to women’s knowledge rather than a real lack of knowledge. Women are more likely to cultivate and utilise crops for their nutritional value, including indigenous fruits, tubers, vegetables and wild foods. Women, therefore play a key role in FMSS, but they do not have the confidence to share their knowledge and practices. The historical efforts in Malawi to promote improved and certified varieties as superior seed to farmers’ varieties and wild foods have resulted in the stigmatisation of farmer-managed seed and the devaluing of women’s knowledge and contributions.

Farmers were not forthcoming with suggestions on improving their current seed practices, and they were clearly not accustomed to being consulted on matters of seed in a context where input vouchers and seed handouts effectively negate choice. They indicated that they had no access to institutional support on seed, extremely irregular support from government extension services, and currently no support from development agencies, besides Kusamala. Capacity building and training, as well as increased awareness-raising of the politics of seed could assist farmers in formulating informed strategies to enhance their seed saving and production and their farming systems.

Grain storage facilities in Dowa: A starting point for seed banks?

Farmers participating in the FGDs were not engaged in any kind of community seed bank initiatives or cooperative activities involving seed, and, as mentioned earlier, this was due to low trust amongst community members. We did, however, identify two farmers’ associations – Mpasa Farmers’ Association and Chimwankhuku Farmers’ Association – that were using community grain storage facilities built by an NGO called Community Savings and Investment Promotion (COMSIP). The grain storage facilities are not community seed banks, but rather serve as common facilities where farmers can bring harvested grains (principally beans), have them weighed and recorded and sell them cooperatively for better bargaining power. The facilities also assist farmers by ensuring they save seed for the following year, as, once the seed is placed in the storage facility, they may only access it again at planting time.

The Mpasa Farmers’ Association manages group savings (money), has a communal milk storage facility and sells farmers’ crops and milk as a cooperative. There is a strong element of trust within the Association and clear internal regulatory mechanisms that underpin their collaborative activities. Mpasa members reported that at the beginning of the season ten people from the association were given 10kg of groundnut seed by a United States charity foundation, Heifer International, and were each required to return 20kg to the project. COMSIP also gave some members bean seed, but there was no stipulation on how much had to be returned. Some members received training in seed selection and saving by COMSIP. Farmers were taught to select the best seeds, bag them and bring them to the grain storage where they are weighed and records are kept. Farmers save some seed for the next planting season and sell the rest. They indicated this process could be repeated twice before needing to refresh seeds. Farmers commented that if they continued to recycle beyond this, yields declined. At that time,
they had not been advised if either of the organisations would be bringing seed again for the next season.

This seems to be a fairly typical arrangement regarding seed: that it is acquired in an ad hoc fashion from year to year and farmers take whatever is on offer by various groups. Development agencies and government projects that supply farmers with seed operate on the assumption that supplying subsidised seed and inputs, sometimes with a guaranteed market, will result in commercially viable farmers who will be able to buy their own inputs in future. This is the explanation that was given to Mpasa Association members. Additionally, they remarked that they were consistently given the message that their own seed was not valuable and the concluding remark from one of the farmers was, “We are told that local varieties are not important but I use local seed. I don’t need a lot of fertiliser. Your coming here gives us confidence to use our local varieties.”

Very close by in Chimwankhuku another community grain storage facility is located, where a local cooperative stores beans, maize, soya, groundnut seed and tobacco. A committee manages the facility and members may only withdraw at planting time, which members appreciated because, “It means that we can’t eat it when we run out of food, so we have seed available at planting time.” Members found that they can negotiate better prices when selling as a group. They noted that seed treatment to prevent weevil infestation and keeping rodents out of the storage posed the greatest challenges.

COMSIP also supplied this group with bean seeds. Each of the 45 members paid 5,000 kwacha for 10kg of beans plus five bags of fertiliser. They were trained to select healthy beans and separate them according to size. Farmers purchased additional fertiliser and pesticides. COMSIP’s stated intention was that members should make enough profit to buy again the following year. COMSIP indicated that they would supply beans, soya or groundnut seed on the same basis for the following season. There is no indication what varieties the seed might be but it is highly likely that it is certified seed.

