

Farmer-to-Farmer Extension Approach in Malawi: A Survey of Organizations

Godfrey Kundhlande, Steven Franzel, Brent Simpson and Emma Gausi



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LIMITED CIRCULATION

Correct citation: Kundhlande G, Franzel S, Simpson B, Gausi E. 2014. Farmer-to-farmer extension approach in Malawi: A survey of organizations using the approach ICRAF Working Paper No. 183. Nairobi, World Agroforestry Centre. DOI: <http://dx.doi.org/10.5716/WP14384.PDF>

Titles in the Working Paper Series aim to disseminate interim results on agroforestry research and practices and stimulate feedback from the scientific community. Other publication series from the World Agroforestry Centre include: Technical Manuals, Occasional Papers and the Trees for Change Series.

Published by the World Agroforestry Centre
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This Discussion Paper was produced as part of the United States Agency for International Development (USAID) project “Modernizing Extension and Advisory Services” (MEAS, www.meas-extension.org). Leader with Associates Cooperative Agreement No. AID-OAA-L-10-00003.

The report was made possible by the generous support of the American people through USAID. The contents are the responsibility of the authors and do not necessarily reflect the views of USAID or the United States government.

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Technical editing by Leslie Johnson, Michigan State University.

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Acknowledgements

The authors are grateful to Dr. Catherine Mthinda, Lilongwe University of Agriculture and Natural Resources, Malawi, for assistance in designing the survey and preparing the data entry template; and to the representatives of the Department of Agricultural Extension Services and NGO agricultural extension providers for their participation in the survey. Funding support for this study was provided by the United States Agency for International Development (USAID) project “Modernizing Extension and Advisory Services” (MEAS, www.meas-extension.org) and the CGIAR Research Program on Policies, Institutions, and Markets. This work was undertaken as part of the CGIAR Research Program on Policies, Institutions, and Markets (PIM) led by the International Food Policy Research Institute (IFPRI). This publication has not gone through IFPRI’s standard peer-review procedure. The opinions expressed here belong to the authors, and do not necessarily reflect those of PIM, IFPRI, ICRAF, CGIAR, MEAS, USAID or the United States government.

Acronyms

ADD	Agricultural Development Division
AEDC	Agricultural Extension Development Coordinator
AEDO	Agricultural Extension Development Officers
AIDS	Acquired Immune Deficiency Syndrome
CA	Conservation Agriculture
CGIAR	Consultative Group for International Agricultural Research
DADO	District Agricultural Development Offices
DAES	Department of Agricultural Extension Services
DARS	Department of Agricultural Research Services
EPA	Extension Planning Area
FIDP	Farm Income Diversification Project
GDP	Gross Domestic Product
GoM	Government of Malawi
HIV	Human Immunodeficiency Virus
LF	Lead farmer
NASFAM	The National Smallholder Farmers' Association of Malawi
NGO	Non-governmental Organization
NRC	Natural Resources College
NRM	Natural Resource Management

Summary

To improve smallholder farmers' access to information, many extension services use farmers to help disseminate information that their fellow farmers can use to help increase agricultural productivity. This extension approach is referred to as "farmer-to-farmer," and the farmer extension agents are variously referred to as lead farmers, model farmers or extension multipliers, among others. The objective of the study is to characterize and assess the farmer-to-farmer extension approach and its application in Malawi by drawing from the experiences of organizations that employ the approach in their agricultural development programs. It is part of a series of studies being conducted of organizations conducting farmer-to-farmer extension and farmers involved in such programs in Malawi, Kenya and Cameroon.

Sampling was done using the snowball method, in which extension managers using farmer-to-farmer extension were interviewed and respondents directed interviewers to other potential respondents. The sample included 9 international non-profit organizations, 7 national non-profit organizations, 4 governmental services, 3 farmer organizations and 2 private companies.

In most cases, both the organization and the community were involved in choosing the lead farmers. In only two cases did the community have no role. Selection criteria varied considerably and included literacy, residence in the community, ability to communicate well, and being a hard worker. Some organizations were aware that their lead farmers were serving as lead farmers for other organizations.

Lead farmers tended to be about the same age and somewhat better educated than other farmers, but of the same wealth level. Most held other leadership positions in the community. The main functions of lead farmers were to train other farmers (72 percent), prepare and manage demonstration plots (56 percent) mobilize farmers for meetings (48 percent) and disseminate information (48 percent). Most lead farmers worked with a single group of farmers but the number of farmers that each lead farmer worked with varied considerably, with a median of 25 and a range of 10 to 100. The number of lead farmers per extension staff varied considerably; the median number was 15.

None of the organizations paid lead farmers a salary or a periodic allowance. About 28 percent paid occasional allowances, 8 percent reimbursed some expenses, and 8 percent paid per diems when the lead farmers travelled outside their community. Thirteen (52 percent) did not give any payment whatsoever to lead farmers. Some (44 percent) gave lead farmers awards in recognition of their services. A few reported that lead farmers were able to earn income from associated activities, such as selling veterinary drugs or energy-saving stoves.

