



FNI REPORT 5 | 2019
REGINE ANDERSEN

The impact of the Lead Farmer Extension Approach implemented by the Development Fund of Norway in Malawi



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The Fridtjof Nansen Institute is a non-profit, independent research institute focusing on international environmental, energy and resource management. The institute has a multi-disciplinary approach, with main emphasis on political science and international law.

Abstract

The Development Fund of Norway (DF), in collaboration with local partners in Malawi, has been implementing different programmes, using the Lead Farmer Extension Approach as the main method. To analyse the relevance, impact and sustainability of the Lead Farmer Extension Approach, the DF commissioned this evaluation. The DF Lead Farmer Extension Approach has proven highly relevant to the needs of the target groups and the policies of the government, as it addresses the most pressing challenges: hunger, poverty and climate change. More than 60% of the target groups have benefitted from the interventions, and the percentage is rising. Yields have increased significantly, and many farmers have also managed to expand their production areas. The effects for food security have been impressive and crop diversification has contributed to better nutrition. Incomes have increased. Local soils have improved in organic content, fertility, structure, texture and water-storage capacity, and crop production has become more resilient to the adverse effects of climate change. Crops grow stronger and bigger and can better resist pests and diseases. Agroforestry and the restoration of tree cover have halted soil erosion. Women have reduced workloads and feel empowered. HIV/AIDS-affected households and farmers with disabilities find great encouragement. The evaluation offers recommendations on how the DF and its partners can consolidate their activities for better quality. It stresses that achieving lasting changes will need more time than foreseen. Specific recommendations concern how crop genetic diversity – the ‘missing link’ in the DF approach – could strengthen climate-resilient farming and further diversify production to improve nutrition. Recommendations are also provided as to how DF and its partners could expand their leadership role in agricultural extension in Malawi.

Acronyms and Abbreviations

| | |
|--------|--|
| ADC | Area Development Committee |
| AEDC | Agriculture Extension Development Coordinator |
| AEDO | Agriculture Extension Development Officer |
| AICC | African Institute for Corporate Citizenship |
| BCI | Biodiversity Conservation Initiative |
| CA | Conservation Agriculture |
| CSA | Climate-Smart Agriculture |
| DADO | District Agriculture Development Officer |
| DAECC | District Agriculture Extension Coordinating Committee |
| DAES | Department of Agricultural Extension Services, MoAIWD |
| DAESS | District Agricultural Extension Service System |
| DF | Development Fund, Norway |
| EPA | Extension Planning Areas |
| F | female |
| FF | Follower Farmer |
| FFS | Farmers Field Schools |
| FYF | Find Your Feet |
| LEAD | Leadership in Environment and Development in Southern and Eastern Africa (SEA) |
| LF | Lead Farmer |
| LUANAR | Lilongwe University of Agriculture and Natural Resources |
| M | male |
| MAZA | Malawi – Zambia Programme of the DF |
| MAMO | Malawi – Mozambique Programme of the DF |
| MZADD | Mzuzu Agricultural Development Division |
| MoAIWD | Ministry of Agriculture Irrigation Water and Development (Malawi) |
| MUSCCO | Malawi Union of Savings and Credit Cooperatives |
| NASFAM | National Association of Smallholder Farmers of Malawi |
| NEAL | Network for Enhanced Livelihoods |
| NfYD | Network for Youth Development |
| SA | Sustainable Agriculture |
| SALFP | Sustainable Agriculture Lead Farmer Programme of DF |
| SDGs | Sustainable Development Goals |
| TAPP | Trustee of Agricultural Promotion Programme |
| TLC | Total Land Care |
| ToR | Terms of Reference |
| VDC | Village Development Committee |
| VSLA | Village Savings and Loan Association |
| YWCDi | Young Women Can Do It |

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In the end, of course, the responsibility for this report and any shortcomings remains with me.

Oslo, 10 May 2019

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Summary

The Development Fund of Norway (DF), in collaboration with local partners in Malawi, has been implementing different programmes, using the Lead Farmer Extension Approach as the main method. To analyse the relevance, impact and sustainability of the Lead Farmer Extension Approach, and to examine matters related to effectiveness, the DF commissioned this evaluation. It builds on a review of relevant documents and literature, case studies from two representative programme sites in Malawi and interviews with a broad spectrum of stakeholders.

Malawi's government extension services face major challenges: the number of extension workers has been falling, and the government is unable to fill most vacant positions, due to limited resources. Around 70% of the positions at the Extension Planning Area level are vacant. The Lead Farmer extension, as implemented by the government and various NGOs, has the potential to assist in bridging the gap, although it cannot replace the extension workers.

The DF Lead Farmer Extension Approach is a methodology for promoting sustainable, climate-smart agriculture technologies, thereby boosting productivity and improving food security, in line with government policy in Malawi. With this approach, the DF and its partners have decisively contributed to further developing and pioneering the Lead Farmer model in Malawi.

The DF Lead Farmer Extension Approach has proven highly relevant to the needs of the target groups and the policies of the government, as it addresses the most pressing challenges: hunger, poverty and climate change. Already after 4–5 years, more than 60% of the target groups have benefitted from the interventions, and the percentage is rising steadily. Yields have increased significantly – in some instances, more than doubled. Thanks to new labour-saving practices and increased income, enabling purchase of fertilizers, many of the participating farmers have also managed to expand

their production areas. The effects for food security have been impressive. Moreover, crop diversification has contributed to better nutrition. Thus, food and nutrition security has been substantially improved and incomes have increased, not least through facilitated access to markets. Through the pass-on system, many farmers have received livestock, and can sell some of the offspring, thereby earning some extra income. By investing in village savings and loans, further income is achieved, enabling farmers to meet household needs and send their children to school. Some could also afford to buy iron sheets for roofing or invest in fertilizers or livestock.

Local soils have improved greatly in organic content, fertility, structure, texture and water-storage capacity, and crop production has become more resilient to the adverse effects of climate change. Crops grow stronger and bigger and can better resist pests and diseases. Agroforestry and the restoration of tree cover have halted soil erosion.

Women now have substantially reduced workloads thanks to the new techniques, including fuel-saving stoves. They report that they feel empowered, thanks to higher recognition and income, and because they have now learned to speak out. HIV/AIDS-affected households are integrated in programme activities, and farmers with disabilities find great encouragement and support through the programmes.

In terms of effectiveness, goal achievement has focused on outreach. However, the targets set were overly ambitious as compared to available resources, and this may have affected the achievements in terms of the adoption rate of the new technologies and benefits in terms of e.g. increased yields, as well as the monitoring of results. Here it should be noted that the programmes evaluated have been implemented for a relatively short time, and that the adoption rate and realization of benefits may improve in the years to come. It is still too early to measure the full impact.

Despite the challenges noted here, the Lead Farmer Extension Approach has reached out to an impressive number of beneficiaries, and with a relatively high level of quality. Lead Farmers seem to be performing their tasks very well within their possibilities but may have limited capacity due to the short training they have had, as well as the lack of pushbikes and pass-on livestock. They have collaborated closely with local structures to maximise the potentials. This collaboration has proven useful in terms of institutional and professional backup. There is scope for improving this support structure through more capacity building, and for linking up with other approaches to agricultural extension in Malawi, such as digital knowledge-sharing platforms and Farmers Field Schools.

There have been several unintended impacts. One negative impact can be noted with regard to reduced agrobiodiversity and the neglect of indigenous knowledge. Here there are potentials to improve the performance of the Lead Farmer Extension Approach, as the DF has longstanding experience in community-based agrobiodiversity management from other programmes. One positive impact is the significant number of farmers who have not been involved as Lead or Follower Farmers, but who have learned from them informally, thereby benefiting from the programme. Another positive impact is that Lead Farmers are serving as information brokers in their communities, disseminating important information from ADCs, VDCs, AEDCs and AEDOs.

The DF Lead Farmer Extension Approach has been carefully planned and crafted to ensure sustainability, so activities are likely to continue also after the end of the programme – but the scale and quality are uncertain. To ensure sustained progress, more effort is required to correct and adjust the course, to safeguard long-term sustainability with quality as well as outreach. Thus, it is still too early to phase out the programme. A four to five years extension would be required to ensure long term sustainability. There is also a need to reconsider the practice of reaching out to as many EPAs as possible by covering only parts of the EPAs. It is recommended to concentrate on fewer EPAs, thereby covering all sections in each of the selected EPAs. However, it is important to avoid overlap with other NGOs, and to ensure that efforts are well coordinated.

The Lead Farmer Extension Approach is well

anchored in local structures and in the agricultural extension services, with clear mutual benefits. Representatives consulted for this report stressed that they intend to continue to support the Lead Farmers also after the end of the programme.

The DF Lead Farmer Extension Approach has the potential of becoming a beacon in the Malawian extension services. However, everything hinges on the quality of the provided services: this is high in view of the limited resources that have been invested, but still not sufficient to achieve sustained benefits for all those involved. Targets have been set too high, and the timeframe has been too short. A greater focus on quality, within a longer time frame, could enable more farmers to experience the benefits of the model, as well as maximising the benefits already achieved. Ultimately, sustained impacts could be safeguarded.

The evaluation offers recommendations on how the DF and its partners could consolidate their activities for better quality, under the motto ‘less is more’. It stresses that achieving lasting changes will need more time than foreseen in the programmes evaluated here. Further, this report provides recommendations with regard to training for quality and how equipment could be used as incentives. Specific recommendations concern how work on crop genetic diversity – the ‘missing link’ in the DF approach – could strengthen climate-resilient farming and further diversify production to improve nutrition. Finally, this evaluation recommends connecting to other extension approaches, to maximise synergies and it points out how the DF and its partners could expand their leadership role in agricultural extension by coordinating the NGOs involved in extension work and assist in strengthening the government extension services and coordination.

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1. Introduction

The Development Fund of Norway (DF), in collaboration with local partners in Malawi, has applied the Lead Farmer Extension Approach in different programmes, including the Malawi and Zambia (MAZA) programme (2012–2016), Malawi and Mozambique (MAMO) programme (2017–) and the Sustainable Agriculture Lead Farmer Programme (SALFP) (2014–April 2019). The DF has commissioned an evaluation to analyse the relevance, impact and sustainability of the Lead Farmer Extension Approach, and to examine issues related to effectiveness.¹

1.1 Why this evaluation?

The Lead Farmer Extension Approach applied by the DF and its partners in Malawi is a promising model for reaching out to many farmers. It uses simple methods to mitigate and adapt farming to the effects of climate change, to improve soils, prevent soil erosion, and ultimately to increase agricultural productivity and food production.

The extension services in Malawi have a high vacancy rate, estimated at over 70%. The Lead Farmer model is one of several approaches in agricultural extension aimed at filling this gap. The model is not a new phenomenon. Its roots can be found in the colonial era, when farmers who were better off and were found to be innovative, were trained to act as demonstrators for other farmers. They were called Master Farmers. After independence, the Master Farmer approach was changed into a Progressive Farmer approach with a view to reaching out to more small-scale farmers than possible through agricultural extension workers. The Lead Farmer model represents a modification and further development of the Progressive Farmer Approach and is promoted by the Government of Malawi.

The Lead Farmer Extension Approach, as developed and implemented by the Development Fund (DF) and its partners in Malawi over the past more than 15 years is a methodology for promoting sustainable and climate-smart agriculture technologies, thereby boosting productivity and improving food security

in line with the government policy. With this approach, the DF and its partners have contributed decisively to further developing and pioneering the Lead Farmer model in Malawi, including developing and publishing a comprehensive training manual in 2014, the first in Malawi, which was approved by the Ministry of Agriculture, Irrigation and Water Development (MoAIW). The DF training manual has informed the guidelines developed by the MoAIW on the Government Lead Farmer Approach; the manual is also used by several other NGOs. Thus, the DF, with its partners, holds a prominent position in the promotion of the Lead Farmer model in Malawi, through its own approach. Developed so as to be in line with government policy, this has become an approach on which the government in turn relies.

The first intervention in terms of the DF's Lead Farmer Extension Approach took place in 2003. The approach was gradually developed further; as of 2019, there are two programmes – the MAMO Programme and the SALFP – aimed at promoting the Lead Farmer Extension Approach and thereby reaching out to 140,000 farmers in Malawi. Notable achievements have been reported in terms of adoption rates as well as benefits. It is time to consider the lessons learned, with a view to carving out the future direction of the Lead Farmer Extension Approach for the DF and its partners in Malawi. That, then is the background for this evaluation.

The DF has commissioned an impact evaluation of its Lead Farmer Extension Approach in extension, to examine the implementation and impact of the Lead Farmer Extension Approach across the DF programmes (MAZA, MAMO and SALFP), focusing on the period from 2014 to date, and covering relevance, effectiveness, impact and sustainability.

According to the Terms of Reference (ToR), the evaluation should provide recommendations as to how the work on extension through Lead Farmers or in other ways could be improved. Special emphasis was to be placed on gender aspects, to inform further work on promoting the participation of women as Lead and Follower Farmers (LFs and FFs, respectively).

¹ Efficiency was also covered in the ToR, but due to the time limitations set for this evaluation, this topic is not dealt with here.

The recommendations were to set out specific, action-oriented measures to guide the DF's work as to what needs to be done more of, less of and/or propose other changes to its extension approach – and identify/explore possible areas for further learning.

The DF supplied a set of evaluation questions in the ToR for the evaluation. Responses to these questions form the backbone of this report.

Main users of the evaluation are the DF and its implementing partners, collaborating partners in the Network for Enhanced Livelihoods (NEAL)² in Malawi, and the Royal Norwegian Embassy, which will use the lessons from the evaluation to guide the development of future projects and programmes.

1.2 Method

The evaluation is based on qualitative methods, an approach well suited for examining analytical questions like those posed by the DF. Available statistical material has been taken into consideration as appropriate. Case studies from two representative programme sites provide the foundation for the analysis: Chiwamba in Lilongwe Rural, and Bwengu in Mzimba North. With information from the other sites, the conditions are established upon which the findings may have relevance for other sites ('casing'). Contextual information has been collected so as to situate the case studies within relevant policies, structures and processes across scales up to the national level.

Data collection has involved document and literature review. The documents include plans, progress and evaluation reports and other documentation relating to the programmes from the DF, and other relevant evaluation reports concerning agricultural extension in Malawi. The literature includes research reports, articles and summaries from the quite comprehensive research on extension services in Malawi. See attachment B for a list of documents and literature.

Data collection further encompasses semi-structured interviews. Altogether 200 informants in Malawi were consulted (99 women and 101 men), in the form of key informant and focus group interviews. Some persons were consulted more than one time. Key informant interviews were conducted with DF partners; with officials from the government extension service at

various levels; other relevant officials, also at ADC and VDC levels; and observers/researchers. Focus group interviews were conducted with Lead Farmers and Follower Farmers, with gender mixed groups and separate groups for women and youth in addition to that.³ Interviews often took form of discussions aimed at exploring the issues raised. All together 137 farmers were consulted: 74 female and 63 male. See attachment C for a list of interviewees.

In connection with the case studies, Lead and Follower Farmers were visited on their farms. Presenting their farms, they showcased the technologies they were applying and explained their experiences with them. They also described how the transformation had affected their lives in terms of food security, livelihoods and living conditions. See attachment A for these interviews.

All interviews were recorded in the form of memos, and pictures were taken at the farms. Group photographs were taken of all focus groups interviewed.

Debriefings at the case study sites and with DF and partners in Lilongwe have been an important source of validation of the information. Also, the DF, its partners and experts in Malawi have been invited to comment on the report. Their contributions are highly appreciated.

1.3 Structure of the report

The evaluation report starts out with the context: the situation of agricultural extension services in Malawi. As the Lead Farmer Extension Approach is a response to this situation, it is useful to take this as a point of departure. On this background, the key components of the Lead Farmer Extension Approach are explained, before turning to the case studies. Key findings from Chiwamba and Bwengu are presented, with emphasis on the information provided from Lead Farmers and Follower Farmers, women in both groups, youth groups (in Chiwamba), extension workers and members of ADCs and VDCs. On the background of the literature and document review and the case studies, the analysis is developed, following the topics and questions provided in the ToR. Here conclusions are drawn as to relevance, effectiveness, impact and sustainability. Finally, recommendations are derived from the analysis. Illustrative presentations of farm visits are provided in attachment A.

² For more information about NEAL, see: <http://www.bunda.luanar.mw/pco/neal.php>

³ Youth groups were consulted in Chiwamba, but not in Bwengu.

2. Setting the scene: Extension services in Malawi

The extension services in Malawi is diverse and rich in terms of approaches but faced with comprehensive and multi-faceted challenges. A special feature is that Malawi extension service has been the subject of extensive research. Highly qualified experts have been involved, providing valuable analyses. The following brief overview is based on Chiyu and Ragasa (2018), Kakota et al. (2017), Masangano et al. (2016), Masangano et al. (2017), Ragasa et al. (2019), Ragasa (2018), Ragasa and Mazunda (2017), Ragasa and Chiyu (2017), Ragasa et al. (2017), Ragasa et al. (2015) and on interviews with experts and officials in Malawi (see list of interviewees in Annex C).

2.1 The situation of the government extension services

The government extension services are facing great challenges, as the number of extension workers has been falling over the last years, and the government has not been able to fill most vacant positions, due to limited resources. Around 70% of the positions at the Extension Planning Area level are vacant.

Education to become an extension worker has been improved in recent years, enabling the students to get a diploma. This was intended to strengthen the extension services, but in practice extension workers with diplomas do not want to live in rural areas under poor conditions, often with no electricity. They prefer to stay in towns or cities and travel to their sites, even when there is housing available for them where they work. This has meant that extension workers are no longer readily accessible, as they often reside outside the areas for which they are responsible.

Each extension worker has at average more than 2000 farmers to follow up, often without a motorbike to reach them. In addition, extension workers have responsibilities related to other government programmes. On top of this, there are many actors involved in the extension services in Malawi, with their own expectations as to the government

extension services in terms of coordination and follow-up. These extension service providers are defined as all organizations whose main activities include providing farmers and farm households with information on agriculture (including crops, livestock, fisheries, postharvest concerns, markets, and natural resources), rural livelihoods, or food and nutrition security (Ragasa, 2018:2). Catherine Ragasa found that there were 120 non-state extension service providers in 15 sample districts for a study she conducted (ibid.). Thus, extension workers often have to deal with a large number of actors, who may be contributing to the extension services, but who also take up their valuable time.

2.2 Coordination of non-state extension service providers

The vast number of service providers in agricultural extension in Malawi is a result of the agricultural extension policy adopted in 2000. Non-state service providers were invited to help in meeting the huge demand for extension services which the government was not able to meet.

However, the quality of the services provided is sometimes, perhaps often, a big problem, as many service providers lack the required capacity and knowledge. They may apply very different technologies, sending different and sometimes conflicting messages. Also, they may have different norms, e.g. as to whether Lead Farmers should be compensated and/or paid for their services. This tends to create a situation of competition, undermining government programmes for Lead Farmers which do not offer such compensation.

Coordination of the service providers is lacking, even though coordination was a main point of the 2000 extension service policy. In practice, NGOs may engage in areas where other NGOs are already working. There are cases where several organizations are working with the same Lead Farmers, who then must handle differing signals and expectations

from these organizations. One of the DF partners told of one Lead Farmer who served three NGOs, and had one pushbike from each: he had to return home between meetings with the different NGOs to switch pushbikes. In other places however, there are no services at all. These are often the most remote and inaccessible areas, also often the poorest ones.