Farmers at both locations were surprised and pleased to hear that we valued their local varieties and that we believed they should be supported in using them more effectively. “You don’t want us to be slaves,” exclaimed one farmer. Two farmers (both women) said they grow local maize varieties, but they were only doing so because they have no access to improved varieties. In response to a question on the difference between local maize and improved varieties, farmers from the group explained that local varieties produce better quality, better taste and a bigger quantity when milled and produce better in poor quality soil. There was a peal of laughter from the entire group after this description as everyone present realised that the women had initially said that they only plant local maize because they cannot access certified seed, but then went on to list many superior qualities of local maize varieties.

However, certified/improved varieties are highly prized because they are fast maturing and yield more. “I feel proud when I fill many bags,” said one farmer. The maize produced from certified seed sells better when the grain is not weighed on a scale but rather sold by the bucket, because although the certified seed produces higher yields, the grain is lighter than the local varieties. The group concluded that the improved varieties are not good to consume and are cultivated primarily for the market.

Farmers explained that local seeds have been displaced by hybrids and that it is important to keep their seeds otherwise the children sitting amongst us will never know them. “We had many varieties of groundnuts before, very tasty, but we no longer have them”, said one farmer. They were interested to learn about the PGRC and its collections of indigenous and traditional varieties, and asked why these resources are not advertised in the same way as improved varieties. Members present said they were interested in accessing groundnut varieties (especially one called Chalimba) as well as enhancing local cowpea varieties and enhancing early maturing varieties of local maize. “Red maize porridge tastes very good,” they agreed. In closing, one of the farmers asked us, very surprised, “You are saying we must keep our local varieties? Other
organisations have come here and said these are useless to us.”

**A failed seed bank initiative**

During our first meeting in Nkulera we happened to pass by a structure that had previously served to store grain for the community, but that had subsequently been taken over as a dwelling. We were interested to know more about why it was built and what farmers’ experiences with the facility were.

We learnt that the structure was built by Concern Worldwide – an international humanitarian organisation from Ireland that has worked in Malawi during the food crises since 2002. In 2006 Concern Worldwide started its Programme for Attainment of Rights and Livelihoods (PARL), which was developed to build upon their initial emergency response work in the country. It aimed to “contribute towards the achievement of adequate and sustainable access to and control over resources by the poor and vulnerable households, so as to attain their livelihood rights without undermining their natural resource base” (Concern Worldwide, 2012). Work on community seed banks was part of this programme and was implemented to address concerns regarding the promotion of hybrids that were displacing local varieties.

According to project manager, Sithu Tsifanyalo, the project distributed OPV maize seed, as well as soya, groundnut and bean seed. The maize seed was sourced from SeedCo and Pannar, bean seed from a local agri-input company called Kulima Gold and groundnut seed from National Smallholder Farmers’ Association of Malawi (NASFAM). Farmers were trained in seed selection and storage. Concern Worldwide built community storage facilities in some areas, rules were set to regulate deposits and withdrawals and a register was kept. It is not clear how many such facilities were built or how many communities took part in this programme, as documentation on the project is not readily available. Farmers that received seed were required to pay back an amount of seed after harvest. However, most farmers did not pay back, especially maize and bean seed.

When the project funding ended, there was no proper handover to community members and district authorities were also not well versed in the project, resulting in the initiative’s demise. In most instances the storage facilities were taken over for other purposes by community members or tribal authorities and no longer operate as community storage facilities. The initiative suffered from a number of problems, including having to weather a particularly turbulent time in the history of the implementing agency, which resulted in high turnover of staff with lack of handover (Concern Worldwide, 2012), lack of community involvement in project design, lack of buy-in and ownership on the part of communities and, in some cases, low levels of trust amongst community members.

Although this project is no longer running, Concern Worldwide is currently implementing a programme under their Livelihoods, Health, Nutrition and Gender unit, focusing on nutrition and kitchen gardens. They are promoting cultivation of local vegetables and OPV maize seed, with a view to promoting better nutrition, as well as ending the trend of seed handouts. The unit has sourced luni and amaranth seed from Bunda College Crops Department and also source materials from the International Maize and Wheat Improvement Centre (CIMMYT).