Concerning gender, we assessed whether having a lead farmer program can help increase the proportion of women extension providers (that is women lead farmers and professional extension staff) providing extension services. The mean proportion of women lead farmers was the same as

the mean proportion of women extension staff, meaning that overall, lead farmer programs have no effect on the proportion of women providing extension services. But certain organizations were able to use the programs to increase the proportion of women in extension. For example, in the Malawi government's Department of Agricultural Extension Services, women make up 21 percent of extension staff and 40 percent of lead farmers. The lead farmer program in this case helps empower rural women and helps the department reach more women, assuming that women lead farmers reach more women farmers than men do.

The main motivations to become a lead farmer are increased social status (rated first by 43.5 percent of organizations) and early access to technology (26.1 percent). Altruism, job benefits, social networking and income generating activities were each ranked highest by one (4.3 percent) or two (8.7 percent) organizations. Organizations were also asked about lead farmers' motives to remain as lead farmers, once they had served for some time. Social status remained the highest ranked motive (52.2 percent) while early access declined to 13 percent, perhaps because many lead farmers were accessing less information and technologies than when they had started out. Income generation was also ranked highest by 13 percent, as some lead farmers were able to find ways to earn income through their roles as lead farmers.

The main benefits of the lead farmer approach were increased numbers of farmers reached (68 percent), increased adoption (68 percent), sustainability (52 percent), and low cost (28 percent). The most cited difficulties were training due mainly to low literacy levels (28 percent) and high expectations for financial or material benefits from lead farmers (24 percent). Over three-quarters of organizations rated the effectiveness of the lead farmer approach at 7 or 8 on a scale of 1 to 10, with 10 being highly effective.

Finally, the study shows the high degree in variation among motivations for farmers to become and remain lead farmers. Lead farmers have different motivations and will thus respond to different incentives. For example, lead farmers motivated by social status will respond to incentives that improve their visibility in the community, such as certificates, T-shirts, contests, and public recognition and appreciation by project and local leaders. Lead farmers motivated by early access to technology will respond most to learning opportunities such as training events, field days and exchange visits. For those interested in earning income from associated services, helping link farmer trainers to clients interested in buying their services is important.

One of the main findings is that there is a great deal of variation in the way the approach is implemented. Such variation has negative and positive effects. On the negative side, certain practices of some organizations – e.g., providing salaries to lead farmers – were found to have negative effects on other organizations that could not afford to pay salaries. That the Ministry of Agriculture was able to resolve this problem through a stakeholder agreement not to pay salaries is very laudable. The variation in approaches has a positive side as well, in that organizations

experiment with new approaches and learn how to adapt these to fit their unique needs as well as from one another. The results are the many positive changes in the farmer-to-farmer approach to make them more participatory, sustainable and effective. However, there is need for a mechanism to share lessons of best practices among organizations to improve the effectiveness and efficiency of extension systems using the approach. For example, stakeholders could meet periodically to share experiences, both benefits and challenges, in implementing lead farmer programs. This could be done, for example, at meetings of the stakeholder panels at district and area levels.

Keywords: Agricultural extension, lead farmers, farmer-to-farmer extension, voluntarism

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1. Introduction

The majority of Malawians live in rural areas and depend on agriculture for their livelihoods. National surveys estimate that crop production accounts for 74 percent of all rural incomes. The agricultural sector is the most important sector in the Malawian economy, accounting for about 39 percent of gross domestic product (GDP), employing 85 percent of the labor force and generating about 83 percent of foreign exchange earnings (Chirwa et al., 2008). Natural resource degradation, limited use of improved technologies, and lack of access to useful and actionable agricultural information are some of the factors that limit agriculture's contribution to sustainable development and poverty reduction in Malawi. Improving access to and effectiveness of agricultural extension and advisory services can contribute to improvements in productivity.

To improve smallholder farmers' access to information, many extension services use farmers to help disseminate information that their fellow farmers can use to help increase agricultural productivity. This extension approach is referred to as "farmer-to-farmer," and the farmer extension agents are variously referred to as lead farmers, model farmers or extension multipliers, among others. The involvement of farmers in implementing extension services helps overcome the problem of inadequate staffing levels in public extension services. Lead farmers can reach larger numbers of farmers at lower cost, and their use is believed to improve the sustainability of service provisioning. The farmer-to-farmer extension approach is widely used in agricultural services in many developing countries, but few studies have been carried out to assess how organizations use the approach in varying contexts and how effective it is. This study assesses the use of the farmer-to-farmer extension approach by organizations in Malawi.

1.1. Objectives of the study

This study is part of a larger research effort aimed at characterizing and assessing the farmer-to-farmer extension approach and its application in Malawi, Kenya and Cameroon by drawing from the experiences of organizations that employ the approach in their agricultural development programs and the farmers who volunteer to work as farmer extension agents. The lessons from this study will improve our understanding of the extension system in Malawi and help to determine the most effective approaches under varying circumstances. The study is guided by the following specific objectives:

1. Assess the experience of a range of different types of organizations using the farmer-to-farmer extension approach across various contexts in Malawi.
2. Determine the perceived effectiveness of the farmer-to-farmer extension approach by the organizations using the approach.