2.3 Basic facts about the government Lead Farmer Approach

The Lead Farmer extension, as carried out by the government and various NGOs, has the potential to fill the gap in lacking extension workers – in close collaboration with the remaining extension workers. A Lead Farmer is defined as an individual farmer (male or female) who has been elected by the village to assist voluntarily in the delivery of a maximum of three good agricultural practices/technologies that are enterprise-specific, and who has been trained in these technologies.⁴ The term ‘Lead Farmer’ was chosen by the government to describe how these farmers technically guide other fellow farmers, acting as leaders.

Lead Farmers (LFs) are responsible to their respective VDCs and extension workers. They are to cover one village each, where they are expected by the community and local extension worker to:

- train fellow farmers (often called Follower Farmers, as by the DF) in the technologies in which they have specialized;
- implement technologies introduced by extension workers;
- conduct demonstrations, field days, extension meetings and local field tours in liaison with the local extension workers;
- facilitate the development and implementation of action plans with fellow farmers;
- discuss the progress of activity implementation with the extension workers;
- conduct follow-ups of fellow farmer action plans;
- give feedback to the extension worker through the local committees on community experiences with agricultural technologies;
- liaise with extension workers on farmers’ needs;
- with support of the extension worker, promote community-based monitoring and evaluation.

In selecting Lead Farmers, certain characteristics and qualities are important. The Lead Farmer should be:

- a self-starter
- willing to share information with others
- able to lead fellow farmers
- early adopter of technology
- a communicator with good facilitation skills
- honest, trustworthy and humble
- concerned about development
- tolerant
- member of the village; socially accepted by the community
- willing to sacrifice for fellow farmers
- cooperative
- approachable
- able to read and write.

The procedures for LF selection follow three steps. First, the extension worker (from the government or from other service providers) facilitates a sensitization meeting with local leaders to introduce the lead farmer approach, and characteristics of a Lead Farmer are discussed. Second, the village identifies and shortlists potential LFs in terms of technology, also taking the gender balance into consideration. Third, the village selects male and female LFs from the shortlist, taking the above-listed characteristics into consideration.

For LFs to be able to perform their roles properly, support is required from the extension staff (of the government, other service providers or a combination). The extension staff should:

- provide orientation on the LF approach
- train them on facilitation, communication and leadership skills
- facilitate training on prioritized good agricultural practices and technologies
- support LFs in formulating their work plans
- conduct regular supervision and mentoring to re-enforce implementation of the work plan
- provide and explain technical reference resource materials (leaflets, posters and booklets)
- provide each LF with basic working equipment/materials such as stationery, rulers, tape measures, protective gear (rain suit, gumboots, bag) and pushbike.

⁴ This section is based on the Lead Farmer Approach Guidelines, developed by the Department of Extension Services (DAES) of the MoAIW in 2015. The Lead Farmer Approach Manual of the Development Fund, developed in collaboration with partners, other NGOs and the MoAIW, served as an important basis for the Guidelines. Even though the Guidelines are hardly known among actors and experts, it is currently in use by the Government, as confirmed by Dr. Charles Masangano from the Malawi Forum for Agricultural Advisory Services (MAFAAS) in an e-mail of 1 May 2019.

This is how it is supposed to be, according to the government, but funding constraints make it difficult to follow up on this, particularly for the government. The situation differs among NGOs: some provide more working equipment/materials and incentives than others. Some even pay remuneration to LFs, even though they are supposed to work on a voluntary basis. Such differences create frustrations and represent a considerable challenge.

2.4 Challenges for Lead Farmer extension

Even though the Lead Farmer extension model has the potential to fill the gap of lacking extension workers, it can also result in a big mess of competing service providers with differing messages and services of varying degrees of quality. There is also the danger that LFs become seen as extension workers, and that extension workers treat LFs as their prolonged arms from the cities and towns where they reside. The government has warned against such a development, as LFs do not have the competence to act as extension service workers and should not be overburdened to do so.

LFs normally receive very short training, often only for five days, sometimes not even that, and there is the danger of considerable knowledge drain along the knowledge chain from the training that the LFs receive and until the reception by the Follower Farmers (FFs). Moreover, the former become overburdened if they are assigned too many FFs. The government recommendation is 10 to 15 FFs per LF, but in some EPAs today, one LF may have 200 FFs farmers

2.5 Forthcoming policy and strategy

A new agricultural extension service policy has been announced, to replace the extension policy from 2000. Also, a new strategy is being developed. The purpose is to ensure quality and coordination within agricultural extension, including Lead Farmer extension. However, it remains to be seen whether the new policy and strategy will make a difference, as compared to the policy from 2000, which was also aimed at quality and coordination. The process is being led by consultants. For such documents to be effective, participation of central organizations in the development of the policy and strategy is important, but there has been limited participation in the process so far.

3. DF's Lead Farmer Extension Approach in a nutshell

Malawian farmers face mounting challenges related to climate change, soil degradation, water scarcity as well as occasional floods, and crop pests and diseases. Due to the rapidly increasing population, solving these challenges is more and more pressing, to avoid food shortages and hunger, achieve food security and ensure livelihoods. Hunger and poverty are widespread.

In such a situation, it is vitally important for farmers to have access to extension services that can help them to get the most out of their farms without impairing soil fertility for future generations.

3.1 Lead actors filling the gap in collaboration

As the extension services continue to lack capacity, the Lead Farmer Extension Approach developed by the DF and its partners has emerged as a promising model to fill the gap. Based on this approach, the DF and its partners have designed programmes aimed at addressing the problems of quality and coordination in agricultural extension, collaborating closely with the government and with other NGOs. Also at the local level, they work together with existing structures, including extension services, ADCs and VDCs.

The DF and its implementing partners produced the first Lead Farmer Extension and Training Guide in 2014, in close collaboration with the government and various NGOs. The guide has since been used by the government as well as other NGOs. The DF collaborates with central NGOs to provide coordinated services to farmers. Five implementing generalist partners comprise the core of current programmes:

- Mzuzu Agricultural Development Division (MZADD)
- Find Your Feet (FYF)
- Trustee of Agricultural Promotion Programme (TAPP)
- Heifer International
- Leadership in Environment and Development in Southern and Eastern Africa (LEAD SEA).

They organize Lead Farmers, facilitate the organization of Follower Farmers, and are core implementers of the programme in the various EPAs.

Further, they collaborate closely with four specialist partners that provide specific services:

- African Institute for Corporate Citizenship (AICC): business opportunities
- Malawi Union of Savings and Credit Cooperatives (MUSCCO): village savings and loans
- Network for Youth Development (NfYD): youth mobilization
- Centre for Environmental Policy and Advocacy (CEPA): policy advocacy.

The first three specialist partners work with each of the generalist partners in different EPAs. The synergies are strong, thereby maximizing the benefits of the Lead Farmer Extension Approach for the target groups.

3.2 Core elements of the DF Lead Farmer Extension Approach

When the Lead Farmer Extension Approach is introduced in a new area, it is first presented by the DF generalist partner in the ADC and relevant VDCs. If they welcome the initiative, the DF generalist partner supports and facilitates the selection of LFs by the VDCs, following criteria for the qualifications and skills of an LF (see above), and criteria of democracy and transparency regarding the process. Great emphasis is put on the explanation of what it takes to be an LF and that that the arrangement is totally voluntary. The selected LFs are trained for five days in Sustainable Agriculture (SA)/Climate Smart Agriculture (CSA) technologies, with Conservation Agriculture (CA) as an integral part. After two years they will be offered a three-day refresher course.

Returning from the training, new LFs inform their VDCs about what they have learned and how they intend to proceed. They then conduct a training on the technologies learned for members of the community, and start putting into practice some of the technologies they have learned. Other farmers

who wish to follow them and learn the technologies 'sign up' and become Follower Farmers (FFs). As there are no limitations here, an LF may get many more FFs than the government recommendation of 10–15. The DF recommends 1–30 FFs per LF in general. In the DF programmes, however, the target ratio is 30 FF for each LF.

As good manure is a central factor in SA/CSA-technologies, the introduction of livestock is an important component. Goats and pigs, chickens and rabbits have been introduced through a pass-on system, where a certain number of livestock are provided to one farmer (often an LF), who is responsible for passing on the same number of offspring (the first animals born) to another farmer (normally an FF). This farmer, in turn, passes the offspring to the next FF, and so on. This is a cost-effective way to distribute livestock to a large number of farmers.

The LFs are also invited to engage the AICC and MUSCCO to help in developing business opportunities and village savings and loans, and to engage NfYD in youth mobilization. However, these possibilities are limited to the sections within the EPAs where these specialist partners are active.

The SA/CSA technologies currently implemented are aimed at adapting farming to, and mitigating the effects of climate change, improving the soil quality, reducing soil erosion, storing water in the soil and producing higher yields over larger areas. As this evaluation will show, they have proven highly effective.

4. Case studies – the experiences

4.1 Case study 1: Chiwamba Extension Planning Area, Lilongwe Rural (TAPP)

The Lead Farmer intervention from DF/TAPP in Chiwamba in Lilongwe Rural has made significant progress since 2014, substantially contributing to food security and livelihoods among farmers in the area. The majority of the farmers involved apply the technologies they have learned to all of their land holdings; the others, increasingly so. It has been a gradual process, transforming the land, and takes normally 3 to 4 years, according to farmers consulted for this study. Productivity has increased, and soils have improved in terms of fertility and water storage capacity. The new methods have clearly contributed to mitigating and adapting to the effects of climate change.

4.1.1 Lead Farmers in Chiwamba

The LFs consulted for this evaluation in Chiwamba had been selected through democratic processes, as stipulated in the programme. They appeared highly skilled, knowledgeable and capable of training and guiding their FFs, as confirmed by the latter as well as by extension workers. They are not only trained through the programme, but interact with extension workers, with whom they exchange experiences, discuss solutions, get updated and are further trained, they reported.

The LFs do not offer only a few technologies to their FFs, as originally foreseen. They feel competent to train their FFs in all the techniques they have learned in the training and refresher courses, and other methods they have learned from the extension workers. They are actually acting more and more as extension workers, whereas the formal extension workers serve more as coordinators, providing advice and facilitating linkage to the government.

In fact, this is a development which is not desired by TAPP or DF, and which also the government has warned against. LFs are not supposed to become

a substitute for extension workers, as they do not have the required competence. However, there are few extension workers in Chiwamba, and they are not easily accessible for farmers. They live in, or near to cities or towns and are loaded with tasks from the government. Farmers in general prefer to ask LFs for advice, even if their knowledge is more limited. Even if the LFs may feel competent, their competence is based on a five-day training, for some of them a three-day refresher course; in addition, comes the interaction with their respective extension workers. Thus, they have limited competence, even if they make the most out of it.

In each section of the EPA in which the programme is active, there is a committee of LFs. Each of these committees has a chair LF, selected among themselves. There is also an extension worker attached to the committee. These committees are self-governing and meet once a month. There is an EPA wide network for LFs which meets four times a year. Each section is divided into clusters, covering one, two or three villages, depending on size. Here demonstrations are held, to share with farmers in the cluster.

The LF/FF ratio varies. Two LFs explained that they had 5–10 FFs. Twelve LFs had 10–15 FFs and eleven LFs had 15–20 FFs. No one in the group consulted had more than 20 FFs. They said that it would be too much for them to follow up adequately, and considered maximum 20 FFs as optimal.

The LFs consulted for this study highlighted many benefits from their new role: First of all, they have enough food, and an improved income situation, enabling them to send their children to school, pay the school fees, and to buy fertilizer. Some were also able to buy mobile phones and/or iron sheeting for the roofs of their houses. As LFs, they have got bikes and can get around to other farmers, which is much appreciated. Moreover, they earn respect in the community and gratitude from their FFs. They appreciated learning about modern farming

technologies, how to improve soil fertility and water storage capacity, how to cope with climate change, and how to construct fuel-saving stoves. As they were often the first to receive livestock in the pass-on system, they appreciated getting goats, chickens, rabbits or pigs. Most of them could not afford to buy such livestock on their own before they joined the programme. Some LFs reported that they also appreciated learning how to 'measure the land in meters'.

The LFs explained that they were applying the following methods: mulching, pit planting, making and applying manure compost, preparing organic pesticides, agroforestry, intercropping, crop diversification, preparing contour ridges, and constructing fuel-saving stoves. All LFs said that they could train and guide FFs in all these methods. They taught their FFs in groups, demonstrating SA/CSA technologies in their fields or in demo plots. Demonstration was considered the most effective and efficient form of training. They arranged field days and gatherings and visited their FFs regularly. When asked whether they would continue as Lead Farmers in 10 years from now, the answer was a resounding 'YES!' They explained that they were motivated to continue because they learn a lot and can travel to other farmers, and because the livelihoods are improving as a result of the technologies.

The key recommendation to the DF from the Lead Farmers is to continue the programme, as it is improving their livelihoods. They have just started, and the transformation process is still in the early stages. More time is required before phasing out the programme. There is a need to scale out from the positive experiences to the sections of the EPA which have not yet been reached, they said. These are poor and remote areas. It takes time, more than four years, for a whole EPA to take these technologies on board. Further, these LFs wish to receive a certificate from the training they have completed, and to replace the bikes they received in 2014 and are now worn out with new ones. They also suggested starting a pilot project with dairy cattle, to get more manure; further, that the allowances for refresher courses be increased, so they could buy sufficient food and drinks while attending the course. The female Lead Farmers in the group were consulted separately after the gender-mixed meeting. They

did not have much to add, as they felt they had said what they wanted in the meeting. They confirmed that their role was appreciated also in their families, and that also male FFs were willing to follow their advice. They added that women interact better with women, and that they thus would have a comparative advantage over men with regard to leading female FFs. The women LFs said that they had become more self-reliant with own income, and that this has strengthened their position within their families. They used to be shy, they said, but now they are courageous and know how to speak up. They have indeed been empowered.

4.1.2 Follower Farmers in Chiwamba

Follower Farmers in Chiwamba confirmed that they had been recruited on the basis of interest. They saw the results that the LFs had produced on their farms and asked to become their Follower Farmers. LFs and FF cover all social strata, including very poor farmers, youth and people with disabilities as well as HIV- and AIDS- affected households, they said.

Chiwamba FFs added that, thanks to the new techniques, they could harvest enough food and sometimes have surplus. From the income they get from selling the produce, they send children to school and meet household needs. It is a great advantage to participate in village savings and loans groups, as the dividend enables them to buy fertilizers. They found it motivating to work in groups and could observe that their soils were improving in organic matter and fertility.

Many FFs serve as models for other farmers in their area. Out of 28 FFs consulted, 21 had experienced that another farmer adopted methods that they apply. In several cases more than one farmer had adopted FF methods.

They listed the technologies they have learned from LFs: manure composting, mulching, pit planting, rainwater harvesting, agroforestry, irrigation, energy-efficient stoves, village saving and loans, livestock management and the construction of improved livestock housings. The FFs said that they would apply selected new methods on all their land holdings.

Further, the FFs explained that they liked learning from demonstrations at demonstration plots established by the LFs. This was the most common

way of learning, and they felt that learning from demonstrations was also the best way. They could get the information they needed from the LFs, but they also felt that LFs might profit from more training in certain matters, particularly in new technologies like irrigation.

Life has changed considerably for these FFs after joining the programme. Now they are food-secure. Their children attend school, as the fees can be paid. Several FFs have got animals they did not have before. They can sleep under good roofs of iron sheeting, and have energy-efficient stoves for cooking. Climate-change adaptation is improving. They recalled that in 2018 there was very little rain, and the harvest was very poor. Those who used climate-smart agriculture practices were able to harvest more food than those who did not apply such technologies.

All FFs consulted for this study emphasized that they intend to continue with their activities also after the programme is phased out. Their key message to the DF is: 'Just don't stop supporting us!' They feel that the programme has just began, and that it is too early to phase out. If the programme could continue, they would like more farmers to be trained as LFs in order to scale out the model. They would also like to learn about more technologies, such as irrigation and bee-keeping. In addition, they suggested piloting the introduction of dairy cattle, to get more manure. Finally, they said they would appreciate access to more crop varieties, to spread the risk of crop failure.

The female FFs came to a follow-up meeting. The first issue they raised was illiteracy. Of the 16 female FFs consulted, 9 were illiterate. They said they were the most neglected of all people in the community, which pained them greatly. They were grateful to be part of the programme, and that they had not been excluded because of their illiteracy – but they were not allowed to become Lead Farmers. Nevertheless, the programme was helping them: they get good harvests, and some now have goats and chickens. They said that self-empowerment is the result of their becoming FFs.

These women hoped that the programme would continue, and added that they needed more help with nutrition. They are not well acquainted with all

crops they grow. For example, they were not aware that soybeans are poisonous if eaten before boiling. They would like recipes. Further, they do not have good access to seeds, and would like the DF Malawi Programme to help them obtain seed of local Bambara nuts and sweet potato, as well as early-maturing maize, to diversify their crops and diets.

4.1.3 Agricultural extension service workers in Chiwamba

Agricultural extension service workers have a heavy workload, with all the tasks from the government and the many activities demanded by the extension services. It is not possible to cope with everything. Lead Farmers are an addition to the workload, but they are also great help and relief, explained agricultural extension workers. They have up to 2,000 farmers to accommodate each – far too many. LFs help to fill the gap, sharing the workload of the extension workers, and helping to convey messages to the FFs. Also in areas with no extension workers, LFs share messages from other LFs in areas where there were extension workers, ensuring broad outreach. The extension workers say they visit each LF every two weeks. All activities in agricultural extension go through the Lead Farmers – the extension workers say: 'We could not do without them!'

Further, the extension workers say that the knowledge level of the LFs is generally high. That is not just due to training, but more so because they were already knowledgeable, they explain. That had been an important criterion in the selection process. The new techniques are widely adopted, because people are generally committed to the approach, the extension workers explained. The FFs test a new method first on a small plot, then they expand gradually. The LFs do the same, but in advance. Today, the majority of LFs and FFs apply the methods on their entire farms, whereas a few apply them on a part, according to the extension workers.

The extension workers feel confident that the LFs will continue after the programme has been phased out, and they confirmed that they would support them. They said that in the sections where TAPP/DF is active, around 90% of the farmers are beneficiaries, including those who are not enrolled but who learn informally from Lead or Follower Farmers.

The AEDC explained that there are also other

organizations involved in LF extension in the EPA, some focusing on very narrow approaches. None of these organizations have an outreach comparable to that of TAPP/DF, he said. He was confident that Lead Farmers under TAPP/DF would not be engaged by any other organization.

The extension workers thanked DF/TAPP for supporting this project, explaining that it has helped to ease their work. Now many farmers have strengthened their capacity in SA/CSA technologies, and their livelihoods have improved substantially. They urged DF/TAPP to continue the programme for the sections not yet covered.