In addition, Concern Worldwide is promoting the cultivation of orange fleshed sweet potato, in collaboration with the International Potato Centre (CIP), with the aim of creating decentralised vine multipliers. For this project they work with “mother farmers” who do research in their plots on six potato varieties, while Concern Worldwide monitors and oversees data recording. The mother farmers also act as farmer-led extension officers. Other farmers within the project are multipliers and each of them works with three potato varieties, which they bring to Concern Worldwide, where the health of the vines is assessed. Farmers

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4. Personal interview with Sithu Tsifanyalo, project manager, Concern Worldwide, 12 April 2016
receive 500 kwacha for 50 bud sticks and also sell at trade fairs.

Concern Worldwide is also planning to work with yellow cassava and wanted 50 bud sticks to begin with. However Chitedze Research Station did not have enough material to supply them, so they will need to wait until the resources are ready.

What is clear is that programmes and projects that are working to improve community health and nutrition have a greater appreciation of indigenous varieties and related knowledge, better links with technical institutions working with these materials and potentially a keener interest in the enhancement of FMSS.

Potential support for FMSS

**Government and civil society collaboration**

The mandate of the Malawi PGRC is to conserve agricultural biodiversity. Within the institution we found that there is a passion to promote repatriation of lost germplasm to communities and support on-farm seed conservation for especially early maturing local varieties of maize, as well as millet, sorghum, cowpea, yam, air potato, Livingstone potato, Bambara and others. However, this work is not supported by government policy, public resources or the extension system – the latter being crucial in linking the PGRC with farmers and providing ongoing support and technical training. According to Dr Lawrent Pungulani, Director of the PGRC, recognising, providing support for and strengthening indigenous and farmers’ varieties has not made it into the NAP and that it would be “a tall order to convince some elements of the importance of community seed banks and seed conservation in terms of improving nutrition”.5 Dr Pungulani felt strongly that the seed industry has made a convincing evidence-based case for the performance and impacts of improved varieties. He said advocacy for farmers’ varieties remains theoretical and that research on the value and performance of traditional seed, in terms of nutritional value, climate change resilience, yields etc. just doesn’t exist. “We have no research, no trials, no evidence,” he said.

While the PGRC has a mandate to conserve agricultural biodiversity, it has no resources to work on repatriation of lost varieties. However, Dr Pungulani indicated that they would relish any opportunity to do so and this is possible when other organisations participate in collaborative efforts. In the past, the PGRC has worked on community seed banks in collaboration with the Biodiversity Conservation Initiative – which helped with technical backstopping – and with the NGO, Circle for Integrated Community Development (CICOD) in Dowa to do training in on-farm seed and crop management. Edward Thole, project manager at CICOD, explained that from 2006 to 2011 the organisation had participated in a community biodiversity management and conservation project that was implemented in conjunction with several organisations.6 CICOD had helped with the conservation of a number of crops, including African potatoes and Bambara nuts. They had worked closely with the PGRC to access seed and planting material for repatriation into community farming systems. Help had been sought from the PGRC with the multiplication of particularly difficult species, such as the African potato. CICOD had also collected seed from the community. Bunda College had assisted communities with training on aspects of plant breeding, as well as the verification of authenticity of varieties being used in the project. In addition, the Centre for Environmental Policy and Advocacy (CEPA) had conducted training with farmers on farmers’ rights and seed systems, and the Department of Research and Extension Services had also been closely involved in the process.

5.  Personal interview with Dr Lawrent Pungulani, Director, PGRC, 12 April 2016
6.  Personal interview with Mr Edward Thole, project manager, CICOD, 13 April 2016
In a similar way to other projects that we had heard of, storage structures had been built in some of the communities and Chitedze research station had given technical support on the specifications for the structures, as well as community training on selection. CICOD had followed the model of farmers returning seed “with interest” and farmers had exhibited and traded their varieties at agricultural shows and had explained how they had developed their own varieties. Mr Thole expressed that repatriation of lost varieties and access to medicinal plants were highly appreciated by the farmers they worked with. These seed banks had also been brought into the CICOD projects that focus on nutrition education, and had been promoted at seed and food fairs. According to Mr Thole, these seed banks are still running, even though the project has come to an end.

Some of the challenges noted by Mr Thole included access to the quantities of materials required to support commercial production, as well as to a range of technical expertise. In addition, the “time and devotion” necessary to propagate seed and keep it safe sometimes mitigates against seed saving and therefore farmers prefer to buy whatever is available, keeping only small amounts for food crops, such as sweet green maize or vegetables.