2. Methods and study area

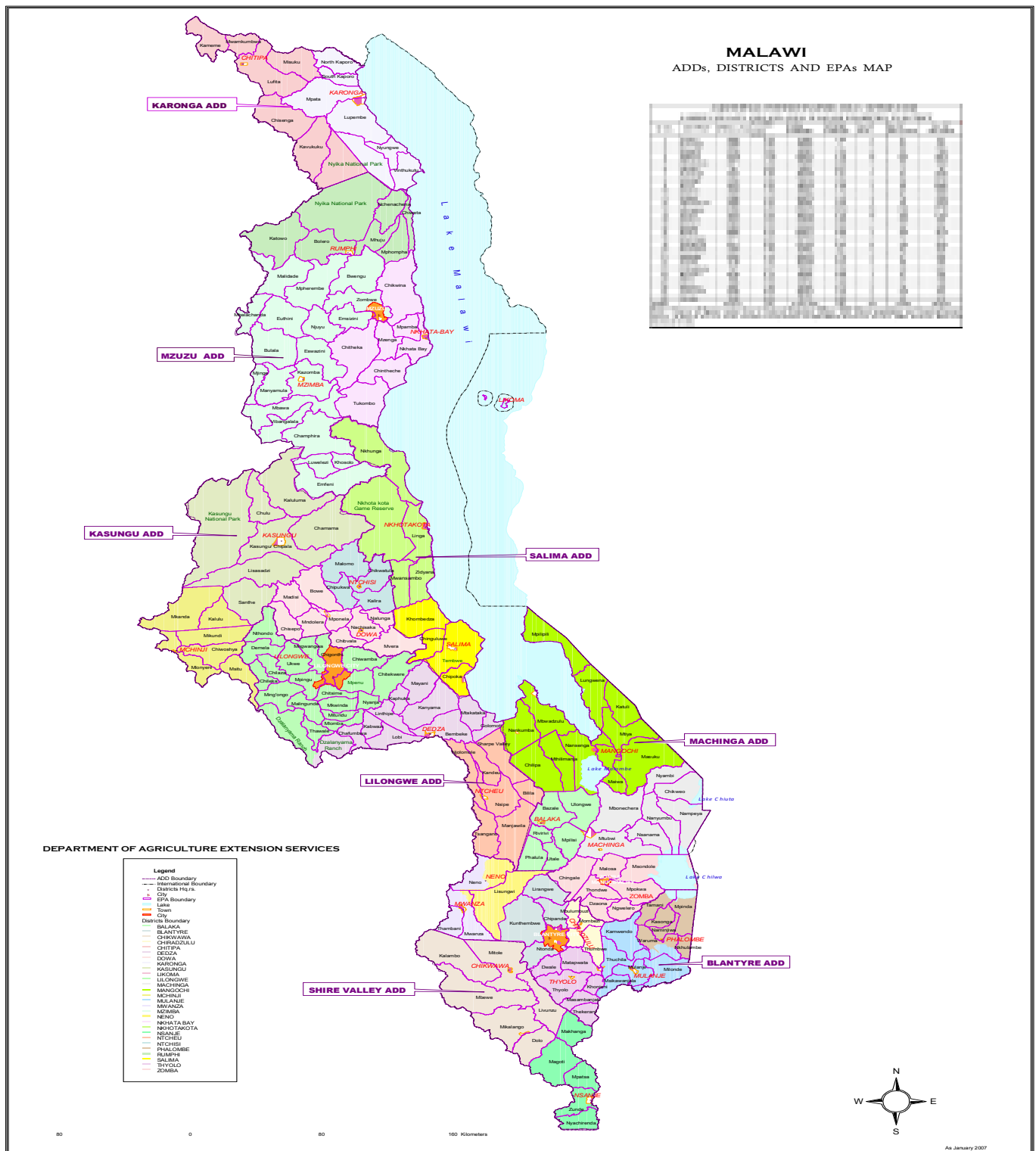
The study involves organizations that use the farmer-to-farmer extension approach in Malawi to disseminate agricultural innovations. The selected organizations in this study included those working in all three major geographical regions of the country – Southern, Central and Northern. Most of the organizations have their headquarters in Lilongwe (Central Region). A few of the organizations had their headquarters in Blantyre (Southern Region) and Mzuzu (Northern Region). Among the 25 selected organizations are public and private, national and international non-profit organizations, and farmer-based and faith-based extension services. A semi-structured survey was used with organization representatives to assess the extension programs' experiences with the farmer-to-farmer approach in Malawi. Topics covered in the survey included selection methods, terms of reference, motivation and incentives, training and support, numbers and density, dropout rates and lessons learned.

The government extension services in Malawi are structured along an agro-ecological division of the country into agricultural development divisions (ADDs), which are further subdivided into district agricultural offices¹ and extension planning areas (EPAs) (Simpson et al., 2012; Kaarhus and Nyirenda, 2006). Other agricultural extension services providers plan their activities and assign field officers following the structure of the government extension services.

There are eight ADDs – three in the Southern Region (Shire Valley ADD, Blantyre ADD and Machinga ADD), three in the Central Region (Lilongwe ADD, Salima ADD and Kasungu ADD) and two in the Northern Region (Mzuzu ADD and Karonga ADD). Each ADD has specialists in crop production, animal health and veterinary services, agricultural extension support services, research and technical services, and land resources conservation. At the district agricultural offices, the professional structure of the ADDs is replicated (Simpson et al., 2012; Kaarhus and Nyirenda, 2006). The district agricultural offices have been integrated into and form part of the local government structures, the district assemblies.