4.1.4 ADCs and VDCs in Chiwamba

Chairs and members of the ADC and VDCs in Chiwamba explained that they work hand-in-hand with the Lead Farmers. They assist in convening meetings and field days. The LFs are highly appreciated by the ADC and VDCs, as there are not many agricultural extension workers in Chiwamba. The LFs are working very hard and very well, they note, and they are knowledgeable. LFs report to the VDCs and assist as messengers for the VDCs to their Follower Farmers. In fact, it emerged that all the chairs and members of the ADC and VDCs at the meeting were Follower Farmers!

The Lead Farmers were described as being very helpful. As they reside within the community, they can be reached when necessary – a great advantage. Thanks to the programme, it is now possible to harvest more from small fields; and the crops survive dry spells when other crops do not. There are still food shortages in the EPA, the ADC and VDC members explained – but, they added, this was not the case among the farmers who used the new technologies. Food security has improved, and the participating farmers have also improved their financial situation. In addition, great efforts are being made to restore the forest cover.

However, there have been situations where the selection of LFs was biased, despite democratic methods, one VDC member stated. Also, it is a great problem that not all LFs have pushbikes any longer: they have broken down, another VDC member said. Having functional bikes is a critical factor in reaching out to the FFs and in attending relevant meetings.

The chairs and members of the ADC and VDCs

confirmed that they will continue to support the LFs after the programme has been phased out. However, they stressed that DF should consider extending the programme, as there are large areas in the EPA that are still without LFs, which need to be covered. More LFs need to be trained, they said. Also, some FFs are very poor. They need start-up material such as seeds and manure. There is also a need for more animals in the pass--on system, as the current number is not sufficient. It takes a long time before all members of a group receive their animals. They further suggested sending VDC representatives for training when Lead Farmers are trained, to be better equipped to support them. Finally, they proposed to convene review meetings in the VDC where several villages could come together to learn from one another.

4.1.5 Young Farmers in Chiwamba, members of NfYD

The members of Network for Youth Development (NfYD) from two sections were gathered for a focus group interview. This was an impressive group of young people, all of them Follower Farmers, except for one, who was a Lead Farmer.

They talked about the activities in the groups, such as learning about sustainable agriculture at demonstration plots and following up on their own fields, growing maize, tomatoes and other crops. They were also engaged in pig rearing and bee-keeping.

The groups meet once a week. Here the members encourage one another to work hard in order to become self-reliant. They have village savings and loan activities, and learn about business opportunities. Further, they discuss health-related issues through a campaign on HIV and AIDS; sporting activities are also organized.

Working together in a group is very supportive, and these young people feel that they understand each other very well. The group has profoundly changed their views about the future. They are becoming more self-reliant, as they can now harvest surplus food and sell some of the produce. They do not need to burden their parents. They feel that they have a bright future: they have expectations. They can imagine starting up businesses. They realize that they can manage their lives. They are motivated to work in groups. In addition, the groups make them

feel safer.

The technologies applied by these young farmers included pit planting, mulching, manure compost and application, one-to-one planting (which maximizes plant population per unit area and requires less seed per hectare), intercropping, crop rotation and agroforestry. They could explain how the different methods contribute to increasing nutrients in the soil and thus fertility, suppressing weeds, harvesting water, improving yields, and preventing soil erosion. They are grateful for technologies that can help to mitigate the effects of climate change and to produce more food on small areas, as there are many mouths to feed. They also appreciated the fact that the new methods are labour-saving.

The young farmers all agreed that the programme should be extended, as it has not reached the whole EPA yet. There is a need for more Lead Farmers to reach out, but also there is a need to relieve some of them, who have the burden of too many FFs. More young people should become LFs to reach better out to young farmers. They also felt that they needed more training themselves, on matters they have already been exposed to, as well as in livestock management, agri-business and village savings and loans. There should also be more farm-to-farm visits, training in irrigation, and these young farmers said that they would like to be involved in dairy husbandry.

As to challenges, they highlighted the need for start-up packages for poor farmers who cannot afford to buy seed and fertilizers to get started, and usually have no livestock. This important issue links in with the next problem: there are too few animals in the pass-on livestock programme. More livestock is required to enable all LFs and FFs to have access to manure. They also wished to have water pumps, to help irrigate land. Further, the young farmers mentioned that it was difficult to acquire land, and they would need loans, as they had very limited financial resources.

In conclusion, they stated that they were very appreciative that the DF has given consideration to young people. Previously, they relied on their parents – now they were able to assist them. They also felt that the programme was developing a new generation of good future leaders.

4.2 Case study 2:

Bwengu EPA, Mzimba North (FYF)

Progress has been notable also in Bwengu EPA since the programme started almost five years ago. Lead Farmers have been actively promoting the new SA/CSA technologies, not only in their own fields, but also by working with their FFs in their fields. LFs told of regular gatherings in the fields of the FFs, visiting different ones each week, working in their fields together and applying the technologies chosen. This collectivism is highly valued among the farmers; and particularly for elderly and disabled farmers it has meant a lot and is of great help. The results are impressive: Yields have increased significantly – in some instances more than doubled. Food and nutrition security has improved substantially and incomes have increased, not least through support to business activities. Investing parts of the income in village savings and loans has provided them with a dividend at the end of the year, and the improved financial situation has allowed farmers to meet household needs and send their children to school. Some can also afford to buy iron sheeting to roof their houses, or invest in livestock. Agroforestry, with the restoration of trees, has been an important contribution of the project. More generally, soil erosion has been halted and soil fertility improved in many fields. The crops planted with the new methods were standing strong, and deep green in colour, and with rich yields. Neighbouring fields where the new methods had not been applied were clearly weaker. The rains have been good that season: farmers explained the differences were even greater in years with low rainfall, such as the previous year.

4.2.1 Lead Farmers in Bwengu

Lead Farmers in Bwengu appeared highly competent, and contributed many reflections on the Lead Farmer Extension Approach. Generally, they found it very rewarding to be LFs: they could contribute to their communities, others could learn from them, and they could find ways for their communities to mitigate the effects of climate change. In addition, these LFs benefited personally, through greater food production and higher income. They enjoyed learning about new methods, and appreciated the friendship and sense of community that had developed among the LFs.

However, they felt that the LF training they had received was not sufficient. They feel the need for more frequent refresher courses, to maintain their knowledge. Once a year would be good. They also noted that new points had been added to the training course since 2015, and that those who had received training in 2014 had not been exposed to these. As their FFs expected them to know, it would be good to update the 2014 LFs, perhaps as part of the refresher courses. They also stressed that one week of training was inadequate for effective learning. The facilitators were good, but they had to push the tempo very hard to get through the course content – and that was not good for learning, the LFs said. There were so many things to be learned that at least three weeks would be needed. Here the LFs agreed that the best solution would be three weeks divided in three parts, providing more time to learn each of the modules and items. In-between the parts, they could practise, observe and reflect.

Collaboration with the extension services is good, the LFs said. Extension service workers visit them and also ask about their FFs. They offer advice as necessary and contribute at meetings organized by the LFs. The latter have action plans, which they follow, later submitting reports to the extension workers.

There are various ways of recruiting FFs. In some areas of the EPA, a community meeting is held with the farmers after the training. Here the LF explains what she/he has learned, and those who are interested can join. In other areas of the EPA, the LF informs about the training after she/he has returned and then starts practising. Other farmers can come to her/his field to observe the changes and then decide whether to join.

There were considerable difference in the number of Follower Farmers for each Lead Farmer. Of the 18 present LFs, one LF had 1–5 FFs; nine LFs had 5–10 FFs; two LFs had 10–15 FFs; no LFs had 15–20 FFs; three LFs had 20–25 FFs; two LFs had 25–30 FFs; one LF had more than 30 FFs (actually, more than 50); and three LFs did not reveal the numbers of their FFs. The group felt that 10–15 FFs would be the optimal size of a FF group.

When asked about the optimal size of a FF group, the woman with more than 50 FFs explained that

she dreamt of a group of 10, as it was difficult to visit so many people when you have a family. She explained that she had received so many FFs as there are no other LFs in the area, which is vast, and she had understood that one criterion for becoming an LF was that you would accept all farmers who wished to join as FFs. It is very difficult to serve as an LF for so many farmers, especially for women who have children and must maintain the household. According to the Leader Farmers consulted, the most important thing now would be to select more LFs among the FFs where the FF groups exceed the recommended size.

The collective way of working in the fields is the most common method for learning. Meetings are also held, often in collaboration with local chiefs. The LFs said that the FFs tend to visit the LFs, to see what they are doing, to ask questions and/or share experiences.

The LFs explained that they taught methods for the following: mulching, contour ridging, pit planting, agroforestry, making and applying manure, stove-making, irrigation, dam-checking, tree regeneration, constructing improved goat housing, village savings and loans, backyard gardens, intercropping and hygiene. All of these technologies and practices are offered to the FFs, but each LF has certain specialties.

When asked whether they would still be LFs in 10 years from now, they all answered ‘YES!’, emphatically. The Lead Farmer Extension Approach benefits them in important ways: there is no more hunger, local livelihoods have improved, many problems are now history, poverty has been reduced, and goats and pigs have been distributed.

All LFs stressed that the programme should be extended to the rest of the EPA, in order to reduce poverty in the whole EPA. One woman said that exchange visits could be part of the new programme; one man suggested exchange visits with farmers in Norway. Another stressed the importance of learning more about irrigation: now they have to carry water in cans, which is very heavy work, too much for the elderly. It would be wonderful to have pumps with solar panels.

One man said that the programme should provide animals to those who have not yet received any:

the waiting times are too long. Also, the pushbikes were of poor quality. New ones were needed, of a stronger model and with access to spare parts. Several farmers wished to learn about bee-keeping. Finally, they thanked the DF and FYF, saying that what they had received through the programme was something they would never have managed to get on their own. 'Please come back and continue', they said. They were very grateful.

As the women in the LF group were clearly in the majority here, they had not experienced any difficulties expressing themselves in the mixed group. However, they added that it was sometimes difficult to combine their role as LFs with having a family and responsibility for a household. People would come to ask for their time anytime, and they would feel that they had to respond.

The women felt that they had a different approach to being LFs than their male counterparts. They felt that the commitment came from deeper in their hearts. This was a motherly feeling, an attitude of caring for others. They would always try to assist their fellow farmers. They would also help those who do not have enough food for their children. 'The difference is in the attitude towards our role as Lead Farmers, our deep commitment to caring for the others', one woman stated.

They explained that their husbands had generally been reluctant to begin with, but were supportive now. And the women feel that they get recognition for their work.

'We never knew that we should have a say in our families and in the communities. Through the programme, we have been given equal opportunities as men. Now we are able to speak without fear', one woman said. This is empowerment.

The women pleaded for the extension of the programme. It should focus on women LFs, since they will reach out to many more farmers, they explained, because the local farmers are often female.

4.2.2 Follower Farmers in Bwengu

Follower Farmers in Bwengu highlighted significant benefits from the programme. The high increase in yields is an important benefit; access to livestock is

also important. The goats are an important source of manure needed as fertilizer. Now they don't need to buy so much manure/fertilizers.

One man explained that his farm had sandy soil, which has meant low harvest yields. In 2015, he joined the programme: now he is able to harvest considerably more.

The business, savings and loans support are of great importance. Previously, the farmers had to sell to vendors, with little profit for themselves. Now they can reach the market as a group. By selling as a group, they make more profit than before, which they invest in their village savings and loans groups. From these savings they get loans at interest rates of between 10 and 20%. The interest is to be repaid within a year, and is distributed among the shareholders as dividend, according to the number of shares. That makes the families happy, they said.

The programme has been of great assistance, the farmers agreed. Hunger has been reduced, because now they can use manure and cultivate larger areas. Previously, they were confined to small areas because they could not afford to buy fertilizers for more. Now they grow larger areas. The nutritional situation has improved greatly.

The farmers said that before the programme, most children were illiterate, because the families could not afford to send them to school. Now they have money for school fees, so their children attend school and learn how to read and write.

If they had to choose from whom to get advice, they would opt for the Lead Farmers. But LF training has been limited, and there are knowledge gaps, so farmers would need to continue to rely on extension workers as well.

They apply the SA/CSA methods to all of their farmland, they told.

The farmers said they very much appreciated learning how to prepare manure compost. However, some farmers have problems in obtaining the raw materials. They have not received animals yet: with the pass-on system it may take a very long time until the last farmer receives animals. That is frustrating. One FF explained: having learned about a method

they will probably not be able to practise in their lifetime, or at least not in very many years, some young people have simply withdrawn from the programme .

The FFs maintained that they will continue as FFs in 10 years from now. But many would like to become LFs, and some assist their LFs already. Their most important message to the DF is that since the arrival of the FYF, many farmers have benefitted, but there are still many who have not been reached, even within the sections that are covered. Reaching out to these farmers should be an objective for any extension of the programme.

Should there be a new programme, the farmers would like to have water pumps for irrigation, so that they could further expand their areas for agricultural production. Moreover, learning does not stop, and new technologies are being developed all the time. Refresher courses are essential; they should continue, with new developments included. The FFs expressed their gratitude towards the DF and FYF.

The female FFs gathered in a focus group interview afterwards stressed that they had benefitted considerably. The programme provides not only for food security, but – importantly – also for income with which they are able to provide for their children. Previously, women did not have a say. They were always held back by the men. Now, with the programme, women are at the forefront. They are engaged in business, savings and loans. With these possibilities, women can do great things, they stated. ‘Men can rest now!’, one woman said, ‘we women are taking over!’

The men are supportive, since they can see the benefits. Due to the readjustment of power between men and women, there are fewer family conflicts. They are living more happily together. As one woman remarked, ‘Men ask us for assistance more frequently now. We women are supporting them. It really is a change in power.’

4.2.3 Agricultural extension service in Bwengu

The AEDC has been part of the programme since it started in 2014. There are ten sections in Bwengu EPA, and the programme is present in five of them. Training of LFs started in 2014. Field days and

Farmer-to-Farmer visits are organized, to see and learn from what others are doing. LFs demonstrate technologies, partly on demonstration plots on their farms, according to the AEDC. LFs also teach FFs how to prepare food based on the new recipes. Many families have energy-saving stoves. There is a villages saving and loan system; at times, the dividends are used for buying livestock.

But there are challenges:

1. Lead Farmers receive training in technologies that the AEDOs do not know properly. The AEDOs are bypassed with regard to training, which makes it difficult for them to support the LFs in applying these methods. If AEDOs are to support LFs, they must also get such training. Ideally, the two groups should be trained together, but AEDOs do not need as much time as LFs.
2. When LFs withdraw, it takes time before new ones are in place. This gap is difficult for the FFs who are left on their own.
3. The number of extension workers is going down. Extension workers are expected to cover, on average, 2882 farmers – a huge challenge that cannot be achieved by pushbike. They wish to have motorbikes.

Lead Farmers are relieving the burden of extension workers. As the latter have far too much to do, this is a welcome development. However, LFs do not have sufficient training. Most of them have difficulty in grasping new information quickly, extension workers explained. The LFs have learned all the new technologies, but they need more training and more frequent refresher courses. Some are highly capable, others are slower, and both must be accommodated. The programme should be extended, they said. Preferably, the training should last for three weeks, split into three parts, to enable practising, observing, exchanging and ‘digesting’ the contents, before going on to more new topics, they suggested. Importantly, AEDOs should participate, to enable backstopping later on.

The extension workers indicated that female Lead Farmers tend to perform better than male ones, adding that this applied also to FFs. Further, they noted that, whereas most LFs apply the new technologies on their entire farmlands, the FFs generally apply them on about half of their land. This

is mostly a matter of time. The FFs are in transition, and it takes some years. Since the programme is still new, it is too early to measure the adoption rate. In addition, there are early adopters and laggards, the extension workers explained. People are different.

Mobile phones are very useful. About 90% of the LFs have them, and use them to mobilize and spread messages. However, they could be used in a more targeted way, the extension workers felt.

If the programme is phased out, they will continue to support the LFs, they said. What is needed is to expand the programme to other areas which are not covered. It is also important to increase the number of LFs, to ensure more efficient coverage, they emphasized. Some LFs cover three VDCs. 'We cannot leave this incomplete, we have to continue. Therefore, the programme should be extended', the extension workers stressed, and used the opportunity to thank the DF and FYF.

4.2.4 ADC and VDCs in Bwengu

The chairs and members of the ADC and VDCs said that they work closely together with the Lead Farmers. They have learned and benefitted considerably. In fact, all the representatives at the focus group interview proved to be Follower Farmers!

They explained that when FYF came there, the entry point was good. After the introduction, local leaders went to the villages together with FYF to introduce the subject to the farmers. Thus, already from the outset there was a strong relationship between the VDCs and FYF. The LFs always keep the village chiefs and the VDCs informed, and they always collaborate with them.

The chairs and members of the ADC and VDCs underlined that they have learned a lot about conservation agriculture. They used to build ridges every year, but now they use the same ridges to plant again. The energy-saving stoves reduce the workload while saving the environment. Previously, the firewood they managed to collect and carry down to the farm would last for two days. Now it lasts for weeks, they said: 'Just one pile!'. They have learned about crop rotation and how to make compost manure from animal droppings, to mention some of the technologies that are often

used. Thanks to relevant training, they can estimate the profit possibilities of their produce, and can also engage in village savings and loans.

The chairs and members of the ADC and VDCs explained that the LFs were selected in line with the criteria stipulated in the Lead Farmer Extension and Training Guide. There were democratic elections with voting. Personality, character, accountability and transparency were important criteria. Volunteerism was a major condition. The person also needed to be respectful of the chief and the VDC members, they stated. Further, the person should stay in the village and not travel much outside.

LFs are do-ers, they said. They work by practice. Extension workers provide capacity-building to others but are not do-ers themselves. It is easier to learn and adopt practices from an LF. When an extension worker calls a meeting to introduce something new, he or she might suddenly get a phone-call instructing him/her to go somewhere else... That would never happen with an LF. The LF has time and is always there, they said.

The chairs and members of the ADC and VDCs opined that the LFs need more training in the SA/CSA techniques as well as in leadership. The training they have received is not sufficient, and refresher courses are not held frequently enough.

Collaboration needs to be improved, they said. There are new CSA technologies coming all the time. The extension workers are the ones who should know about these. They should inform and train LFs in these new methods and how to adopt them.

The ADC and VDC representatives stressed that they would continue their work also after the programme has ended: they could not go back now. However, more FFs should become LFs. Further, it is essential to have a good exit strategy – otherwise the system might collapse.

They wish the programme to continue along the same lines, but expanding to other areas in the EPA without LFs, while maintaining and completing the work in the present EPAs. Capacity building could be done jointly with VDC members/chairs and LFs, to build 'team spirit'. That would help them support the LFs. Training over five days and three times

would be good. Five days is a maximum to have to be away from home at one time. Also, more animals are needed in the pass-on system. And they would wish to have water pumps.

4.3 Representativeness and relevance of the case studies for LF work in Malawi

To what extent are the findings from these two case studies relevant for the other project sites, and under what conditions? This is an important questions with regard to drawing conclusions.

The two sites visited differ with regard to levels of food security, exposure to climate change and environmental degradation. There are also clear differences in poverty and literacy levels. As to socio-cultural aspects, Chiwamba is matrilineal and whereas Bwengu is patrilineal; the level of collectivism is higher in the north than in the centre. Some sites are 'older' than others and have had longer involvement by DF partners. The sites visited for this report both started up in 2014.