Both the PGRC and CICOD claimed that showcasing their materials at agricultural shows increases demand for these materials and their exhibits tend to generate a lot of discussion between farmers who are eager to talk about crops and varieties they used to have. Dr Pungulani pointed out that this indicates interest, although resources have not been prioritised or committed to ensure repatriation or utilisation of these crops in farmers’ fields. Ensuring sufficient material is available on demand is, therefore, a challenge.

These kinds of collaborations are already happening in isolation and could benefit from being linked to other similar initiatives in other parts of Malawi and the region. This can greatly contribute to the recognition of the importance of FMSS and support for changes in policy aimed at strengthening and supporting FMSS.

**District support for FMSS**

The District Head, as well as the head of the crop development and agribusiness manager at DADO were very open and approachable, and, indeed, many stakeholders interviewed confirmed that working relationships with DADO are strong and integral to their work. In many cases the district office assists development organisations with identifying lead farmers for projects and communities in most need of development assistance. While DADO does not have a strong orientation toward acknowledging or supporting FMSS, it was clear that they are open to collaborating and partnering with organisations and farmers. However, extension services are extremely stretched and farmers in the FGDs indicated that they rarely see public sector extension officers.

DADO Crops Department has six divisions – cereals, tobacco, legumes, farm mechanisation, crop protection and cotton. The office partners closely with the private sector, working in tandem on in situ demonstration plots and joint field days for farmers. They source improved seed from Pannar, Syngenta, World Vision and KL Malawi. Extension workers are also tasked with providing chemicals to farmers when there are pest outbreaks. They have a government programme which distributes metal silos to farmers for seed storage.

In terms of farmer involvement in decision-making regarding seed enhancement, the DADO office felt that farmers have little role to play, given the scientific nature of developing hybrids. Once new varieties have been developed, farmers are invited to trial and choose which varieties should be multiplied. Farmers may also be involved in seed multiplication. When asked what role farmers can play in breeding, DADO responded that their role is to continue maintaining their own varieties, which may then serve as germplasm for breeders, who can then release new, improved varieties.

DADO reported that their office was distributing sweet potato vines, cassava
and yams for the first time to help combat drought and hunger. They receive these genetic materials from Bunda College of Agriculture. These crops are also promoted at farmer field days, along with demonstrations on processing and preparing them. Overall, however, it is clear that there is limited support for farmers to work on and develop their own seed varieties, or even to be involved in formal processes of seed R&D or multiplication. On the other hand, there is some recognition that farmers do play a role in maintaining diversity and even some willingness to explore this further.

**Nutrition, HIV and women**

On-the-ground activities already utilising indigenous resources and traditional knowledge are happening within the context of projects to promote nutrition to deal with the high rate of malnutrition in Malawi, as well as in HIV/AIDs programmes. It is apparent that these projects have already made links with technical institutions to assist with repatriation of lost varieties, multiplication and technical backstopping.

There is a high degree of political will to address nutritional issues in Malawi. One of the aims of the NAP is to promote the “production and utilisation of diverse nutritious foods, in line with the National Nutrition Policy and Strategic Plan (NNSP)”.

The NNSP (2007–2015) has been reviewed and is currently awaiting approval for dissemination. This plan falls within the ambit of the Department of Nutrition, HIV and AIDS, with the multi-stakeholder body, the National Nutrition Committee, being responsible for implementation. This multi-stakeholder platform is replicated at a decentralised level, including District Nutrition Coordination committees with district nutrition focal persons, Village Development Committees and Community Leaders for Action on Nutrition groups (Scaling Up Nutrition Malawi, 2016).

One of the strategies included in the NNSP is to promote the production and consumption of indigenous foods with high nutritive value and other foods from the six food groups for varied and diversified diets. Activities toward this end include: documenting indigenous foods and their availability in various ecological zones and times of year; identifying sources of seed for highly nutritive foods; supporting seed multiplication centres; developing related community training materials; holding fairs and demonstrations on food production, preparation and nutritional choices; and advocating for agricultural production systems that promote diversity (Government of Malawi, 2007).