The 187 EPAs are further subdivided into sections, each comprising five to 15 villages. EPA boundaries have been drawn such that they fall within the boundaries of an administrative district. Each EPA is headed by an agricultural extension development coordinator (AEDC), who manages the frontline staff members (agricultural extension development officers [AEDOs]) of the government agricultural extension services. AEDOs are assigned to sections within the EPA, with each responsible for between three and five sections. The number of sections in an EPA varies depending on regional population densities. At the time they were demarcated, each EPA was intended to have no more than 20,000 households.

¹ The district agricultural development officer is responsible for agricultural issues within a district, which is a local government administrative unit. There are 28 districts in Malawi. District boundaries have been drawn such that a district is wholly contained in a single ADD.



3. Results and discussion

3.1. Characterization of the sample organizations

The organizations in the sample are public and private and non-profit² agricultural extension services. As shown in Table 1, international (36 percent) and national (28 percent) non-governmental organizations (NGOs) make up the majority of the extension organizations interviewed for the study. Four governmental extension structures were selected for the study: the Department of Agricultural Extension Services head office, the Farm Income Diversification Project (FIDP) (a donor-funded project implemented by the Ministry of Agriculture), and two ADDs (one each in the Southern and Northern regions).

Table 1: Types of organizations providing extension services

Type of organization	Frequency	Percent (%)
Government	4	16
International NGO	9	36
National NGO	7	28
Private sector	2	8
Farmer organization	3	12
Total	25	100

Most of the organizations interviewed were established between 1995 and 2005 (Figure 2). The increase in the number of non-state agencies involved in the provision of agricultural extension services during this period coincides with the democratization of governance in Malawi following the multiparty elections of 1994 and the promulgation of a new agricultural extension policy in 2000 that encouraged the participation of many agricultural extension service providers. Until then, provision of agricultural extension services in Malawi was the prerogative of the government (Masangano and Mthinda, 2011).

² Non-profit organizations in this study refer to national and international non-governmental organizations, as well as faith-based and civil society-based organizations.