However, the methods are largely the same across sites, and the levels of adoption are comparable. Thus, there is scope for generalization of findings, but consideration should be given to the differing framework conditions.

5. Analysis

5.1 Relevance

This section examines the relevance of Lead Farmer Extension Approach to the real priorities and needs of the target groups and whether it contributes to national priorities and programmes as a complement to the formal government extension service.

5.1.1 Relevance to the target groups

To find whether the Lead Farmer Extension Approach and the knowledge shared through this approach correspond to the real priorities and needs of farming women and men, we first asked them what they considered their most pressing challenges at the time when the programme was being introduced. This question was posed to Lead and Follower Farmers at both sites, also to women Lead and Follower Farmers.

There was no doubt about the most pressing challenge: Hunger! For many years, there had been food shortages of varying duration: because the farm holdings are simply too small to feed all the members of a household, and also because of frequent droughts and dry spells. The soils are often not sufficiently fertile: they are degraded, organic manure has been out of reach and chemical fertilizers so expensive that they could be applied only on parts of the farmland. Moreover, crops are sometimes attacked by pests and diseases. It has often not been possible to produce enough food.

In addition, the food was not diverse enough to provide the nutrition required for a healthy diet. As a result, children were often malnourished; malnourishment during pregnancy was said to be a critical problem. Adults felt often tired and exhausted during periods of hunger and malnutrition.

As all the farmers consulted for this study pointed out, the Lead Farmer Extension Approach has been responding directly and effectively to these challenges. Through SA/CSA technologies farmers can now produce considerably more food on the available land, and can maintain soil moisture even

in dry times. The composition of soil organic matter is increasing, and soil erosion is being halted. With the application of composted manure and mulching, soil fertility improves, and the need to apply chemical fertilizers is reduced (although sometimes a top dressing is still applied). Thanks to these measures, crops get stronger and bigger, and can more readily resist pests and diseases. In case of attacks, bio-pesticides are applied when required. The farmers are also free to use pesticides if nothing else works, but this is not encouraged. According to the farmers consulted, most of them have not experienced food shortage since the programme started. Some have experienced food shortages, but for considerably shorter periods than previously.

Concerning nutrition, it has also been a priority to promote the diversification of crops through the Lead Farmer Extension Approach, as a means to ensure a healthy diet, along with recommended recipes for tasty meals (while at the same time contributing to crop rotation as a means of improving soil fertility and plant health). That is the general approach, but the emphasis seems to have varied from place to place. Particularly in Bwengu, farmers stress that the focus on crop diversification and the new recipes have helped many of them overcome malnutrition. Children are no longer so malnourished, and they appear healthier. Adults are not so exhausted, and they feel stronger. However, in Chiwamba, farmers felt that they needed more information about crop diversification, access to a greater diversity of crops, information on how to use unfamiliar crops, and recipes.

Poverty was mentioned by all groups as the second most pressing challenge. Farmers did not have enough money to meet the household needs. For example, purchasing meat was unaffordable for many households, and it was difficult to find money for other food items and clothes. Often there was not enough to pay the children's school. Many houses are leaking due to poor roofing materials and lack of enough grass to cover them. Iron sheets are the

preferred material, but, before the programme got underway, most farmers could not afford to buy them. Also, there was not enough money to buy sufficient quantities of manure and/or chemical fertilizers.

With the programme, farmers are now able to produce surplus to sell, and some get assistance in marketing their produce (through AICC). Some households have engaged in income-generating activities such as bee keeping. Through the pass-on system for livestock, many farmers have received goats or pigs, and can earning some extra income by selling some of the offspring. Some of the income is often invested in village savings and loans. With the remaining income and the dividends from the village savings and loans (shared at the end of each year, according to the numbers of shares that each farmer has purchased), livelihoods have been improved. The additional income is often sufficient to meet household needs, including occasionally buying meat, sending children to school (high priority) and buying manure/fertilizers. Some households have also been able to buy iron sheets for roof covering.

All farmers consulted for this study are concerned about climate change – in particular, how it affects the possibilities of producing enough food. This third, and pressing issue is closely linked to the challenges noted above. Climate change results in unpredictable weather, more droughts and dry spells, as well as pests and diseases. Application of the Lead Farmer Extension Approach by the DF and its partners is specifically targeted at mitigating the effects of climate change for agricultural production among small-holder farmers, and the farmers all agreed that the technologies were effective in this regard.

Here there might be some variance between the large majority of EPAs, and the very few EPAs which have experiencing better weather conditions. In at least one EPA in which the DF Lead Farmer Extension Approach has been applied, the adoption rate has

not been high: this is said to be because some of the new technologies are less relevant for agroecological conditions in that particular EPA. However, that is the exception.

The women were also concerned about their workload, which has been substantially heavier than that of men. A pressing need was to reduce this workload. A particularly cumbersome task is to harvest firewood and carry it all the way down from the mountains/hills or from the wide plains. This takes many hours and is hard work. Before the Lead Farmer Extension Approach was introduced each load would last for only about two days. Now many farmers have energy-efficient fuel-saving stoves, introduced through the SALFP programme. With these stoves, one load of fuelwood may last for more than a week, which is substantially reducing women's workload. Moreover, the CSA methods are less work-intensive in the long run, as they involve little to no tillage, and some of the methods are effective in suppressing weeds. As one woman farmer exclaimed: 'No more hoeing! That is a great relief!'

When asked whether the Lead Farmer Extension Approach responded to their most pressing needs, all the farmers shouted 'YES', with profound emphasis. All groups answered the same way.

5.1.2 Relevance with regard to national priorities and the government extension system

The national priorities and approaches relating to the DF Lead Farmer Extension Approach are set out in four national policies:⁵

- National Agriculture Policy of September 2016⁶
- Agricultural Extension in the New Millennium Policy Document of October 2000⁷
- The District Agricultural Extension Service System (DAESS) Implementation Guideline of November 2006⁸
- National Multi-Sector Nutrition Policy 2018–2022 of April 2018⁹

5 As explained in Section 2.3, the Department of Extension Services (DAES) of the MoAIW in 2015 developed a document called Lead Farmer Approach Guidelines. The Lead Farmer Approach Manual of the Development Fund, developed in collaboration with partners, other NGOs and the MoAIW, served as an important basis for the Guidelines. As these Guidelines have not been widely communicated and are little-known among actors and experts – they are still regarded as a draft – they are not included in the analysis in this Section 5.1.2 on relevance. However, there is full compatibility. The Guidelines are available at: <https://cepa.rmportal.net/Library/government-publications/National%20Lead%20Farmer%20Approach%20Guidelines%202015.pdf>.

6 Available at: https://reliefweb.int/sites/reliefweb.int/files/resources/NAP_Final_Signed.pdf

7 Available at: <https://cepa.rmportal.net/Library/government-publications/Agricultural%20Extension%20in%20the%20New%20Millennium-%20Towards%20Pluralistic%20and%20Demand%20Driven%20Services%20in%20Malawi%202000.pdf>

8 Available at: <http://compendium.g-fras.org/component/phocadownload/category/53-malawi.html?download=305:the-district-agricultural-extension-services-system-implementation-guide>. Due to time constraints, this evaluation has paid limited attention to the district level.

9 Available at: <https://www.fantaproject.org/sites/default/files/resources/Malawi-National-Multi-Sector-Nutrition-Policy-2018-2022.pdf>

The overall policy goal of the National Agricultural Policy of September 2016 is to achieve sustainable agricultural transformation that will result in significant growth of the agricultural sector, expanding incomes for farm households, improved food and nutrition security for all Malawians, and increased agricultural exports. There are several policy priority areas. Policy Priority Area 1 is Sustainable Agricultural Production and Productivity. Important means here are *inter alia* to promote innovative and high-quality agricultural extension and advisory services involving both public and non-state extension service providers; promote investments in climate-smart agriculture and sustainable land and water management; promote improved access to financial services, including agricultural credit and insurance; and provide incentives to farmers to diversify their crop, livestock, and fisheries production and utilization. Priority Area 5 is Nutrition and Food Security. Here, policy provisions include the promotion of production and utilization of diverse nutritious foods in line with the National Nutrition Policy and Strategic Plan. Policy Priority Area 7 is Empowerment of Youth, Women and Vulnerable Groups in Agriculture. Provisions here include the promotion of agricultural education and technical training for women, youth, and vulnerable groups, particularly those living with disabilities; further, supporting agribusiness entrepreneurship and facilitating access to finance for women, youth and vulnerable groups in agriculture. As these excerpts show, the DF's Lead Farmer Extension Approach contributes to the implementation of central parts of Malawi's National Agricultural Policy.

The Agricultural Extension in the New Millennium Policy Document of October 2000 provides for pluralistic and demand-driven services in Malawi. It opened up for the participation of non-state actors with different approaches to extension, in order to fill in the gap caused by the lack of extension workers and government resources. It was important for the services to practise equality with regard to gender, poverty, environment and HIV/AIDS affected people; to ensure coordination while promoting pluralism, set clear standards for quality, and assess the impact of the extension work. The DF's Lead Farmer Extension Approach was developed to pilot this form of extension already from 2003 and has been aimed at contributing to the central elements of this policy, including coordination, as explained above.

The objective of the DAESS Guideline of November 2006 is to empower farmers to demand high-quality services from those best able to provide them. The Implementation Guideline was written for all agricultural extension service providers, including public and private sectors, non-governmental organizations (NGOs), community-based organizations, faith-based organizations, and farmer-based organizations. The guide is also directed towards district administrators, as well as traditional, political and religious leaders, who are central to the implementation of the DAESS. The guideline includes tools for facilitating farmers' demands, the DAESS implementation structure, its functions and its relationship to the local government structure. It does not explicitly address Lead Farmer extension but is relevant with a view to the need for coordination of LF extension at the district level.

The overall objective of the National Multi-Sector Nutrition Policy 2018–2022 of April 2018 is a well-nourished Malawian population who can contribute to the economic growth and prosperity of the country. The policy is comprehensive. Means relevant for the DF Lead Farmer Extension Approach include enhancing nutrition education, social mobilization and positive behavioural change, and creating an enabling environment for effective implementation of nutrition interventions. The DF Lead Farmer Extension Approach is aimed at contributing towards this end.

The DF Lead Farmer Extension Approach is highly relevant to Malawian policies. The DF and its partners have actively contributed to pioneering this approach as a viable model for achieving the objectives highlighted above.

5.1.3 Overall conclusions on relevance

The DF Lead Farmer Extension Approach has proven highly relevant to the needs of the target groups and to the policies of Malawi on agriculture, extension and nutrition.

5.2 Effectiveness

The effectiveness of the Lead Farmer Extension Approach refers to the extent to which the objectives of the three programmes in this regard have been achieved.

The overall objectives of the three programmes

studied in this evaluation are to reduce poverty and vulnerability to climate change, and increase food and nutrition security and livelihoods – formulated in various ways and with differing emphases for the three programmes. The Lead Farmer Extension Approach, the focus of this evaluation, has targets as to the numbers of Lead and Follower Farmers who have been trained in SA/CSA technologies.

According to the logical frameworks and reports from the three programmes, the targets and achievements are as follows:

- In the Malawi-Zambia Programme (MAZA) (2012–2016), 39,000 farmers were targeted for training in SA technologies in Malawi. This target was over fulfilled with 67,657 farmers – approximately 173%, altogether. The figure comprises 4,832 (2,465 F and 2,367 M) Lead Farmers directly trained by the programme and 62,825 (28,853 F and 33,972 M) Follower Farmers trained by Lead Farmers. The LF/FF ratio was 1:13. By the end of the programme, 43,289 (approximately 59%) of the farmers who had been trained were registered as practising SA technologies on their plots. That figure includes only those farmers who were using at least three SA practices on no less than 0.2 ha. An unknown number of trained farmers practiced fewer new technologies and/or on smaller plots. Also, an unknown number of farmers who were not enrolled in the programme adopted SA methods from FFs.
- In the Malawi–Mozambique Programme (MAMO) (2016–ongoing), 1,300 Lead Farmers and 39,000 Follower Farmers are to be trained. This gives a targeted LF/FF ratio of 1:30. By the end of 2017, 317 LFs (163 F and 154 M) had been trained, in line with the plan. Within the same timeframe, the LF had trained 6,243 FFs (3432 F and 2811 M). These figures include all farmers who had been trained and had implemented climate-change adaptation and mitigation measures on their farms. This indicates an LF to FF ratio of 1:20 by the end of 2017.
- In the Sustainable Agriculture Lead Farmers Programme (SALFP) (2014–2019): 100,000 farmers are to be trained (3,000 LF; 90,000 FF; 7,000 HIV-affected/people with disabilities). The targeted average LF/FF ratio is 1:30. As of September 2018, 3925 Lead Farmers (1,945 F and 1,908 M) had been trained. Within the same time frame, 106,915 FFs (57,084 F and 49,831 M)

had been trained by LFs. Thus, already half a year before the end of the programme period, the targets have been over-fulfilled with 111%. The LF/FF ratio was 1:27. Of these, 104,711 farmers (55,904 F and 48,807 M) were registered, as of September 2018, as having adopted climate-smart technologies and practices.

As these figures show, achievements have been in line with, or higher, than the quantitative targets set for the programmes. More women than men benefited from the MAMO and SALFP programmes, whereas men were in the majority as beneficiaries of the MAZA programme.

5.2.1 Monitoring achievements

Despite these good figures and the systems for monitoring and evaluation established in the DF, there may be some difficulties in measuring achievements. Basically, the Lead Farmers report to the field staff of the generalist partner in question, and the field staff reports the names of the LFs and the names and numbers of their FFs through their organizations to the DF. The organizations maintain detailed data bases with all the names and information on the LFs and FFs. They aggregate the figures and forward them to the DF, where the overall figures are aggregated. The DF pays random visits to a few Lead Farmers four times a year, and these in turn present 3–7 Follower Farmers. There are no systematic visits to all the FFs of each visited LF.

Thus, it may be challenging to establish the exact number of Follower Farmers. It is generally known among experts in extension service that Lead Farmers tend to increase the number of Follower Farmers as a way of demonstrating that they are doing more work, which in turn is worth more incentives from the implementing organization. Although the number of FFs is often regarded as a measure of success, a high number may affect LF capacity to provide services of good quality detrimentally.

Communication with the generalist partners of the DF during this evaluation assignment reveals that different methods are being used when monitoring achievements in the field and that there are uncertainties about the criteria. What constitutes a trained Follower Farmer? And at what point can farmers be said to be actually practising

the technologies? Even though relatively clear criteria have been established, there have been uncertainties as to how to apply them in practice. In addition, monitoring achievements among this huge number of farmers and validating the findings is a no easy task, due not least to the low number of field staff – one field staff often covers several EPAs. Thus, there might be sources of errors along the monitoring chain from the LF/FF and up to the DF, and there is still scope for improvement of the methods in this regard.

In asking the generalist partners about the numbers of Lead and Follower Farmers that are practising SA/CSA technologies today, some discussion was required to establish the kinds of figures we were looking for and how they could be interpreted. Through valuable collaboration with the generalist partners during this evaluation process, we were able to establish realistic estimates of the actual numbers of farmers who are practising the technologies in which they have been trained (see table):

Table 1: Adoption rate of the technologies introduced through the MAMO Programme and SALFP

| DESCRIPTION | % Farmers cumulative |
|--|----------------------|
| % implementing at least 3 practices on no less than 0.2 ha | 62 |
| % implementing < 3 practices on at least 0.2 ha | 15 |
| % implementing < 3 practices on < 0.2 ha | 9 |
| % implementing at least 3 practices on < 0.2 ha | 10 |
| % drop-outs | 5 |

As Table 1 shows, 62% of the involved farmers practise at least three technologies on no less than 0.2 ha, which was the criterion for being recognized as a farmer who is practising the new technologies. However, 34% do practise the technologies to a lesser extent. It is important to recall that the programmes are still in their initial stages, and that it is really too early to measure adoption rates. Many farmers may still be in transition. However, there is also reason to ask why they do not apply more of the technologies and/or on a larger area of their land holdings. The

next section will shed light on that.

Only 5% are registered as drop-outs. However, this figure does not reveal the drop-outs who have been replaced by new Lead and Follower Farmers. The real number of drop-outs is thus unknown. Reasons mentioned for dropping out are migration to cities or abroad, and marriage, among other things. But individuals may also have dropped out of the programme for reasons of dissatisfaction or frustration, as addressed in the next section.

At the other hand, there is a spin-off effect not monitored by the partners or the DF: The number of farmers who have not been formally trained but who have adopted methods seen at the farms of LFs or particularly FFs. According to FF interviews conducted for this evaluation, this number may be significant.

5.2.2 The targets: Balancing outreach with quality

A key issue in all development cooperation is how to balance outreach with quality. The needy are countless and there is an urge to reach out to as many as possible. However, the more thinly the resources are spread, the more likely are the chances that quality will suffer.

Generally, the partners feel that the targets were too ambitious, in terms of numbers of Lead Farmers to be trained within the budget frames provided and with regard to the LF/FF ratio. According to some partners, the government recommendation for this ratio is 10 – 15 FFs per LF, whereas the DF aims at an average ratio of 30 FFs per LF in its MAMO and SALFP programmes.

From the interviews conducted with target groups and partners in Malawi, it must be concluded that the targets for the MAMO and SALFP programmes were set far too high to enable adequate quality of the service for Lead and Follower Farmers:

- The number of LFs as compared to available resources is so high that they can receive only limited training. All LF consulted felt that five days was a too a short training period. These days are so tightly packed with modules and contents that it is not possible to remember everything, although fast learners may manage to accommodate somewhat. Refresher trainings are offered only each two years, for three days, and this is not

-
- sufficient to deal with what the participants did not learn or have forgotten. In addition, new technologies and methods are continuously proliferating, which calls for updating. Today, LFs must depend on government extension service workers for backstopping and updating, but they are often not thoroughly acquainted with the CSA technologies, nor are they always updated about new developments. And they are few in number.
- LFs have been provided with cheap pushbikes of poor quality and without spare parts available. They break down easily – particularly if frequently loaded with heavy agricultural materials such as sacks of fertilizer. LFs are responsible for mending the pushbikes, according to their agreements with the organization that has provided the bike. However, that is difficult without spare parts, perhaps also without the knowledge of how to do it. Most LFs did not seem to feel responsible. A functioning system for maintenance is thus not in place. As mobility is crucial for LFs to do their work, this is an important point.
 - There have been limited funds to provide the *DF Lead Farmer Extension and Training Guide on Sustainable Agriculture* to the Lead Farmers. In fact, no one of the LFs consulted for this report had received the guide, even if it has been translated into local languages. It could serve as an important reference manual after the training, and could help LFs to explain and refresh what they have learned.
 - LFs also expressed the wish for some sort of ‘uniform’, such as a t-shirt and a cap, and a bag to store a module and papers to be filled out. Pens would be useful. None of the LFs consulted had received any of these items.
 - The targeted ratio of 30 FFs per each LF is generally too much; it may overburden the LFs and reduce their possibilities to take care of their children and do the work required at home. In some instances, it may also limit the time available to farming, even if the farmers consulted stated that this was not the case. Overburdening the LFs may reduce their motivation to continue over time, perhaps especially for women. Some LFs consulted felt that maximum 10 FFs would be an optimal group, others mentioned that 15 FFs, where a few opined that 20 FFs would be acceptable as a maximum. All LFs agreed that no FF group should exceed 20 FFs.
 - Large FF groups may reduce the quality of learning, as there will be less scope for individual follow-up.