The Secretariat for Nutrition sits within the Office of the President and Cabinet, and, in order to mobilise resources for the NNSP, in 2011 the government of Malawi joined Scaling Up Nutrition Malawi (SUN), a global movement of 57 countries focusing on nutrition, supported by the United Nations, civil society, business and donor networks (Scaling Up Nutrition Malawi, 2016).

**Conclusion**

This paper represents the findings of a scoping exercise carried out by the ACB in conjunction with Kusamala Institute of Agroecology. The goals of the exercise were to assess the status quo of FMSS in Nkulera and Mthuzi villages of the Dowa District, and identify potential partnerships to envision and implement new strategies to support FMSS in Malawi.

We found that, although farmers rely heavily on their FMSS for nutritional security and to sustain them, there is very little recognition by government or development agencies of the importance and need to support FMSS. The Green Revolution agenda is central to the agriculture thrust in Malawi, which is in the throes of modernising its seed and securing private commercial interests in agricultural input supply, especially seed. The draft seed policy intrinsically supports an externally market-driven approach to seed development and expressly takes seed development away from farmers: farmers are excluded from the prioritisation, breeding and production process. The draft seed policy is embedded in veiled promises to farmers for market access, which will, in all likelihood, come from outside the farmers’ locality. The needs of the external markets – uniformity of product; variety development for industrial processing purposes or for animal feed in industrial (large-
scale, standardised, disembedded) livestock systems; or yield, for economies of scale – will utterly override local farmers’ varieties and variety development priorities. Farmers’ varieties that have been grown over long periods and adapted to the local conditions are being pointedly ignored in favour of external interventions.

This comes at the cost of the important but neglected farmers’ activities in maintaining agricultural biodiversity, local varieties and more secure means of ensuring access to seed from season to season. Along with its Green Revolution strategy, the government is sending a strong message to farmers and development agencies that farmer-managed seed systems are part of the problem in Malawi – contributing to poverty, hunger and the spread of inferior and disease-ridden germplasm. The results of this approach is a loss of respect for the value of Malawi’s abundant and nutrient-rich agricultural biodiversity, and the deskilling and devaluing of smallholder farmers’ and women’s knowledge.

There is a need for holistic policymaking. Linkages need to be made with strategies to restore Malawi’s soil, degraded after decades of overuse of synthetic fertilisers; a damning legacy from FISP. Similarly, linkages must be made with nutrition security policies to bring about coherence in policymaking and implementation. However, our central recommendation is for policy and institutional support of agro-ecological farming systems, with farmer-managed seed systems at their core.

Malawi should be open to discussions on implementing key strategies for food and dietary diversification at the community and household levels. This shift, envisaged in the nutrition policy, but sadly relegated to social welfare status, as opposed to featuring as the centrepiece of the seed policy, must include:

- the promotion of traditional foods and home gardens and the raising of small livestock;
- improved preservation processes and storage facilities for fruits and vegetables, to reduce waste, post-harvest losses and the effects of seasonality;
- the strengthening of small-scale agro-processing and food industries; and
- education to encourage the consumption of a healthy and nutritious diet.

There are alternative ways to implement subsidy programmes, and Mauritius provides an inspiring example in this regard. Mauritius uses subsidies to help small-scale farmers (by reducing input costs) and increase productivity (through improved soil health). It has linked a compost subsidy into longer-term sustainable development goals, by attempting to mitigate the damage caused by the large-scale, historical application of chemical fertilisers, and to shift farmers towards more ecologically sound production methods. The compost subsidy scheme also fits within a broader attempt to solve environmental problems, such as reducing the amount of organic waste that ends in landfills.

The time has come for discussions on the seed sector to include approaches that integrate farmers – particularly small-scale and women farmers – into seed enhancement and production, and develop contextually appropriate quality control systems based on farmer priorities to offer a more sustainable and inclusive approach than a private sector, profit-driven approach. These discussions must include decentralised R&D and extension support to build on farmers’ existing varieties, practices and priorities in their local contexts. This could facilitate a more bottom-up approach to development, where household and local nutrition and soil health are prioritised as drivers of development for smallholders in Malawi.
Farmer-managed seed systems in Dowa, Malawi: A legacy of eroded confidence and agricultural diversity after decades of Green Revolution implementation

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