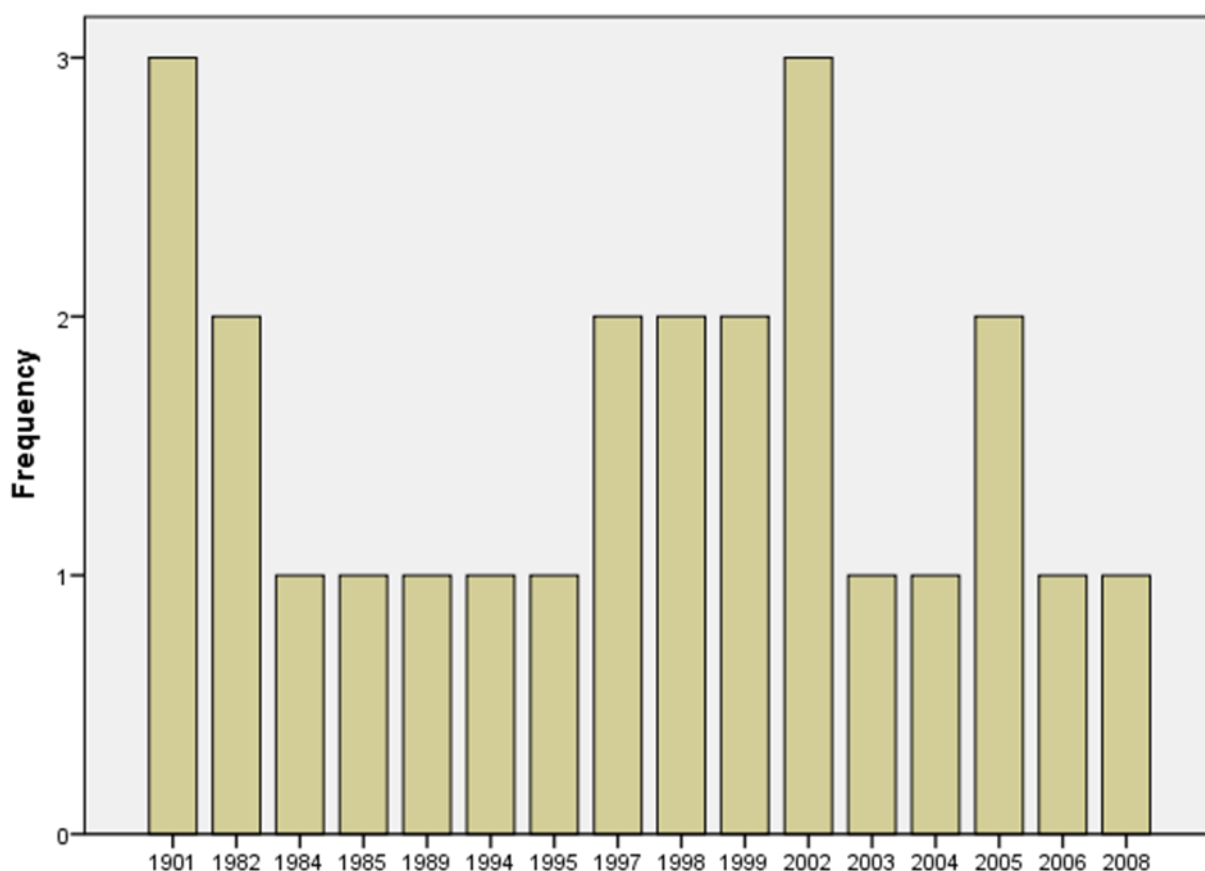


Figure 2: Year organization was established in Malawi

The government extension system is organized around a four-tier administrative hierarchy: national, agricultural development divisions (ADDs) (eight), districts (28) and extension planning areas (EPAs)(187) (Simpson et al., 2012). The organizations interviewed structure their agricultural development activities in line with the government's administrative system. Some of the organizations situated their activities in specific regions, ADDs or districts; others worked in all districts across all regions of the country (national). Of the 25 organizations interviewed, 60 percent reported that they worked in all three regions of the country but in selected districts (Table 2). Only DAES works across all districts in the country (national). The remainder of the organizations either worked in a few selected districts or focused on a specific region of the country or ADD.

Table 2: Organizations' general work locations

Work location	Frequency	Percent (%)
All regions, selected districts	15	60
Three districts	3	12
One agricultural development division	2	8
Five districts	2	8
Four districts	1	4
National (all regions and districts)	1	4
One region (southern Malawi)	1	4
Total	25	100

The main areas of technical focus cited by the organizations are food security, nutrition and livelihoods development (68 percent), support for farmer group organization (“economic interest groups³”) (44 percent), linking farmers to markets (40 percent), and crop and livestock production (36 percent each) (Table 3). Other areas of reported technical focus include HIV/AIDS, natural resource management, promoting sustainable development and helping communities build resilience to climate change impacts.

Table 3: Reported areas of technical focus for the organizations

Areas of technical focus	Frequency	Percent (%)
Food security, livelihoods and human nutrition	17	68
Group organization	11	44
Marketing	10	40
Crop production	9	36
Livestock production	9	36
HIV/AIDS	8	32
Natural resource management (NRM), conservation agriculture	7	28
Sustainable development	8	32
Climate change, community resilience to climate change	6	24
Tobacco production	3	12
Provision of safe water	2	8
Research – agricultural and development	1	4
Microfinance operation	1	4
Dairy production	1	4
Collection of wild products	1	4
Fish farming	1	4

N= 25. Percentages sum to greater than 100 because organizations gave multiple responses.

³ The economic interest organizations are intended to help farmers resolve marketing issues and to forge partnerships with other service providers and entities.

The target groups for the extension organizations are shown in Table 4. Most organizations targeted smallholder farmers (64 percent). Some organizations indicated that they work with all members of rural communities (20 percent), and 12 percent reported that they target women smallholder farmers. One farmer-based organization (4 percent) targets its own members, and commodity-based organizations such as tobacco companies (8 percent) target only farmers engaged in tobacco production. In general, the targeted groups are smallholder farmers, the group whose production activities are generally constrained by a lack of access to information and new skills.

Table 4: Groups targeted by the organizations

Target group	Number	Percent (%)
Smallholder farmers	16	64
Rural communities	5	20
Smallholder farmers, with emphasis on inclusion of women	3	12
Disaster-prone communities	2	8
Tobacco farmers	2	8
Members of farmers' association	1	4
HIV and AIDS	1	4

N=25. Percentages sum to greater than 100 because organizations gave multiple responses.

The results in Table 5 show that most of the organizations employed more than 10 field staff members, and 36 percent employed more than 50 field staff members (Table 5).

All of the extension organizations employed women field staff members. Only one organization (DAES) employed more than 50 women. Females made up 25 percent to 50 percent of the field staff in a majority of the organizations (72 percent). On average, the proportion of women among field staff members is 37 percent. The Malawi government's Department of Agricultural Extension Services field staff comprises 21 percent women (IFPRI/FAO/IICA, 2011). This percentage is generally reflective of male/female student enrollment levels in the extension programs at Bunda (Lilongwe University of Agriculture and Natural Resources and Natural Resources College). The NRC level of representation of women in extension programs generally reflects the enrollment levels of women in the agriculture and extension training programs at tertiary institutions in Malawi (Simpson et al., 2012).

Table 5: Number of field staff members employed by the organizations

Number employed	Frequency	Percent (%)
1-2	1	4
3-5	4	16
6-10	3	12
11-25	6	24
26-50	2	8
50+	9	36
Total	25	100
<i>Proportion of field staff members who are women</i>		
Number of women	Frequency	Percent (%)
1-2	6	24
3-5	4	16
6-10	4	16
11-25	6	24
26-50	4	16
50+	1	8
Total	25	100
<i>Percentage of women field staff members in organizations</i>		
Range (%)	Number of organizations	Percent (%)
1-25	3	12
26-50	18	72
50+	4	16
Total	25	100

In most of the organizations (88 percent), a majority of the field staff members have a diploma in agriculture or natural resources management as their highest level of training (Table 6). Until recently, most extension officers in the government extension services held a high school degree and a certificate in agriculture or natural resource management. The DAES now requires that individuals have at least a diploma to qualify for employment as an agricultural extension officer.