- Due to the high target numbers of farmers, there are too few animals to be distributed through the pass-on livestock programme. In some areas there are only two pass-on goats for one family, in some areas there are three goats. The government recommendation is five goats, considered necessary to make a difference. In some areas, one set of goats is to be passed on to all other members of a group, year by year, when the goats have offspring. If the group has 30 members, it will take at least 30 years until the last farmer has received his/her animals. Sometimes, two or three sets of animals are given to such a group, which reduces the time to at least 15 or 10 years – but also that is far too long. As manure composting is central to the SA/CSA technologies, it is highly frustrating not to have access to these vital resources; there have been instances, perhaps many, of farmers who have withdrawn from programmes out of frustration. Particularly among young farmers, this is said to be a problem.
- The field staff have too vast areas to cover. This applies to generalist as well as specialist partners. In Mzimba North, for example, one field staff-member of the generalist partner covers three EPAs. The field staff of the specialist partners cover up to 10 EPAs. Obviously, this reduces the possibilities of offering adequate follow-up, even though the field staff we spoke with were highly motivated and committed, skilled and knowledgeable. In order to cope with this situation, the specialist partners select some of the EPA sections in which the generalist partner works and offer their services there. That means that not all sections can be covered with such offers (for instance, for youth mobilization, business development and village savings and loans).

These observations may explain why some have dropped out from programme. They may also provide a partial explanation for why a quite large share of trained farmers are not practising the technologies according to the criteria for an active Lead or Follower Farmer (see Table 1 above). Further, these points may help to explain why some trained farmers (probably some 30% to 40%) have not yet experienced the benefits of the programme in terms of e.g. increased yields.

From these considerations, we must conclude that less is often more. Reduced quantitative ambitions

combined with more quality are required to enable realizing the full potential of the Lead Farmer Extension Approach as a beacon in the extension system in Malawi. The partners have clearly shown through their inputs to this evaluation that quality matters to them, and all agree that the targets have been too ambitious. The DF discussed the overall targets set for the programmes with the partners at the outset, as a basis for dividing them into sub-targets and allocating these to the respective generalist partners. In deciding new targets in the future, the DF should listen carefully to the experience of their partners, and take their realities as points of departure (see Recommendations).

In view of the limitations highlighted here, it should be noted that there have been truly impressive achievements in terms of farmers trained, number of farmers who practise the new technologies and experience their benefits as regards food security, poverty alleviation and improved livelihoods.

5.2.3 Knowledge sharing and learning

The Lead and Follower Farmers consulted all agree on the most effective means of knowledge sharing: demonstrations in the field. This may take various forms. Some LFs invite the FFs to their fields, to showcase how methods are applied. They may invite FFs to participate or try. Other LFs, particularly in the North, organize visits to the fields of FFs, perhaps once a week, where the LF and the FFs work jointly to apply the new methods. Each week a different Follower Farmer will be visited, until all are visited, where after the round starts anew. This approach is also helpful for elderly farmers and farmers with disabilities, as they are assisted by the other farmers.

Farmer-to-farmer visits and field days are also important. On field days, extension service workers may participate and provide guidance; these gatherings may also be used for sharing knowledge on new technologies or other useful information for the farmers.

Women tend to follow women Lead Farmers and men to follow men Lead Farmers, particularly in the north. In the centre this is less evident, but still a tendency. There are several reasons why women FFs tend to prefer women Lead Farmers to male Lead Farmers. First of all, their husbands may be suspicious of other men and develop jealousy if

the wife engages with a male Lead Farmer. To avoid such a situation, the women may choose to follow women. Women FFs also tend to feel that women Lead Farmers are more attentive to their situations and challenges, and that it is easier to ask questions. Some women FFs felt that women LFs were more committed, 'from the depths of their hearts', and that it was thus more rewarding to follow such Lead Farmers.

Young farmers feel that they learn best from young Lead Farmers. This was again because they felt that young LFs would better understand the issues relevant for young farmers, and that they could be more open with one another than with an adult. More young Lead Farmers were required, they felt.

Provided that the Lead Farmers have learned what is required to convey this to their FFs, the methods of knowledge sharing seem effective and rewarding. The crucial factor is the training that the Lead Farmers have received. If the Lead Farmers managed to take in all the learning at the training, they would be in a good position to transfer their knowledge to their FFs, especially if they had the DF *Lead Farmers Extension and Training Guide on Sustainable Agriculture*. However, the latter is often not the case; and there are issues with the training, as noted in the previous section. Thus, there might be substantial knowledge drain along the knowledge chain. Greater emphasis should be put on improving the training of the Lead Farmers, including the provision of the DF guide.

5.2.4 Drawing on available structures and resources

There is close collaboration with VDCs and ADCs, in fact most VDC members consulted were Follower Farmers. The whole process of introducing the Lead Farmer Extension Approach starts in the ADCs and VDCs, when the DF partner organization presents the approach to the ADC and VDC members. If they accept, the VDCs are central in selecting the Lead Farmers and organizing democratic elections. Thereafter, the LFs keep them informed and the VDCs assist in organizing events such as field days. There is close collaboration and the ADCs and VDCs are crucial for the success of the programme.

Collaboration with the village heads is also important. In some places there have been issues here, as the chiefs felt bypassed by the VDCs

regarding approval of the programme and selection of Lead Farmers. Further, there has been at least one situation where a village chief felt that the Lead Farmer in his village challenged him. Such frictions were not found everywhere, and the extent of this problem is not known, but in this specific case, once it became clear how the Lead Farmer worked and what the benefits were for the village, the frictions seem to have faded away.

Collaboration with the extension service system is of great importance. The AEDC is a central figure in coordinating efforts in extension service at the local level. It is important to avoid duplication of work if more organizations are involved in Lead Farmer extension or other approaches to fill the gap in the extension services. There are examples of well-institutionalized approaches to collaboration, as in Chiwamba, where regular meetings were held between extension workers and Lead Farmers at various levels, and regular events were arranged (see chapter on Chiwamba above).

The AEDOs often maintain close contact with Lead Farmers in their areas. The LF have access to a large number of FFs, and the AEDO can reach out with message fast, if the LFs are approached. Indeed, LFs are used as messengers by AEDOs as well as ADC/VDC members. LFs can also ask AEDOs for backstopping and advice, also on behalf of FFs, thus facilitating the contact. In turn, AEDOs contribute to field days and other events. The AEDCs and AEDOs feel that the Lead Farmers complement their work, and help them in reaching out to more farmers. For the Lead Farmers the AEDOs represent an important pillar as regards professional support.

However, the AEDOs are overburdened with tasks and thus have relatively little time for actual extension services. There have been situations where AEDOs attending a meeting had to leave in the middle of the meeting, as they were called for other urgent tasks. AEDOs tend to live in cities or towns further away, even if there is housing for them where they work, and farmers feel that the AEDOs are distant not only in geographical terms. Generally, an FF will prefer to ask an LF for advice in agricultural matters, provided that the LF is familiar with the issue in question. With questions beyond the capacity of the LF, the FF will seek advice from an AEDO.

In general, the collaboration with VDCs and AEDOs is a key factor in goal achievement. However, this could be strengthened by offering more capacity training with regard to the Lead Farmer Extension Approach, the central contents of the technologies offered and ways and means to support the Lead Farmers. ADC and VDC members, AEDCs and AEDOs, as well as experts, all agreed on this.

The farmers consulted for this evaluation have not yet been exposed to electronic or print media, rural radio or other digital services within the framework of the Lead Farmer Extension Approach. However, many Lead Farmers possess mobile phones. In the North, this is true of almost all LFs, as against approximately half of the LFs in poorer areas in the Centre. Mobile phones are used for sending messages and inviting to meetings or events, thereby reducing the number of LF to be contacted physically to convey such messages. The number of phone holders is increasing rapidly, opening up new ways of communicating with Lead Farmers. It would be possible to send small video clips to show practices and technologies, provide reminders of suitable times for sowing or harvesting or other information of value to the farmers. Also, apps for agricultural information sharing could be downloaded (there are well reputed organizations in Malawi offering agricultural information via apps) and to use WhatsApp as a mode of sharing knowledge. Such possibilities could be considered for future programmes.

As for other approaches to extension service, it seems that the focus of the DF has been on the Lead Farmers Extension Approach, and that other methods, e.g. Farmer Field Schools (FFSs), have not attracted much attention. Farmer Field Schools represent a different approach to filling the gap of lacking extension services: they involve a group-based learning process during which farmers carry out experimental learning activities and share their experiences among themselves through observations and group analyses. This is a participatory and interactive way of improving agriculture, where the knowledge of the farmers involved is valued and taken as the point of departure. FFSs enable the exchange of knowledge between professional agronomists and farmers on an equal footing (provided the FFS model chosen does not exclude the involvement of professionals), aimed at

capacity building as well as empowerment among farmers. There are challenges with this approach, relating to the costs per farmer and the time that the farmer has to be away from home. The present evaluation will not evaluate the FFS approach – but, given that there are Farmer Field Schools in Malawi and that they are being promoted *inter alia* by the European Union, it is important to consider the scope for synergies with the Lead Farmer Approach of the DF with partners.

A comparative advantage of Farmer Field Schools, as compared to the Lead Farmer Extension Approach as carried out by the DF and partners, is that the former allow for the study of one crop at a time, to improve local knowledge about this crop, enhance the capacity to manage this crop and thus to improve production. Partners of the DF have indicated that such specialized crop-related knowledge is required to further improve agricultural production among lead and follower farmers. As a crop-based approach is not a part of the DF lead farmer model, it could be complemented through links to FFSs. Farmer Field Schools are often based on agroecological methods, so there is good scope for compatibility with the DF Lead Farmer Extension Approach and partners also in terms of production methods. Farmer Field Schools tend to have less outreach as compared to the Lead Farmer model, and Lead Farmers could thus help spreading relevant knowledge. The comparative advantages of these two approaches indicate that there is scope for collaboration. For example, crop-based knowledge from FFSs could be communicated to a much larger target group through LFs, and the technologies applied in the LF approach could be tested in FFSs for further development with regard to selected crops. Joint events could be organized to share experiences. Generally, the two approaches could nurture one another; linking them has potentials, as also pointed out by several DF partners.

5.2.5 Overall effectiveness

Goal achievement thus far has generally been above targets in terms of outreach. However, the targets were too ambitious as compared to available resources – and that may have affected achievements as regards the adoption rate of technologies and the benefits in the form of e.g. increased yields, as well as the monitoring of results. Here it should be noted that the programmes under which the Lead Farmer

Extension Approach has been carried out have been implemented for a relatively short time, and that the adoption rate and realization of benefits may increase in the years to come.

Despite the limitations noted here, the Lead Farmer model has reached out to a large number of beneficiaries and with a relatively high level of quality, given the resources available. Lead Farmers seem to be performing their tasks very well but may be limited in capacity due to weaknesses in the training they have received and due to the lack of pushbikes and pass-on livestock. LFs have collaborated closely with local structures to maximize the potentials; this collaboration has been useful as regards institutional and professional backup. There is scope for improving this support structure with more capacity building, and for linking up with other approaches to agricultural extension in Malawi, such as digital knowledge sharing platforms and Farmer Field Schools.

5.3 Impact

The positive impact of the Lead Farmer Extension Approach is substantial, even though it is still too early to assess the impacts of programmes that have been operating for less than five years (the sites visited were parts of the SALFP programme). Social change takes time, as does the change of agricultural systems. Nevertheless, the positive impacts are already impressive, and can be expected to increase in the years to come. Today, at least 60% of the target population is benefitting significantly from these impacts, and the share is expected to increase as many farmers are still in transition. Also, a substantial number of farmers who have not been enrolled as Lead or Follower Farmers seem to benefit from the new technologies, as will be highlighted here.

5.3.1 Food and nutrition security

Food security has improved substantially as a result of the programme. Farmers visited during the field trips for this evaluation reported production increases of more than double of what they produced before joining the programme. The reason was partly that crops were planted more tightly, partly that they got better growing conditions in terms of water, nutrition and soil structure and texture, and partly because farmers managed to utilize greater areas for agriculture, thanks to methods that

require low or no tilling and less weeding, as well as being able to afford to buy fertilizers. Particularly in years of drought, the farmers who practise SA/CSA technologies have substantially more food than others. Farmers consulted reported that they had eradicated hunger, at least for the time being. Hunger used to be frequent, but they had not experienced it after joining the programme.

Moreover, the nutrition situation has improved through the diversification of food crops, in line with the dietary recommendations from the government. Lead Farmers learn about the six food groups recommended for diet in Malawi: staple grains; fats and oils; animal foods; legumes and nuts; vegetables; and fruits.¹⁰ As far as possible, they now try to grow crops from all groups. Also, they have learned about the importance of eating breakfast; soy porridge is popular, particularly in the North.

These findings correspond with the findings of a 2018 evaluation of the effects of the interventions in the various programmes implemented in Malawi by the Development Fund of Norway and Total Land Care, and their implications on nutrition.¹¹

Some farmers consulted said that their children were no longer so malnourished; others stated that malnourishment was history now. The farmers also said that they did not get tired so easily anymore. They feel stronger, now that they have enough and varied food. Food security and better nutrition are major impacts of the Lead Farmer Extension Approach for those who apply the new technologies.

5.3.2 Improved livelihoods

Livelihoods have improved greatly among the great majority of beneficiaries. Surplus production can be sold, with some of the income often invested in village savings and loans, thereby 'growing' according to the interest on the loans. Such income is of great importance: farmers can now meet their household needs, including buying meat once in a while, and send their children to school. Many have been able to improve their housing with iron sheets for roofing; some have been able to buy livestock, as exemplified through the case studies from Chiwamba and Bwengu.

5.3.3 Empowerment of women

The situation of women has greatly improved through the Lead Farmer Extension Approach. Women who have started with no or little tillage methods no longer have to hoe their soils, or only marginally. This represents a substantial workload reduction. Those with fuel-saving stoves have greatly reduced household fuel consumption, and thus have to carry substantially less fuel wood – a further substantial decrease in their workload.

Through the programme, women have achieved production surplus which they can sell. This income has partly been invested in village savings and loans, and partly used for household needs. With the former, interest for loans is shared as dividends at the end of each year, representing an important source of income for the women. One woman pointed out that when women decide over household income, they tend to prioritize the needs of their children. Thus, income for women may contribute to increased welfare of children.

Income for women also contributes to shifting household power relations. No longer do the women have to ask their husbands for money – instead, it is increasingly so that the husbands ask them for money. Due to these new constellations, there are fewer conflicts in the families.

Women Lead Farmers enjoy respect and recognition in their communities; also women Follower Farmers are respected for their new knowledge and hard work to adapt their farming practices to climate change, for greater food security and better livelihoods. Women LFs explain that they have learned to speak up and to lead others, and that they are not shy anymore. Also women FFs spoke up in the consultations for this evaluation. Both categories of women had clearly been empowered through the Lead Farmer Extension Approach.

5.3.4 Enabling the participation of HIV-affected households and disabled farmers

HIV is widespread in Malawi, and households with HIV-positive members have been actively included in the programme activities. They are included as Lead as well as Follower Farmers. Further, they

10 According to the National Guidelines on Nutrition Care, Support and Treatment for Adolescents and Adults, November 2017. Available at: <https://www.fantaproject.org/sites/default/files/resources/Malawi-NCST-Guidelines-Revised-Nov2017.pdf>

11 Meramo Consulting (2018): Impact of Development Fund of Norway and Total Land Care's Interventions on Nutritional Intake in their respective Implementation Areas in Malawi. Lilongwe: Development Fund of Norway, and Total Land Care. Available at: https://www.utviklingsfondet.no/files/uf/documents/Impact_evaluation_on_nutritional_intake_DF_Norway.pdf

receive extra support in terms of farm input, such as seeds and fertilizers. This was confirmed by the farmers consulted. They mentioned that several of them were also HIV-positive themselves, but they did not want to disclose any details. It was thus not possible to learn more about this form of integration. However, it seems to be functioning well, and is highly appreciated among the LFs and FFs.

The integration of farmers with disabilities follows the same patterns, with support in terms of farm input free of charge. In Bwengu, two farmers with disabilities were consulted. They benefitted not only from the farm input and the new technologies they had learned, but also from the collective spirit that had emerged among the farmers in their group. They would help each other on the farms, thereby establishing a safety-net and a form of support that make it possible to produce more food. This collective spirit was also said to benefit elderly Follower Farmers.

Meeting Henry Gondwe, FF in Kacheche Section in Bwengu EPA, made a deep impression. Due to his disability, he used a wheelchair with pedals, which he operated with his hands. The programme has empowered him, reduced his workload and provided a safety-net where he and his fellow FFs all assist each other. Now Mr Gondwe is able to grow rich harvests in his fields. The programme has substantially improved his food security and livelihoods.

5.3.5 Improved soils and climate resilience

Farmers consulted report substantial improvements in soil quality. Mulching and application of compost manure increase the organic matter in the soils. This stimulates soil life, in turn building soil structures and textures and improving soil fertility. In addition, low or little tilling is particularly efficient in building soil structures. With improved soil structure and texture, water storage capacity is improved, and soil erosion can be prevented. Soil ecologies can be maintained, which in turn is conducive to plant health. Contour ridging and planting of certain grasses around the fields to prevent soil erosion has also proven useful. Pit planting, alone or applied together with other technologies, has been found useful for storing water for the plants, and various methods are applied to maximize the benefits. These were the technologies applied in the areas visited for this evaluation. The effects were apparent

when comparing these fields to neighbouring ones.

As rainfall this year has been adequate, farmers as well as partners pointed out that the differences between fields with new technologies and fields where the new methods were not applied were not as pronounced as in years with drought. The new technologies are highly efficient in dry periods, they said, and they told of how the crops had survived in the fields of Lead and Follower Farmers when crops in neighbouring fields died. In the areas where they are effectively applied, the new technologies together with high-yielding and early-maturing plants have contributed significantly to mitigating the effects of climate change for food production.

Agroforestry and tree restoration are also important means of mitigating the effects of climate change, thereby also restoring ecosystems that contribute food and fuelwood supplies. This was evident in the hills above Bwengu. The signs of landslides due to loss of forest cover were still to be seen among the restored bushes and trees and the new planted ones. The intervention had put a halt to further landslides. Fuelwood harvesting still takes place – but at a much lower level, thanks to the fuel-saving stoves. Farmers had started bee-keeping in the forests with good results; mushroom harvesting was practised; hunting for game may also be a possibility.

As the farmers explained, the impacts on soils, and the mitigation of the effects of climate change, have been impressive.

5.3.6 Impacts on agrobiodiversity and indigenous knowledge

The Lead Farmer Extension Approach seeks to promote crop diversification and the use of open-pollinated varieties instead of hybrids. Through the Lead Farmers, new species have been introduced, such as soy. There is no particular promotion of local agrobiodiversity. Farmers are free to choose which crops to grow; many farmers tend to choose hybrid maize when they can afford to do so, a situation that arises through increased income as a result of the DF interventions. Hybrid maize is heavily promoted by the government, thus also by the extension services, and the yields are normally high. This choice may be understandable from the farmers' perspective, but the use of local varieties of maize decreases when hybrids take over. Moreover, remaining local

varieties of maize tend to get mixed with hybrid maize in areas where hybrids are introduced, resulting in genetic erosion.

Hybrid maize is more prone to pests and diseases; fall armyworm pest (*Spodoptera frugiperda*) has been attacking hybrid maize in several areas of Malawi, also among Lead and Follower Farmers. It is difficult to deal with, and biopesticides do not help much, farmers explained. Thus, they turned to chemical pesticides provided by the government. Some LFs said that they had been offered to promote Dekalb hybrid maize from Monsanto: they would get the seeds for free, and had to place signposts in front of their fields advertising for Dekalb. It is problematic if LFs use their positions to promote Dekalb hybrids among their FFs under DF-funded programmes.

The local diversity of other crops than maize, such as finger millet, pearl millet, sorghum, African yams, and various species and varieties of legumes, used to be high in Malawi.¹² Plants like Bambara nuts (actually a legume) provided important nutrients to the diet. The nutrition values of Bambara nuts are similar to those of soy. Soy has higher yields and higher market value, but Bambara nuts are more drought-resistant and used to be a valuable component of traditional multi-cropping systems as a nitrogen-fixing soil improver. The government has been promoting soy, which is a high-value crop, and Bambara nuts are on the decline. The DF programmes focus on soy, also as part of the nutrition campaign. During the field trips for this evaluation, soy was seen in many fields. Farmers in Bwengu praised it as an important addition to the nutrition of their families, whereas farmers in Chiwamba stressed that they felt uncertain how to prepare food with it, and would like to get Bambara nut seeds.¹³

Local crops are adapted to the environment where they used to be grown. They are normally more resilient to climate change than improved commercial varieties, due to their broad genetic bases, and they are often highly nutritious. Local crops are often considered tasty by the local people, and are normally related to traditions and identity and to traditional knowledge of agriculture. These aspects do not seem to be addressed in the programmes, where the focus has been on

knowledge transfer of new technologies. Jeniffer Njoma, a Follower Farmer in Kacheche Section in Bwengu EPA, showed us a local maize and pumpkin field, grown as a traditional multi-cropping system. She exclaimed, 'Before, we knew nothing about agriculture! Now we have learned a lot!' However, her traditional knowledge, like that of many farmers in the programmes, may get lost.

Plant genetic diversity for food and agriculture provides the central building blocks for present and future plant breeding and agriculture. Conserving and sustainably using such diversity should be a priority for the DF in other programmes. Malawi has ratified the International Treaty on Plant Genetic Resources for Food and Agriculture, and thus, the conservation and sustainable use of crop genetic resources and related traditional knowledge is a concern.

Traditional crops do not produce as high yields as hybrids or other improved varieties. For example, the local Kafula maize matures in only 60 days, which is shorter than for most hybrids, but has lower yields. As research on local crops and varieties has been neglected, it should come as no surprise that their yields are lower. It is vitally important to continue adapting local varieties to changing environmental conditions, and to improve them in line with the priorities of farmers. There are examples of community seed banks, participatory variety selection schemes and other forms of plant breeding that have developed local varieties into high-performing crops, as in Ethiopia and Nepal (supported by the DF). A greater focus on the conservation, active use and further development of local crops and varieties is crucial to maintain this genetic diversity for future generations.

If farmers in the DF programmes feel that their previous knowledge of agriculture has no value, that is not a sound basis for empowerment. To avoid that, the Lead Farmer Extension Approach of knowledge *transfer* should be substituted by an approach of knowledge *sharing*, where local crops and traditional knowledge are valued, and participatory approaches can be found to improve such local varieties, adapting them to changing climate and with higher yields – thereby also strengthening the capacity for seed selection, which is particularly important in drought-

12 I am grateful to Dr Godwin Yindoli Mkamanga, Executive Director, Biodiversity Conservation Initiative, Mzuzu, Malawi, for the information on agrobiodiversity in Malawi, used for this section. The information was provided in an interview on 19 March 2019.

13 This was stated on their own initiative, without the evaluator making any mention of Bambara nuts.

prone areas. Empowerment of farmers with regard to local varieties and traditional knowledge needs to be stimulated, to enable them to choose from an even greater diversity of improved commercial as well as local/ locally adapted crops and varieties (see Recommendations), and to empower them, strengthening their capabilities in seed selection as well as the potentials of local agrobiodiversity for present and future seed and food security.

5.3.7 Outreach beyond Lead and Follower Farmers

An impact that is difficult to measure, but probably significant, is the rate of adoption of SA/CSA technologies among farmers who did not officially participate in a training. In both Chiwamba and Bwengu, the majority of Follower Farmers reported that one or more neighbours/relatives/friends had adopted one or more of the technologies used on FF farms. It is difficult to estimate the outreach to farmers who have not been trained through the programme, and what can be noted so far is probably just a beginning. It takes time for farmers to observe, consider and decide to transform their practices. The FFs will first need to establish the new practices, and a few years before the benefits are evident. From then on it may take another year or two until a neighbour/relative/friend decides to change her/his practices, and actually get started. Since such a significant number of neighbours/relatives/friends have already started changing their practices, there is good reason to believe that this effect will increase in the years to come.

5.3.8 Lead Farmers as messengers in the communities

Lead Farmers have become central persons in their communities for information sharing of many kinds. They are 'used' as messengers by both the agricultural extension service and the ADCs and VDCs. Sending (by mobile phone) or bringing (personally) a message to Lead Farmers for further dissemination is highly efficient and ensures broad outreach. Such services are highly valued by the ADCs, VDCs, AEDCs and AEDOs. The LFs serve as an important link between the extension officers as well as ADCs and VDCs – and the community at large

5.3.9 Overall impact

The programmes have significantly improved the living conditions of the target population. Today at least 60% of the target population have achieved improved food and nutrition security and

livelihoods, thanks to the programmes. The cases presented for this evaluation have been impressive, and we noted how some farmers have managed to more than double the productivity of their fields. As they also managed to increase the areas of production, the overall effect for food security has indeed been remarkable. Diversification of crops has led to improved family nutrition. Marketed surplus production has generated incomes, partly invested in village savings and loans, thereby yielding interest and dividends. Poverty alleviation and improved livelihoods are the key results. Most notably, many participating farmers can now afford to send their children to school. Women have also achieved substantially reduced workload, combined with empowerment due to higher recognition and income. HIV- and AIDS-affected households have been integrated in the programmes, and farmers with disabilities find great encouragement and support through the programmes. As a result of the programmes, local soils have improved greatly in terms of organic content, fertility, structure, texture and water storage capacity. Thereby – and with the new technologies – crop production has become more resilient to the effects of climate change.

There have been several unintended impacts. A negative impact can be noted with regard to reduced agrobiodiversity and neglected indigenous knowledge – but here there are potentials to improve the performance of the Lead Farmer Extension Approach. A positive impact is the significant number of farmers who have not been involved as LFs or FFs, but who have learned from them informally, probably benefitting from the programme. Another positive impact: Lead Farmers serve as information brokers in their communities, linking and disseminating important information from ADCs, VDCs, AEDCs and AEDOs.

5.4 Sustainability

The sustainability of the Lead Farmer Extension Approach has been carefully planned and crafted, so continuation of activities after the end of the programme appears likely. Nevertheless, there are issues related to programme sustainability which need consideration, and which will be raised here.

5.4.1 Motivation to continue and technical sustainability

The farmers consulted for this evaluation all agreed:

They intended to continue also if the programme were phased out. For them the benefits were obvious: it was a matter of survival.

However, they were worried about certain aspects. For example, many Lead Farmers consulted felt that they did not have enough training, and that the training they had received had been given too quickly for them to be able to remember all the important points. Refresher courses were provided only during the second year, on a non-residential basis: more frequent refreshers were called for. Lead Farmers feel they have knowledge gaps, particularly with regard to animal husbandry. They also wanted to be updated about relevant new technologies and felt that the approach was somewhat static. Continuous updating would be important. AEDOs could provide some updating but their knowledge of such technologies varied. It would be good to have a more systematic approach to updating Lead Farmers on new developments.

Some Lead Farmers had too many Follower Farmers. They had never asked how many FFs they could take – that was decided for them. As they at times feel this overburdening and difficult to coordinate with household needs, particularly for women, it is important to find solutions, to take care of the Lead Farmers and to enable sustained motivation for them to continue.

The pass-on programme for livestock was much too small, and it takes too long for all members of a group to receive the livestock they need, as highlighted above. Farmers could not start practising the technologies they deemed most needed for their fields. A solution needs to be found here.

Most pushbikes broke down after few years. The Lead Farmers have not had access to spare parts, so even if they were responsible for repairing their pushbikes, they were not able to. They may also not have known how to do it. Moreover, not all Lead Farmers felt it was their job, even if the agreement they had signed to get the pushbike said so. LFs felt that they had been called to do a voluntary task for the community, and had been given a pushbike to do so – not for any private purposes. Thus, they did not feel responsible for maintenance. The pushbikes were said to be of poor quality; they would easily break down under the weight of a sack of fertilizer.

LFs asked for new pushbikes of better quality, and access to spare parts. Mobility is a core factor in the Lead Farmer Extension Approach, as without mobility it is difficult to uphold activities. This is an issue in need of attention.

Generally, the Lead and Follower Farmers felt that it was too early to phase out the programme. They had only started and collected the very first experiences. It takes time to correct and adjust, and get things on track and into rhythm. Then, once everything is on track and running well, which can be expected, it would be time to phase out, which would call for a good exit strategy. But exiting now would be premature.

In the view of this evaluator, the farmers have highlighted important factors. Activities will probably continue if the programme is phased out now, but the scale and quality are uncertain. To ensure sustained progress, more effort is needed, and a further four to five years would be required to correct and adjust and to ensure long-term sustainability as to quality as well as outreach.

5.4.2 Institutional sustainability

As shown above, the Lead Farmer Extension Approach is well anchored in the local structures of ADCs, VDCs and agricultural extension service, with strong mutual benefits. ADCs, VDCs, AEDCs and AEDOs consulted have confirmed with great emphasis that they will continue to support the Lead Farmers also after the end of the programme.

However, they all wish they could have had some training about the Lead Farmer Extension Approach, the technologies taught to the Lead Farmers, and how they could best support the Lead Farmers. That would have strengthened their capacity to do so. An argument against such an approach is the high turnover, particularly within the agricultural extension service. Nevertheless, a system could be designed to enable also newcomers to access such capacity training, if there can be some kind of network contact with the EPA also after the end of the programme.

Providing for such capacity building would strengthen not only the commitment to support the Lead Farmers after the end of the programme, but also institutional capacity.

A challenge noted in several research reports is the lack of coordination between and among NGOs with regard to Lead Farmer extension. There are examples of several service providers in the same EPA, approaching the same farmers, who are then assigned to more than one organization. These may promote different messages, which is confusing not only for the LF but also for the FFs. At the two sites visited, this did not seem to be a problem, even if more NGOs were present in Bwengu. The AEDC coordinated the interventions and seemed to have been in control of the situation. However, this is not the case in all EPAs, and the problem of lacking coordination is comprehensive, according to research as highlighted above. For efficiency, coordination is necessary at all levels, particularly at the national level among NGOs. However, there are as yet no signs that efforts will be taken to coordinate the NGOs in this regard at the national level. It seems that coordination will have to be initiated from the NGOs themselves.

DF is aware of the challenge of overlapping NGOs with differing messages. As the DF and its partners have a model which has earned great recognition in Malawi and has the potential to spearhead the Lead Farmer Extension Approach in the country, the DF and its partners could take a leading role in this regard, in collaboration with the government (see Recommendations).

5.4.3 Social sustainability

The Lead Farmer Extension Approach is gender-sensitive and provides for the integration of HIV-affected households and farmers with disabilities, as noted above. However, two other aspects need consideration: the distribution of services within the EPAs where the programmes are active, and how to deal with those parts of these EPAs that have not been reached by any intervention.

In EPA sections where the generalist partner collaborates with all specialist partners, synergies are excellent, and the farmers benefit greatly from specialist help in analysing their market opportunities for surplus production and from participating in village savings and loan activities. Youth are organized as Lead and Follower Farmers with access to all these services, offering hope for a bright future. This was impressive. However, not all sections of an EPA have access to such services. The

specialist partners cover vast areas and must select the sections within the EPAs in which to carry out their activities. Other sections with LFs and FFs may not have the benefit of access to such services, or only to one or two of them. As a result of scarce resources, services are unevenly distributed. This should be examined, with a view to achieving equity for all LFs and FFs and in order to maximize the benefits of the Lead Farmer Extension Approach for all.

The programmes normally cover some sections of an EPA but not all. A question raised by all farmer groups consulted concerned reaching out to all farmers in the EPA. They felt sorry for their fellow farmers in the EPA who did not benefit from the programme. In Chiwamba, the situation had led to an unpleasant conflict, where people from one village that had not been targeted by the programme went to the village where new technologies had been introduced, and destroyed a mulching area and stole livestock. The Lead Farmers felt that this was caused by jealousy. There is a need to examine the concept of covering only parts of an EPA so as to be able to reach out to many EPAs. One solution might be to concentrate on fewer EPAs, thus covering all sections. However, it is essential to ensure that there is no overlap with the work of other NGOs, and that efforts are well coordinated.

5.4.4 Financial sustainability

Financial sustainability has been an important condition from the very beginning. The system is based on volunteerism. The Lead Farmers have recognized that their work is done on a voluntary basis. The ADCs and VDCs see it as their task to support the Lead Farmers without any financial compensation. The AEDCs and AEDOs also supporting the Lead Farmers without any financial support being involved. They are committed to doing so, even it should be borne in mind that they are also exposed to other NGOs with differing approaches to Lead Farmer extension and other forms of extension, and that they serve as implementers of various government policies. Expectations regarding support from AEDCs and AEDOs, despite their motivation, should be realistic.

Activities can be expected to continue also after the programme has been phased out. However, achieving high quality and long-term sustainability is a challenge; and more financial investments will

probably be required for extending the programme (e.g. in the form of a new programme) to achieve genuine long-term sustainability. This is partly a result of too tight budgets during programme implementation (also a factor with regard to financial sustainability), as highlighted above, and partly because the time allocated for programme implementation has simply been too short for the societal changes and agricultural transformation sought. If the programme is extended (perhaps in the form of a new programme), these factors should be corrected to ensure long-term sustainability.

5.4.5 Environmental sustainability

Environmental sustainability is a central aspect of the sustainability complex. The Lead Farmers Extension Approach as developed by the DF and its partners has as a core objective environmental sustainability in farming practices – and with substantial achievements, as highlighted in Section 5.3.5. As this has been a key focus of the evaluation report, it is not further elaborated here.

At the other hand, the evaluation has also shown that the interventions can have unintended negative impacts on agrobiodiversity and related indigenous knowledge (see 5.3.6), detrimental to environmental sustainability. As the DF has long experience in promoting community-based agrobiodiversity management, and with considerable success (as shown in evaluations published in 2019 from Nepal and Ethiopia, and 2016 from Malawi), it should be in a good position for dealing with this particular problem, as proposed in the Recommendations below.

6. Recommendations

The DF Lead Farmer Extension Approach has the potential of becoming a beacon in Malawian extension service. Implementation so far has shown how it transforms lives in hunger and poverty to lives with food security, increased income and welfare. Women have been empowered and enjoy better lives. Environments suffering from soil erosion and degradation, water shortages and deforestation have become fertile areas, conserving soil and water and re-establishing vegetation. Such successes hinge on the quality of the provided services. As this evaluation has shown, the quality of the services provided in Malawi is high as compared to invested resources, but still not sufficient to achieve such benefits for all the involved. The quantitative targets have been set too high as compared to invested resources, and the timeframe too short. With a greater focus on quality, more farmers could experience the benefits of the model, and more farmers could probably also maximize the benefits they have already achieved. The recommendations provided here are aimed at highlighting possible solutions.

6.1 Less is more: Consolidation for better quality

The interventions that have been evaluated represent a very good start, but certain corrections and adjustments are needed. It is important to consolidate activities in order to establish adequate quality. Recommendations:

- Expand the interventions in the EPAs in which DF partners are currently present, to ensure that Lead Farmers are adequately trained (see 6.3 below), have a reasonable number of Follower Farmers, that more pass-on livestock can be provided, that there are pushbikes for all Lead Farmers, and that specialist interventions can be secured.
 - The number of Follower Farmers per Lead Farmer should not exceed 15, and the partners should ensure that new LFs are trained to relieve those who have more than 15 FFs today (government recommendation);
 - Livestock should be provided in greater numbers, to ensure that all farmers can

receive the animals they are waiting for within maximum four years. The number of animals provided per farmer should follow government recommendations, e.g. five goats per farmer. However, if the recommendation conflicts with the need to reach out to all farmers who are waiting for livestock within limited budgets, fewer animals could be provided to individual farmers, still ensuring that the total number of animals is at a level that ensures that all farmers within a group who are waiting for animals will have livestock within four years.

- Pushbikes should be of better quality; in any case, there should be a central deposit for spare parts – perhaps with the ADCs; responsibility for maintaining and repairing bikes might be vested with the ADCs or with the VDCs. Some training in pushbike maintenance and repair should be provided, along with a logistical framework to facilitate this function.
- The poorest farmers who cannot afford to buy what they need to get started after a training should have access to a ‘start-up packet’ of seeds and required inputs, such as HIV/AIDS-affected households and disabled farmers.
- Services of specialist partners should be offered in all EPA sections where the generalist partners are active.
- When these improvements have been achieved, already-established sites may be developed into resource sites for farmers from new sites where the approach is to be established. Exposure visits could aim at scaling out with quality. This should seek to cover all sections in the EPAs in which there are Lead Farmer activities, before moving on to other EPAs, which in turn should preferably be located close to established sites.
- Expansion to other EPAs should not be undertaken until the current EPAs have been covered, in terms of improved quality and reaching out to all sections (provided there are no other service providers in the other sections). With expansion, the focus should be on fewer EPAs, to make a greater difference and to ensure that all sections

in the EPAs are covered. The focus on gender balance and on women's empowerment must be maintained.

- Establish what is necessary to ensure high quality over time, and dimension LF and FF targets thereafter. Instead of starting out with a given number of farmers to be reached, the resources available should form the starting point. There should be a clear understanding of what needs to be in place to ensure quality, and this should serve as the basis for dimensioning the project.
- The monitoring system for documenting goal achievement should establish clearer criteria with regard to measurements to be carried out; these should be easy to apply on the ground. Lists of FFs per LF and data related to the former should be provided to the DF each year. These lists should differentiate between new FFs and previous ones, to enable monitoring of drop-outs and newcomers from year to year. The DF should make random visits more frequently, visiting LFs with all their FFs – in their respective fields. Further, the DF should continue working closely with its partners to improve the monitoring system.
- A follow-up evaluation after the proposed consolidation period should, in addition to a qualitative focus as for this evaluation, include a quantitative component in order to both *measure* the achievements and to *explain* them. Sufficient resources should be allocated for such an evaluation, as a basis for further development of the approach.