Table 6: Education attainment of field staff members

Educational level	Frequency	Percent
Diploma	15	60
BSc	1	4
Most are diploma holders	7	28
Most are BSc holders	1	4
Malawi school certificate of education	1	4
Total	25	100

The results in Table 7 show the other extension approaches used by organizations. In addition to the farmer-to-farmer approach, the extension organizations use farmer groups or clubs (88 percent), demonstrations (72 percent), individual visits (56 percent), farmer field schools (44 percent), field days (40 percent) and exchange visits (36 percent). Some of these approaches are compatible with and can be used in combination with the farmer-to-farmer approach.

Table 7: Other extension methodologies used by organizations

Methods	Frequency	Percent (%)
Group method (groups/clubs)	22	88
Demonstrations	18	72
Individual visits	14	56
Farmer field schools	11	44
Field days	10	40
Exchange visits or tours	9	36
Farming clusters	6	24
“A strip”*	3	12
Model village	3	12
Mass media such as newsletter, radio programs	1	4
Agricultural shows	1	4

N=25. Percentages sum to greater than 100 because organizations gave multiple responses.

* A group of geographically contiguous villages, often aligned along a principle access road, that the extension service engages as a single entity.

Gender issues are not explicitly considered in the extension activities of a majority of organizations – only 28 percent of the organizations explicitly and systematically include gender issues in their extension approaches (Table 8). Most organizations stated that they did not systematically include gender issues but addressed gender issues on an ad hoc basis, such as by encouraging women to become lead farmers or ensuring the inclusion of women among beneficiaries of extension services.

Table 8: Inclusion of gender issues in the extension approach

Inclusion of gender in extension approach	Frequency	Percent (%)
Not sure	13	52
Yes	7	28
No	5	20
Total	25	100

Organizations provide farmers with technical support in the following agricultural areas: crop production (48 percent), natural resource management (40 percent), conservation agriculture (40 percent), livestock production (36 percent), seed systems development (36 percent) and group development (32 percent) (Table 9). Other areas of technical support offered by organizations include linking farmers to output markets (28 percent), irrigation development (24 percent), providing farming inputs (24 percent), and disseminating information and technologies (24 percent).

Table 9: Areas of technical support provided by organizations

Areas of technical support	Frequency	Percent (%)
Crop production	12	48
Conservation agriculture	10	40
Natural resource management (afforestation, conservation agriculture, agroforestry)	10	40
Seed systems development and support	9	36
Livestock production	9	36
Group development and management	8	32
Markets – linking farmers	7	28
Dissemination of information and technologies	6	24
Irrigation	6	24
Provision of farm inputs – e.g., seed, fertilizers on loan	6	24
Dairy production	3	12
Tobacco production	3	12
HIV and AIDS support	3	12
Postharvest management	2	8
Demonstration materials	1	4
Village savings and loans	1	4
Product processing	1	4
Product quality management	1	4

N=25. Percentages sum to greater than 100 because organizations gave multiple responses

The majority of extension organizations (92 percent) rely on their own staff as the main source of technical information used in their extension messages (Table 10). In addition, many

organizations also get technical information from the government extension services (64 percent); research institutions including the government's agricultural research services, universities and CGIAR Centers (60 percent); technical partners collaborating on projects (32 percent); and the private sector (e.g., seed companies) (16 percent). One of the extension organizations reported that it has at times engaged consultants to provide specialized technical information – for example, on issues related to irrigation management.

Table 10: Sources of technical information disseminated by the organizations

Source of technical information	Frequency	Percent (%)
Own staff	23	92
Government extension workers	16	64
Researchers (DARS, universities, CGIAR Centers)	15	60
Technical partners cooperating with the organization	8	32
Private sector (e.g., seed industry)	4	16
Farmers	1	4
Consultants	1	4

N=25. Percentages sum to greater than 100 because organizations gave multiple responses.

The data in Table 11 show where organizations learned about the use of the farmer-to-farmer extension approach. The majority of the organizations learned about the approach from the Ministry of Agriculture (DAES) (64 percent). Other organizations reported that they learned of the approach from partners (16 percent) and from the National Smallholder Farmers' Association of Malawi (NASFAM) (8 percent). Some representatives were not sure where their organizations learned about the approach.

Table 11: Source from which organizations learned about the farmer-to-farmer approach

Source from which you learned about farmer-to-farmer approach	Frequency	Percent (%)
Ministry of Agriculture	16	64
Partners in past projects	4	16
Don't know	3	12
NASFAM	2	8
Total	25	100

In a few of the extension organizations, use of some form of the farmer-to-farmer approach dates back to the 1990s (Figure 3). The majority of the extension organizations, however, started using the lead farmer approach after 2003, when the Department of Agricultural Extension Services began using the farmer-to-farmer extension approach. The approach was formally

institutionalized within DAES's programs in 2007 to help increase the number of farmers that could be reached and provided with information on improved production methods and technologies (Kalagho, 2013). The popularity of the farmer-to-farmer approach has grown over time because it is believed to be the best way to reach large numbers of farmers in the face of limited budgets for employing more extension field staff members.

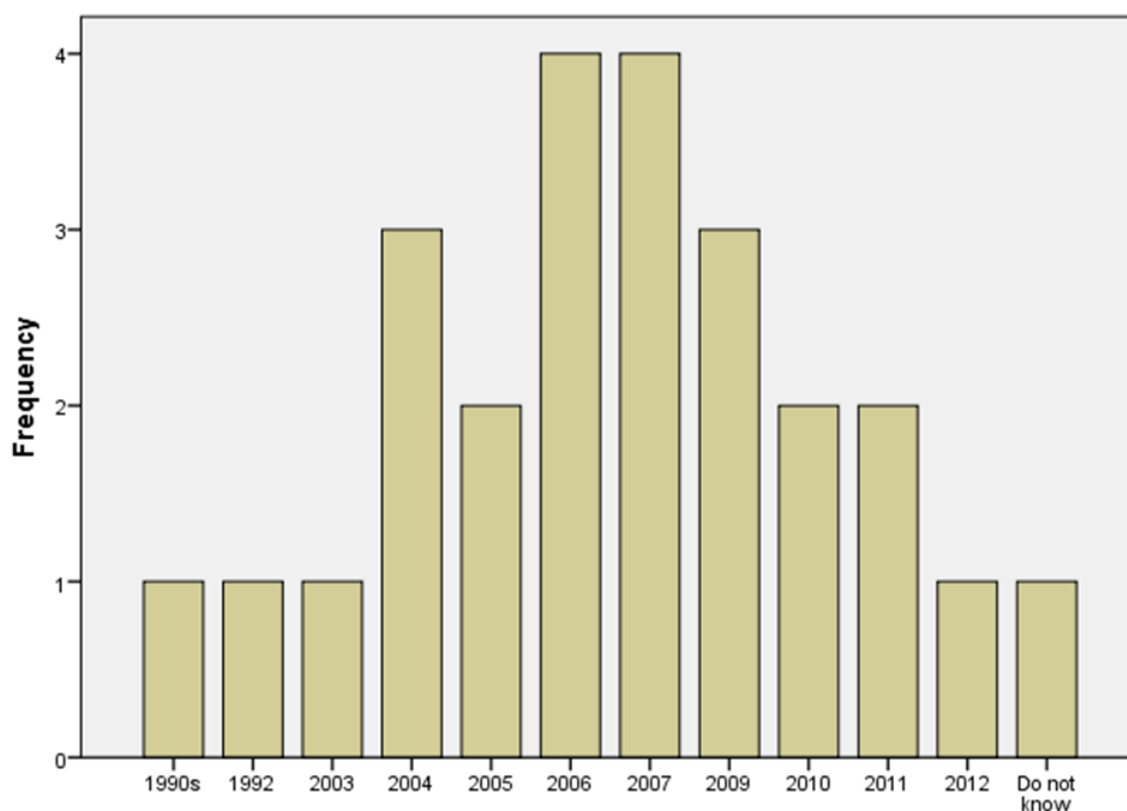


Figure 3: Organization's first use of the lead farmer approach

The organizations interviewed for this survey use several terms to refer to lead farmers (Table 12). The majority of the extension organizations (68 percent) use the term “lead farmer,” following the designation used by DAES, to refer to a farmer who helps to disseminate information on agricultural innovations to his/her fellow farmers. Other terms used by the organizations are “village extension multipliers” (8 percent) and “model farmer” (8 percent). The term “model farmer” was used by the organizations involved in providing extension services to tobacco growers. Model farmers have to be involved in tobacco production, have to be exemplary in applying best practices and have to help train other tobacco farmers.

Box 1. Farmer trainers as core suppliers in a natural/wild products program

One of the organizations interviewed is engaged in collection of natural/wild products (mostly tree-based), which it processes and markets nationally and internationally. The organization relies on local communities in the districts where the natural products are found to collect and bulk the products. Within these communities, the organization trains individuals in product identification, appropriate collection methods and the required quality standards for products. These become the main collectors of the products and are referred to as “core suppliers.” The “core suppliers” are expected to train others interested in collecting the wild products and also act as aggregators for the organization. The use of core suppliers to train other community members willing to engage in the collection of wild products is similar to the farmer-to-farmer extension approach.

Table 12: Names used for lead farmers

Name used	Frequency	Percent (%)
Lead farmer	17	68
Village extension multiplier	2	8
Model farmer	2	8
Community agricultural worker/facilitator	1	4
Farmer-to-farmer (<i>pompo pompo</i> ⁴)	1	4
Community animal health worker	1	4
Core suppliers (of wild products)	1	4
Total	25	100

The reasons for adopting the farmer-to-farmer approach (Table 13) stated by many of the organizations were that it helps increase coverage (allowing the organization to reach more farmers) (88 percent), it is efficient (with more farmers being reached at a relatively low cost) (36 percent), it increases rates of adoption of agricultural innovations through farmer-to-farmer communication (28 percent), and it is perceived to be a sustainable way to provide extension and rural advisory services (28 percent). Several organizations also cited the approach’s contribution to building capacity of local communities (12 percent) and said that it helps smallholders to improve productivity and the quality of their products. Most organizations reported that they did not have adequate field staff and other resources to be able to reach the number of farmers targeted by their projects without using the approach. The organizations also stated that, because

⁴ Loosely translates to “on the spot,” referring to ready availability of lead farmers to those who need support within their communities.

lead farmers reside among and are well-known to the farmers they help train, they are trusted as sources of information and are able to effectively demonstrate improved production practices. This was reported by many organizations to be a reason why adoption rates of innovations were much higher when organizations used lead farmers than when they used their own field staff. One organization reported that, when its representatives revisited a project site several years after the project had ended, they noticed that many farmers still practiced the technologies that had been promoted. This was attributed to continued presence of lead farmers in the area who continued to provide information and support to their fellow farmers.