6.2 Achieving lasting change takes time

Five years is a very short time in terms of societal change and agricultural transformation. It normally takes up to four years from the start-up of the programme and until the Lead Farmers have established their preferred technologies at full scale, and the benefits can be observed. For Follower Farmers, it takes even longer, as they will first need to be convinced by the benefits achieved by the Lead Farmer. Various other issues, gaps and needs, need to be addressed and solved:

- The programme sites established under SALFP and MAMO are still very 'young'; they should not be left on their own, but be followed up for another four years at least.
- To establish well-functioning Lead Farmer extension in an EPA, a timeframe of 8–9 years

is recommended, and with a well-planned exit strategy.

- After programme support is phased out, Lead Farmers should be invited to participate in a network for information sharing and updating, possibly through mobile phones, reaching other Lead Farmers and AEDOs and linking established sites together with new sites.
- DF and partners may harvest a much greater and more sustainable impact if they promote high-quality development over enough time; examples could be showcased for other organizations
- In this context there is scope for greater coordination and reciprocal learning between and among DF implementing partners, e.g. through exposure visits and workshops.

6.3 Training for quality

Changes are needed as regards the training of Lead Farmers, which has been far too rapid and with too much content crammed into a short timeframe. Recommendations:

- All Lead Farmers should be provided with basic training as well as refresher trainings. Only those who have had such training should be appointed as Lead Farmers.¹⁴
- Basic training should be split in three parts, each of 4–5 days' duration, and with time between each part, to allow practice, reflection and exchange.
- Refresher trainings should be held every year, perhaps with study groups organized in-between.
- All trainings, basic as well as refresher, should preferably be organized as residential trainings, which is considered more efficient and valuable.
- In the trainings, greater emphasis should be put on livestock management, crop diversification and nutrition, as well as on updating on new technologies, such as irrigation.
- ADCs and VDCs, as well as AEDCs and AEDOs in the EPAs where DF and partners are active, should be invited to the trainings provided for Lead Farmers.
- The DF *Lead Farmer Extension and Training Guide on Sustainable Agriculture* should be updated and provided to all lead farmers as a reference guide (in local languages); likewise to the ADCs and VDCs as well as to the AEDCs and AEDOs in the EPAs where the DF and partners are active.
- As technologies are in continuous change, updating should be put in system, e.g. through a

¹⁴ There were a few cases of Lead Farmers practising technologies they had just learned in refresher trainings, as they had not been offered basic training. They had probably replaced Lead Farmers who had stepped down after the last basic training had been provided.

-
- mobile phone-based backstopping network.
- For more equitable access to training, consideration should be given to adult literacy schemes.

6.4 Equipment as incentives

Volunteerism is strong, and seems well-established, but it should not be overstretched. Incentives may be considered, but should be in line with government recommendations, rather than creating contests between service providers. Consideration may be given to basic equipment to enable Lead Farmers to do their job, such as:

- a solid pushbike (and accessible spare parts)
- T-shirt, cap and bag
- a copy of the DF *Lead Farmer Extension and Training Guide on Sustainable Agriculture*

6.5 Remedying the missing link

Awareness of crop genetic diversity is a missing link in the Lead Farmer Extension approach, as explained above. It is essential to mainstream awareness – within the DF, among its partners and among donors – concerning agrobiodiversity and its importance for food and nutrition security in times of climate change, and to act accordingly:

- foster pride in local crops and indigenous knowledge
- switch from knowledge transfer to knowledge sharing and participatory approaches
- ensure that local seeds are available; consider establishing systems to enhance access
- offer training in participatory varietal selection and multiple cropping systems
- establish systems for exploration, adaptation and improvement of local crop varieties valued by farmers, and multiplication of seed, through participatory methods, e.g. as applied in Ejere community seed bank in Ethiopia and supported by the DF
- invite Biodiversity Conservation Initiative as specialist partner, to mainstream this work
- explore the possibilities of connecting with Farmers' Field Schools to conduct some of these activities.¹⁵

6.6 Connect to other approaches

In order to maximize the benefits of the various approaches to extension, it is important to get an

overview of what is being implemented and where. Consideration should be given to the complementarity and possible synergies between the DF Lead Farmer Extension Approach and other approaches, such as existing Farmer Field Schools. Recommendations:

- connecting where relevant is important, with a particular view to the possibilities of enhancing the capacity of various crops
- ensure continued connection with village savings and loans and business training as well as youth mobilization
- connect to existing mobile phone-based extension services and/or develop simple approaches to introducing such services for updating on technologies and giving advice (DF is already discussing possibilities with relevant digital providers).

In addition, community-based agrobiodiversity management is an approach that shares some features with the extension services (see 5.3.6). It should be included among the approaches to which connection should be sought, to maximize the benefits for climate-smart farming technologies and improved food and nutrition security. Farmers' Field Schools could provide a bridge in this regard (see footnote 15).

6.7 Strengthening government extension services and coordination

Enhance the leadership role of the DF and its partners among non-state actors to help in coordinating interventions in the extension services between and among them, and with the government, with emphasis on the Lead Farmer Extension Approach and the integration of other approaches, such as Farmer Field Schools, community-based agrobiodiversity management and mobile phone-based approaches.

- Invite the Director of the Department of Extension Service of the MoAWID to a meeting to present the work of the DF and its partners; propose a national coordination forum for organizations involved in Lead Farmer extension (see below); and ensure that the DF and its partners are involved in relevant decision-making processes at the national level
- Establish a National Coordination Forum for organizations involved in Lead Farmer extension

¹⁵ Oxfam Novib and partners have had excellent results from using Farmers Field Schools to enhance community-based agrobiodiversity management to achieve food security and poverty alleviation. See: <https://www.oxfamnovib.nl/donors-partners/about-oxfam/themes/food,-land-and-water/sowing-diversity-is-harvesting-security-sd-hs> and <https://www.sdhsprogram.org/>

in Malawi, in collaboration with the government. The forum should enable top-level managers to harmonize their approaches in terms of codes of conduct for incentives to Lead Farmers and contents of their trainings, so as not to confuse them with different messages. The forum should also help to improve the distribution of services, how to reach out to remote areas, and in general ensure coordinated action.

- Enhance the role of the District Agriculture Extension Coordinating Committees in districts where the DF is active – in order to keep track of the organizations involved in Lead Farmer extension in the respective districts, to safeguard an even distribution of services without overlap, to ensure outreach to remote areas and to follow up on the consolidated approaches following from the national coordination forum proposed above.¹⁶
- Ensure that government extension workers in the EPAs where the DF implementing partners are involved are invited to LF trainings; in general, ensure close collaboration with EPAs.
- Lobby for more government support to government extension services, and relevant measures.

In developing a leadership role as described above, the DF should seek close collaboration with its implementing partners. These organizations possess comprehensive knowledge and experience with regard to Lead Farmer extension in Malawi and have a deep understanding of challenges as well as opportunities. As a team, the DF and its implementing partners have a considerable potential for transforming Lead Farmer extension in Malawi along the lines of the government policy, and for maximizing the advantages of having so many service providers. The team could seek advice from the experts on extension service in Malawi, who represent a rich body of knowledge. By utilizing their potentials, the DF with partners could – in addition to their own interventions – help extension service providers in Malawi to reach out to many more farmers in a better coordinated and consolidated way, thereby maximizing the effects of their efforts aimed at improving food and nutrition security and livelihoods in rural Malawi.

¹⁶ An important point of departure here will be the District Agricultural Extension Service System (DAESS) Implementation Guidelines of November 2006. See also Masangano et al., 2016.

Attachments

A. Presentation of Lead and Follower Farmer beneficiaries

While in Chiwamba (Lilongwe Rural) and Bwengu (Mzimba North), the evaluator had the opportunity to visit Lead and Follower Farmers together with the translator, Thomas Chigowo (University of Livingstonia, Mzuzu). These visits provided important insights into the impacts of the DF Lead Farmer Extension Approach. Here follows a presentation from some of the visits.

Visiting Jeniffer Allisoni, Lead Farmer in Chiwamba, Lilongwe Rural

Jeniffer Allisoni lives in a small village near the centre of the Chiwamba area, together with her husband and three children. She was selected as Lead Farmer in 2014 and attended a five-day training course. Now she has 15 Follower Farmers and greatly enjoys her work as a Lead Farmer. Her husband is proud of her: he says she has learnt a lot and that her work has improved their lives.



Jeniffer Allisoni with goat kid.

Jeniffer has learned how to make and apply manure compost and mulching, and to construct contour ridging and do pit planting. She also learned goat rearing and agroforestry. She has applied these technologies in different combinations throughout their landholdings. She has a demonstration plot for teaching purposes, and once in a while she arranges field days.

A few years earlier, Jeniffer received two goats through the pass-on system. When the first offspring arrived, these were passed on to a Follower Farmer, under the terms of this arrangement. The next two goat kids belonged to Jeniffer and her husband, who now have four goats. When we visited, we saw the goats contentedly grazing on a green bush near the house. Jeniffer and her husband have constructed an improved goat shed, which is not only comfortable for the goats, but also enables easy harvesting of their droppings for the production of manure compost. The compost pit established on one side of the goat shed was full of composted manure. Jeniffer explained that they bring the composted manure to the nearby maize field by ox-cart. She said that the manure is very efficient, even better than cow dung, as less manure is needed for each plant.

We visited the maize field, which was thriving, the plants standing strong and deep green, full of maize cobs. Jeniffer explained that they had stopped hoeing. Now they simply mulched the field, and then sowed seeds on a one-to-one basis, putting each seed down in the ground, with around 25 cm between seeds. This is closer than usual, and also the rows are narrower. They save much seed this way, but can still harvest more from the same land. Jeniffer tried intercropping with pumpkin, but the maize plants were apparently so hearty that they shadowed for the pumpkins, and the pumpkin harvest was low. Goat manure was used efficiently in the field, but since they still have few goats and the manure is limited, Jeniffer adds some chemical fertilizer.



Jeniffer Allisoni and husband in front of their maize field.

Jeniffer explained that the new methods save considerable labour, not least because hoeing is no longer needed. Also important is the fuel-saving stove she has installed in her house, as part of the Lead Farmer programme. It requires very little fuelwood, much less than the open fires they used to have. As fuelwood is scarce and must be carried a long way, this is a great improvement. Jeniffer herself is involved in stove-making for her Follower Farmers. She took us to a neighbouring Follower Farmer and showed us her stove. The water was boiling nicely, even though only very little fuelwood was burning in the stove. The Follower Farmer was very pleased, as this improvement saved her a lot of work as well as being nature-friendly.

-Our lives have changed considerably after I became a Lead Farmer, Jeniffer told us. -We have lots of harvest, much more than before. We never experience food shortages now. Instead we have a surplus which we can sell, and from that income we can buy clothes, meat and other things for the household, and we can send our children to school. We've even built this new house, she said and pointed to the newly constructed dwelling. -It's much better than the small hut we had before. And we've been able to buy furniture, including a bed with a mattress. Now we are planning to invest in irrigation, she said.

Jeniffer added that there are occasional food shortages in the neighbourhood, but since she and her husband have surplus production, they can now assist others with food.

Visiting Lead Farmer Esther Msiska with some of her Follower Farmers in Bwengu, Mzimba North

Esther Msiska lives in a village in Kacheche Section, a lush area in the foothills of Bwengu, Mzimba North. We met her together with many of her Follower Farmers as well as members of her family.



Esther Msiska shows her maize field.

Esther became a Lead Farmer in 2014. In the course of 2015 she managed to transform her fields through the new technologies she had learned at the five-day training course. She practises pit planting, mulching, manure making/application, irrigation and agroforestry.

Her maize field was impressive, with strong, deep-green plants, full of maize cobs. Esther planted her field using a one-to-one system, like Jeniffer in Chiwamba, with mulching and intercropping. She also applied organic fertilizers, with the addition of a small amounts of chemical fertilizers. For each plant, she would use one bottle capful of chemical fertilizers, mixed into the organic fertilizer and placed in the hole for the seed. We saw some pumpkins planted in-between, but also here they looked weak,

probably because they were in the shade of the flourishing maize plants. However, there were also a few Tephrosia trees (*Tephrosia vogelii*) in the field. These small trees, known for their nitrogen-fixing properties, are intercropped with other plants, and the falling and harvested leaves are used as a source of green manure. There were also soybeans around the maize crop.

-The best thing about sustainable agriculture, Esther explained, is that you can harvest crops even under climate change. We had a dry spell a few weeks ago, and the plants weren't affected - there was always enough moisture, she emphasised.

Esther is now self-sufficient in food. She finds the new farming system very encouraging and feels sure that she will continue with what she has learned. Now she has much more maize than before. Before she got 400 kg from the field she showed us, which was around 0.4 hectares, and now she can harvest 750 kg!

As recommended, around the field she had planted grass along the ridges that she had established, to stop soil erosion. The neighbour's maize field looked quite different, with small plants, yellowish leaves, small maize cobs and probably a much lower yield. Esther laughed and said that he would probably become one of her Follower Farmers next year.



Great differences between the maize field of the neighbour (left) and that of Esther Msiska (right).

Some years back, Esther received three goats through the pass-on system. She passed on the first three goat kids to a Follower Farmer. Now she has 10 goats of her own, even after selling some of the offspring.

Esther took us to visit one of her Follower Farmers, Elina Zimba, who showed us her field. Elina uses pit

planting, with two types of pits. She applies organic manure, and, since she has enough manure, there is no need for chemical fertilizers. Before starting as a Follower Farmer, she would harvest around 60 kg from the field she showed us – now she harvests 150 kg. Even when there is a dry spell, she has a good crop, she explained. On other parts of her farm, she uses mulching. She now uses only very little chemical fertilizers.

Elina has benefited greatly, she told us. Now she does not need to beg for anything from other villagers. She can budget according to her needs. She no longer has to carry heavy loads of fuelwood from the forest, because she has a fuel-saving stove now. Moreover, her child is healthier since Elina introduced the six food groups she learned about through the programme.

We then visited the house of Esther Msiska, where many Follower Farmers were gathered, as well as family and relatives. Among the Follower Farmers was Wayious Mkandawire, the VDC Chair. He was very positive to Esther's work and was glad to be one of her Follow Farmers.

Esther told us that she has 30 Follower Farmers, all living close by. They practise conservation agriculture because of the effects of climate change. They are involved in a pass-on programme for goats; some of them do bee-keeping with collective marketing through AICC. They are also engaged in village savings and loans clubs through MUSCCO, and the younger ones are active in a youth group of NfYD.

As a Lead Farmer, Esther teaches her Follower Farmers in a group, using her own farm for demonstrations. She has a demonstration plot and said that hands-on practical training is the most effective way of teaching, particularly for the elderly. She appreciates this opportunity and hopes that things in the community will change for the better. Esther is young, but she has many Follower Farmers who are older than herself; some are quite elderly. She is proud to be their Lead Farmer and to teach them, and proud of being able to assist the community. All her Follower Farmers apply the methods they have learned on their own land.

Esther has a husband and three children, and greatly appreciates the benefits that the new technologies

have brought to her family. Now she is able to mitigate the effects of climate change and produce enough food. Previously, there were times when her family experienced food shortages and hunger, but since 2015 there have been no serious food shortages – a few very brief periods, but not as long as before. Even with the drought last year, her family did not have a serious food shortage, although many other families experienced hunger. Since 2015 Esther has generally managed to harvest a surplus.

Livelihoods have improved greatly. With the income from selling the surplus, Esther and her husband can pay the school fees for their three children, they can buy the household items they need, and can invest in village savings and loans, receiving a dividend at the end of the year. With that money, they are able to buy the fertilizers they need.

However, Esther wishes that she had received more training. She does not feel that she knows enough about the agricultural methods and technologies she has learned. Also, she explained, she sometimes forgets. Also, she would like to learn about additional matters, like poultry rearing and cattle husbandry.

Esther pleaded for the continuation of the programme, because there were so many farmers in her EPA who had not yet been reached. If the project could be prolonged, she also wished that the FYF staff could share their knowledge on climate change – on how it evolves and more on how to counter its effects.

Jeniffer Njoma, Follower Farmer of Esther Msiska, joined us in our conversation. She assists Esther in her Lead Farmer duties. Jeniffer told us that she practises sustainable agriculture and has embraced it wholeheartedly. The FYF provided her with three pigs: one male and two females. These multiplied into 13 pigs. She sold three of them, so she now has 10. Jeniffer went on to explain that she used to live in poverty, without even a proper house. The roof leaked. After becoming a Follower Farmer, she was able to buy a new roof of iron sheeting. She can also buy household items that she could not afford before. She is very happy about all this. If the programme continues, she will make even more progress, of that she is sure. She hopes that also others in the EPA who have not yet had the chance to join the programme will be able to benefit as well.



Jeniffer Njoma in a traditional multi-crop field with local maize and pumpkin varieties.

As we went through the village down to the road, many people accompanied us. At the road, the women started to dance and sing joyfully: *-We are farmers, and because we are farmers and work hard, we will not die of hunger.*

Visit to the field of Brian Kumwenda, Bwengu EPA, Mzimba North, 17 March 2019

Participant: Brian Kumwenda, Lead Farmer

Brian is a real researcher. He has used three different types of pit planting, to compare and find out what works best. In one pit he has four plants, in another he has two plants growing quite tightly together. In the last field is has small one-to-one pits. The pits help to retain the moisture needed for the plants. It is important to sow when it is about to start raining, he told.

For his pits, Brian uses manure, including human manure, and chemical fertilizers. He applies fertilizers twice. The first time he uses manure and the second time urea as a top dressing. Between the pits, he has planted soya, which binds nitrogen in the soil.

In other pits he uses mulching. This is very good, he explained, because it increases the organic content of the soil.



Brian Kumwenda in his maize field.

The maize cobs were huge. He explained that, before joining the programme, he used to harvest around 150 kg from the plot where we were staying. Now he harvests 300 – 420 kg, and of good quality. Part of the explanation is also that he has switched from local crops to hybrids from Monsanto. As he has been invited to showcase the hybrids in his locality,

he got the seeds for free. There were signposts in front of his fields advertising for the seeds.

Brian has his own goats (not through the programme). He is involved in agroforestry and irrigation. He has 10 Follower Farmers, whom he teaches through demonstrations in the field. He also visits them, and they visit him.

So much has changed in his life, Brian told us. At his farm they are living very well. Earlier, they experienced food shortages, but no longer. Sometimes they even have meat, which was scarce before. Through the savings and loans, he has been able to establish a grocery shop. His income is very much better now. He has three children and the two eldest attend school.

Visit to the field of Mapopa Harawa, Bwengu, Mzimba North, 17 March 2019

Lead Farmer Mapopa Harawa was standing in his field, surrounded by his Follower Farmers Jacob Khonje, Adam Nyasulu, Owen Khonje and Levi Mkandawire. The field was lush, with strong, green plants full of big maize cobs.

Mapopa started out as a Follower Farmer in 2014. In October 2018, he advanced to become a Lead Farmer. After the training, he approached the village chief, and sat down together with him to develop a joint strategy. Then he started.



Mapopa Harawa surrounded by some of his follower farmers.

The technologies Mapopa uses include conservation agriculture, manure preparation and application, minimum tillage and mulching. Some of his Follower Farmers have goats, but Mapopa himself is still waiting to receive goats through the pass-on system. His family has a fuel-saving stove, which reduces workload and fuel consumption.

Mapopa plants his maize one-to-one, with manure and fertilizer only in the hole for the seed. He uses organic fertilizer and some chemical fertilizer as a top dressing, the latter only one bottle capful. Mapopa uses pit-planting technologies, minimizing the spacing according to recommendations and applying the methods he has learned. Previously, using local maize and the old technologies, he used to harvest about 600 kg from the field we visited. After switching to CA /CSA methods and hybrids, he can harvest 1,650 kg from that same field. Now he has so much food that he can assist others when they run low. Mapopa applies the new technologies to all of his farmland.

Also, Mapopa's field has signposts advertising Monsanto hybrid maize. Like Brian, he received the seed for free from Monsanto, in return for advertising for Monsanto through signposts in his field.

Mapopa and his family have enjoyed many benefits from the new technologies. They are also very happy to be able to preserve the soil. Mapopa applies contour ridging to prevent soil erosion. He also uses green manuring: in the field, he has Tephrosia trees (*Tephrosia vogelii*) with leaves which are valuable for that purpose. He also has soya plants, which provide nitrogen fixation, in combination with the maize. The soya seeds came from the FYF.

The FYF had explained to the Lead Farmers that it was not enough to drink tea in the morning. Food is important, and soy porridge is very nutritious. That made Mapopa think about nutrition in general, and how important it is to our health, not least for children. He was taught about the six food groups which are needed to live healthy lives; he appreciated the recipes they received, which have helped the family to prepare good meals.

Mapopa is married and has three children. The oldest two attend school; the smallest is still too young. The lives of his family and the families of his Follower Farmers changed greatly after the introduction of

the new farming technologies. *-Before, my family complained that they could not have meat. Now we have food from all six group. Before, we experienced hunger, but not after I joined the programme. Before, we could not meet the household needs, because we did simply not have enough money. All that has changed. Now we can send our children to school and meet our household needs,* He said. He went on to explain: *-Now we don't need to buy maize, we can sell it. We can help others who don't have food. We've even bought a second bike. And we were able to buy our own goat, for 1500 Kwacha. From one goat we got 12 goats. Life has really changed! But this is just a beginning,* he concluded. He was very optimistic about the future.

Mapopa has now 27 Follower Farmers. He is quite young, whereas most of his Follower Farmers are older, including the village chief. They come to Mapopa's field to learn whenever they want. After harvest, they meet frequently at his farm. In addition, and perhaps more importantly, they meet each Tuesday in the field of one of the farmers, to work together there. This way they learn and exchange along the way, and help one another. The Follower Farmers have received the training with an open heart, Mapopa told us.

Mapopa has had five days of training in details and practices. But this was too much at once, he said. It would be better to break it into several parts, and practise in-between. Every month would be good, he felt.

His Follower Farmers confirmed that the new technologies had already impacted on their lives. They said it was a relief from the workload they used to have, and that now they got better yields. However, they had joined in October 2018, a good year for rainfall, so it remains to be seen what the benefits will be in a longer time perspective. They felt that the Lead Farmer programme had just started, and hoped that it would be extended, so that they could gain more experience and that many more farmers in their EPA could benefit. Other farmers from their EPAs are looking to them, and may wish to start up next season, so it would be a pity to stop the programme. More farmers would surely want to join.

Finally, Mapopa and his Follower Farmers invited us to come back next year to see the transformation: *-You'll see great changes,* they announced proudly.

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Available at: <https://cepa.rmportal.net/Library/government-publications/Agricultural%20Extension%20in%20the%20New%20Millennium-%20Towards%20Pluralistic%20and%20Demand%20Driven%20Services%20in%20Malawi%202000.pdf>

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Available at: <http://compendium.g-fras.org/component/phocadownload/category/53-malawi.html?download=305:the-district-agricultural-extension-services-system-implementation-guide>

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context of a heavily subsidized input system: The case of Malawi'. *World Development* 105, pp. 25–47

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Ragasa, Catherine and Chiyu Niu (2017): *The State of Agricultural Extension and Advisory Services Provision in Malawi. Insights from Household and Community Surveys*. Malawi Strategy Support Program Technical Report. Washington DC: International Food Policy Research Institute.

Ragasa, Catherine, Noora-Lisa Aberman and Cristina Alvarez Mingote (2019): 'Does providing agricultural and nutrition information to both men and women improve household food security? Evidence from Malawi'. *Global Food Security* 20 (2019) 45–59.

C. List of interviewees

During the period from 12 until 20 March 2019, 26 meetings/interviews were conducted in Malawi. All together 200 persons were consulted: 99 were female and 101 were male. Some of the interviewees were consulted more than one time. 137 farmers were consulted: 74 were female and 63 were male.

12 March 2019:

Meeting with the Development Fund of Norway, Malawi office

1. Victor Katchika-Jere, Country Representative, Development Fund, Malawi Office (M)
2. Mahara Nyirenda, Agriculture Program Officer, Development Fund, Malawi Office (M)
3. Grace Takomana, Nutrition and Gender Officer, Development Fund, Malawi Office (F)

12 March 2019:

Meeting with partners of the Development Fund at the DF office in Lilongwe

1. Leonard Kamwanja, Executive Director, TAPP (M)
2. Esmie Mataya, Project Manager, Heifer International (F)
3. Leroy D. Banda, Head of Programmes, MUSCCO (M)
4. Lovemore Mtalimanja, Project Coordinator, MUSCCO (M)
5. Jacob Linde, Monitoring and Evaluation Officer, TAPP (M)
6. Wellington Phewa, Programme Manager, Mzuzu ADD (M)
7. Chimwemwe Soko, Director, Find Your Feet (M)
8. Winfred Chanza, Head of Programmes, TAPP (M)
9. Sosten Chiotha, Director, LEAD (M)
10. Leonard Chimwaza, Programme Manager, AICC (M)

12 March 2019:

Meeting with experts from LUANAR at Sunbird Lilongwe Hotel

1. Dr. Daimon Kambewa, Associate Professor of Extension Studies, Lilongwe University of Agriculture and Natural Resources (LUANAR) (M)
2. Dr. Catherine Mthinda, Senior Lecturer in Extension and Gender, Lilongwe University of Agriculture and Natural Resources (LUANAR) (F)

13 March 2019:

Meeting with expert from LUANAR

1. Dr. Tasokwa Kakota, Senior Lecturer, Basic Science Department, Lilongwe University of Agriculture and Natural Resources (LUANAR) (F)

13 March 2019:

Meeting with Malawi Forum for Agricultural Advisory Services (MAFAAS) at Sunbird Hotel Lilongwe

1. Dr. Charles Masangano, Chairperson Programmes Committee, Malawi Forum for Agricultural Advisory Services (MAFAAS) (M)

13 March 2019:

Meeting with representative of the Royal Embassy of Norway

1. Jan Erik Studsrød, First Secretary, Agriculture & Environment, Royal Embassy of Norway (M)

14 March 2019:

Meeting with Lead Farmers in Chiwamba, Lilongwe Rural

The meeting was conducted in two parts: One for all the Lead Farmers and a separate meeting after that for the female Lead Farmers.

1. Legna Jester (F)
2. Manjaro Manyozo (M)
3. Gereson Mdimba (M)
4. Mwaiwawo Airkizanda (F)
5. Ackson Kaluzi (M)
6. Esme Tumeyo (F)
7. Senthani Limison (M)
8. Lezimo Buieyo (F)
9. Emma Black (F)
10. Eletina Japi (F)
11. Fanny Kayela (F)
12. Leonard Ganizumi (M)
13. Febe Chilunje (F)
14. Frorence Sonai (F)
15. Kelemesia Zefenic (F)
16. Solo Moteni (F)
17. Jonick Rabson (M)
18. Dalison D. Msiya (M)
19. Heleks Ekeloni (M)
20. Jonafari Masautso (M)
21. Jackson Timothy (M)
22. Phiran Kulinji (M)
23. Halisoni Kalichi (M)
24. Linily Divala (F)
25. Letiya Jenti (F)
26. Leainati Lembani (F)
27. Clement Divehons (M)

14 March 2019:

Meeting with Follower Farmers in Chiwamba

The meeting was conducted in two parts: One for all the Follower Farmers and a separate meeting

after that for the female Follower Farmers.

1. Masitala Kanyamule (M)
2. Gibiyele Moleseni (F)
3. Adamu Eanda (F)
4. Kamuno Fakson (M)
5. Maganizo Bitiyele (M)
6. Mazuzo Jazele (M)
7. Mercy Chikankneni (F)
8. Devison Mziye (M)
9. Charles Chindidi (M)
10. Adamu Lemani (M)
11. Thokozani Kapinda (M)
12. Nikisoni Adisoni (M)
13. Mika Banana (M)
14. Jefery Frackisoni (M)
15. Kidotipeza Letiyavi (F)
16. Mimongepo Gulazo (F)
17. Gezina Tsoka (F)
18. Lusiya Dikisoni (F)
19. Jesituna Dinisoni (F)
20. Namauya Dikisoni (F)
21. Tanjane Mafula (F)
22. Eietina Chewu (F)
23. Zofina Cinduwu (F)
24. Dozofe Chisale (F)
25. Sofeieti Chowa (F)
26. Holiya Lozeke (F)
27. Enifundo Bitiyele (F)
28. Veneside Chigwe (F)

14 March 2019:

Meeting with the AEDC and AEDOs in Chiwamba

1. Dalicken Mlima, AEDC (M)
2. Charity Malanga, AEDO (F)
3. Janet Mulomole, AEDO (F)
4. Debra Bro, AEDO (F)
5. Memory Banda, AEDO (F)
6. Linda Kamtozo, AEDO (F)
7. Chivomo Phiri, AEDO (F)
8. Frydon Z. Kawale, AEDO (M)
9. Meckson Chaphukiwa, AEDO (M)
10. Iness, Mtanga, AEDO (F)
11. Daud Shema, AEDO (M)
12. Chikondi Solomon, AEDO (F)
13. Martha Shani, AEDO (F)

15 March 2019:

Meeting with representatives of VDCs and ADCs in Chiwamba

1. Erwick Kaunguza, ADC Chair, Mseche VDC (M)
2. Tomasi Chombo, ADC Treasurer, Mwatenje VDC (M)
3. Balon Etizala, VDC Chair, Kabande VDC (M)

4. Henderson Lufeyo, VDC Chair, Kafulatira VDC (M)
5. Kesmina Mamsen, VDC Chair, Chapata VDC (F)
6. Boricca Samueli, VDC Vice Chair, Kafulatira VDC (F)
7. Gladson Before, VDC Chair, Chinzezeta VDC (M)
8. Haskiel Doctor, VDC Chair, Kawale VDC (M)
9. Daniel Chitsichi, VDC Chair, Komkuzi VDC (M)
10. Lyson Ganizani, VDC Vice Chair, Mankhanza VDC (M)

15 March 2019:

Meeting with members of the Network for Youth Development (NfYD)

1. Esinta Kapulula, Member and Follower Farmer (FF) (F)
2. Landuan Lemitala, Member and FF (M)
3. Gladys Jentchitonde, Member and FF (F)
4. Chiyambeni Chikankheni, Member and FF (M)
5. Juliyana Aliberito, Member and FF (F)
6. Alice Chifuko, Member and FF (F)
7. Mike Dinoss, Member and FF (M)
8. Enock Chitonde, Member and Lead Farmer (LF) (M)
9. Aida Bison, Member and FF (F)
10. Chimwemwe James, Member and FF (M)
11. Ericana Dibase, Member and FF (F)
12. Chikondi Manuel, Member and FF (F)
13. Tuzayami Niede, Member and FF (M)
14. Hackison Libanje, Member and FF (M)
15. Lenana Bandar, Member and FF (F)
16. Osimani Limisoni, Member and FF (M)
17. Malekuno Mbeza, Member and FF (M)
18. Matruda Kamuneie, Member and FF (F)
19. Jouadi Tsenifola, Member and FF (M)
20. Alexander Chasendera, Member and FF (M)
21. Mena C. Banda, Member and FF (M)
22. Erifasa Bolesi, Member and FF (M)
23. Nolia Kalima, Member and FF (F)
24. Lucy Ginizoni, Member and FF (M)
25. Mafero Khamizi, Member and FF (M)
26. Mayamiko Sinthani, Member and FF (F)
27. Emily Jenti, Member and FF (F)

15 March 2019:

Farm visit in Chiwamba

1. Jeniffer Allisoni, Lead Farmer (visited together with husband, relatives and follower farmers)

15 March 2019:

Debriefing with TAPP, NfYD, AICC and MUSCCO

1. Agatha Njunga, Project Manager, NfYD (F)
2. Funny Nkhunda, Field Officer, AICC (F)
3. Rodwell Kamangadazi, Field Officer, MUSCCO (M)
4. Winfred Chanza, Head of Programmes, TAPP (M)
5. Jacob Linde, Monitoring and Evaluation Officer, TAPP (M)

15 March 2019:

Meeting Ministry of Agriculture, Irrigation and Water Development (MoAIWD), Extension Department at Sunbird Hotel Lilongwe

1. Dr. Jerone Chimigonla-Nkhome, Director of Agriculture Extension Services, MoAIWD

17 March 2019:

Meeting with the AEDC and AEDOs in Bwengu EPA, Mzimba North

1. Patrick Kanyika, AEDC, Bwengu EPA (M)
2. Jaten Kanagho, AEDO, Bwengu EPA (M)
3. Charity Afonso, AEDO, Bwengu EPA (F)
4. Allen Mhanzo, AEDO, Bwengu EPA (M)

17 March 2019:

Meeting with VDCs and ADCs in Bwengu

1. Edrin Msowoya, ADC Chair Person (F)
2. Flolesi Nyilenda, VDC Chair Person (F)
3. Aina Chirwa, VDC Secretary (F)
4. Godfrey Urkukle, VDC Member (M)
5. Elina Mzumara, VDC Member (F)
6. Jacob Singini, VDC Chair (M)
7. Jessie Mbale, VDC Chair (F)
8. Sabina Banda, VDC Member (F)
9. Wayious Mkandawire, VDC Member (M)

17 March 2019:

First farm visit in Bwengu EPA, Mzimba North

1. Esther Msiska, Lead Farmer (F)
2. Elina Mzimba, Follower Farmer (F)
3. Jeniffer Njoma, Follower Farmer (F)
4. Wayious Mkandawire, Follower Farmer (and VDC Chair) (M)

17 March 2019:

Second farm visit in Bwengu EPA, Mzimba North

1. Brian Kumwenda, Lead Farmer (M)

17 March 2019:

Third farm visit in Bwengu EPA, Mzimba North

1. Mapopa Harawa, Lead Farmer (M)
2. Jacob Khonje, Follower Farmer (M)
3. Adam Nyasulu, Follower Farmer (M)
4. Owen Khonje, Follower Farmer (M)
5. Levi Mkandawire, Follower Farmer (M)

18 March 2019:

Meeting with Lead Farmers in Bwengu EPA, Mzimba North

The meeting was conducted in two parts: One for all the Lead Farmers and a separate meeting after

that for the female Lead Farmers.

1. Maggie Phiri (F)
2. Florence Mziya (F)
3. Patricia Mkandawire (F)
4. Voster Kumwenda (M)
5. Mapopa Harawa (M)
6. Kingster Gama (M)
7. Ester Msiska (F)
8. Ester Mdolo (F)
9. Catherine Mwale (F)
10. Esta Wankhama (F)
11. Witness Ngwira (F)
12. Joyce Mhango (F)
13. Brian Kumwenda (M)
14. Kamalizga Mkandawire (M)
15. Rinnah Kayira (F)
16. Jonefar Mwalughali (F)
17. Prince Mkandawire (M)
18. Enock Nyirenda (M)
19. Allan Lit Mithie (M)
20. Aubrey Kanyika (M)
21. Verwoerd Muyaba (M)

18 March 2019:

Meeting with follower farmers in Kacheche Section, Bwengu

The meeting was conducted in two parts: One for all the Follower Farmers and a separate meeting after that for the female Follower Farmers.

1. Regina Sere (F)
2. Ellass Zgambo (F)
3. Jesie Gondwe (F)
4. Maliya Chihana (F)
5. Martha Mhone (F)
6. Rabson Nyirenda (M)
7. Henry Gondwe (M)
8. Ellah Gondwe (F)
9. Cicilia Milanzi (F)
10. Nelia Manda (F)
11. Naomi Kumwenda (F)
12. Linly Ng'oma (F)
13. Gradys Chimoniro (F)
14. Ellen Nyasulu (F)
15. Jeniffer Ngoma (F)
16. Effe Mkandawire (F)
17. Daniel Nyirenda (M)
18. Edington Monetie (M)

18 March 2019:

Debriefing with FYF, NYD, AICC and MUSCU in Bwengu EPA, Mzimba North

1. Nebert Nyanjagha, Rural Livelihood

-
- Development Officer / Field Officer, FYF (M)
1. Lusungu Mhango, Field Officer, MUSCCO (F)
 3. Solomon Malata, Project Officer, NfYD (M)
 4. Kondwami Chimbayo, Field Officer (M)

18 March 2019:

Debriefing with FYF, Mzuzu, 18 March

1. Chimwemwe Soko, Director, Find Your Feet (M)
2. Nebert Nyanjagha, Rural Livelihood Development Officer / Field Officer, FYF (M)

19 March 2019:

Meeting with Biodiversity Conservation Initiative, Mzuzu

1. Godwin Yindoli Mkamanga, Executive Director, Biodiversity Conservation Initiative (M)

20 March 2019:

Debriefing with DF, partners and invited guests

1. Driana Lwanda, Head of Programmes, AICC (F)
2. Leonard Chimwaza, Programme Manager, AICC (M)
3. Wellington Phewa, Programme Manager, MZADD (M)
4. Maruto Kamanga, Project Coordinator, MZADD (M)
5. Jacob Linde, Monitoring and Evaluation Officer, TAPP (M)
6. Lovemore Mtalimaiya, Project Coordinator, MUSCCO (M)
7. Chipso Kachiwala, Programme Coordinator, Norwegian Church Aid (M)
8. Grace Takomana, Nutrition and Gender Advisor, DF (F)
9. Sindirengozini Dzombe, Monitoring Evaluation and Learning Systems. Officers, Heifer (M)
10. Mwai Chitete, Country Director, Heifer (M)
11. Rodwell Kamagadazi, Field Officer, MUSCCO (M)
12. Leonard Kamwanja, Executive Director, TAPP (M)
13. Winfred Chanza, Head of Programmes, TAPP (M)
14. Assan Golowa, Norwegian Churchaid, Head of Programmes (M)
15. Victor Katchika-Jere, Country Representative, DF (M)
16. Lidace Nyirenda, Programme Manager, NfYD (F)
17. Zwide Jere, Managing Director, Total Land Care (M)
18. Agatha Njunga Silungwe, Project Manager, NfYD (F)
19. Mahara Nyirenda, Agriculture Program Officer, Development Fund, Malawi Office (M)

20 March 2019:

Debriefing with expert from Luanar at Sunbird Lilongwe Hotel

1. Dr. Daimon Kambewa, Associate Professor of Extension Studies, Lilongwe University of Agriculture and Natural Resources (LUANAR) (M)



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