Table 13: Organizations' reasons for adopting farmer-to-farmer approach

Reason	Frequency	Percent (%)
Increased coverage (reach out to more farmers)	22	88
Increased efficiency in management and productivity	9	36
Sustainability of programs	7	28
Increase adoption of innovations by farmers	7	28
Capacity building for locals	3	12
Increase supply of quality products	2	8

N=25. Percentages sum to greater than 100 because organizations gave multiple responses.

3.2. Current use of lead farmer approach

In their use of the farmer-to-farmer approach, most organizations (92 percent) reported that the main role of the field staff is to build the capacity of lead farmers through training and provision of back-up support (Table 14). The other roles of field staff members include follow-up support of the lead farmers (60 percent). Examples include monitoring their performance or obtaining feedback about the farmers' needs; working with lead farmers to disseminate information to farmers (56 percent); conducting trials of technologies jointly with lead farmers (28 percent); and designing and packaging technical messages (28 percent).

Table 14: Field staff roles in implementation of farmer-to-farmer extension

Roles of field staff*	Frequency	Percent (%)
Capacity building of lead farmers	23	92
Follow-up with lead farmers	15	60
Work with lead farmers in general extension	14	56
Packaging of technical messages	7	28
Trials with lead farmers before scaling up	7	28
Quality inspection (of work of lead farmers, e.g., demonstration plots)	1	4

* N=25. Percentages sum to greater than 100 because organizations gave multiple responses.

The main point of contact between targeted communities and field staff members for most extension organizations is the lead farmers and local leaders jointly (76 percent) (Table 15).

Some of the organizations stated, however, that their main point of contact was exclusively the lead farmer (20 percent). Most organizations explained that they work with the operational structures established by the government under its extension policy (Government of Malawi, 2000) when carrying out their activities. According to the policy, the planning and delivery of agricultural services for all organizations providing extension services are coordinated through stakeholder panels⁵ at the EPA and district levels; and that the local-level extension service providers should also work with area development committees, village development committees and village natural resources management committees.

Table 15: Contact point for field staff

Point of contact	Frequency	Percent (%)
Lead farmer and local leaders	19	76
Lead farmer	5	20
Local leader	1	4
Total	25	100

All extension staff members in all sampled organizations work with lead farmers. There is wide variation in the ratio between numbers of lead farmers and numbers of extension officers. The median number of lead farmers per extension officer is 15 and in 29 percent of the organizations, one extension officer works with between 11 and 25 lead farmers (Table 16). The ratio for the Ministry of Agriculture, with about 12,000 lead farmers and 1,710 extension staff members was about 7:1.

Table 16: Ratio of lead farmers to extension staff

Number of lead farmers per extension officer	Frequency	Percent (%)
1-5	4	17
6-10	6	25
11-25	7	29
26-50	6	25
50+	1	4
Information not available	1	-
Total	25	100

For the majority of the organizations reporting (61 percent), the proportion of women among their lead farmers was between 26 percent and 49 percent (Table 17). The mean proportion was 37 percent. Only 17 percent of the organizations had 50 percent or more women lead farmers. The proportion of women among the Ministry of Agriculture's 12,000 lead farmers is 40 percent

⁵ These stakeholder panels are made up of representatives of farmers and farmer organizations, NGOs and community-based organizations, agribusinesses and others.

(Chowa, C., pers. comm. 2013). Literacy was cited as an important criterion for a farmer to qualify to be selected as a lead farmer, and this tends to disadvantage women. Some organizations stated that women lead farmers may face problems in their communities when they attempt to perform their duties because some farmers doubt their technical competence.

Table 17: Proportion of women lead farmers

Proportion of women lead farmers in organizations	Frequency	Percent (%)
10-25 %	5	22
26-49%	14	61
50+%	4	17
No response	2	-

N=25

Most (84 percent) extension organizations reported that they work with government extension (Table 18). The areas of cooperation between the organizations and government extension include working jointly on project activities and in selecting lead farmers (60 percent), training lead farmers (12 percent), and monitoring and evaluating the performance of lead farmers (8 percent). Government extension officers also provide technical support to organization field staff members. Some of the reasons given for working with government extension were that this ensures sustainability of activities – when an organization’s project has ended, the government extension officers will be able to help farmers carry on with the activities. The other benefits of cooperation include better coordination of efforts of numerous independent organizations to ensure effective service provision. Two organizations did not work with the government agricultural extension system. One organization was involved in collecting and processing natural products, a technical area in which the government service did not work. The organization indicated that its emphasis is on the collection of products from the wild and that it has no plans to encourage on-farm production of the products.

Table 18: Whether and how organization field staff members work with government extension officers

Work with and ways of working with government extension officers	Frequency	Percent (%)
<i>Organizations whose field officers work with government extension staff members</i>		
Work with government extension officers	21	84
<i>Ways of working with government extension</i>		
Work closely in all activities, including selection of lead farmers	15	60
Coordinated trainings and supervision of lead farmers	3	12
Work together from planning of activities to monitoring and evaluation	2	8
Government extension officers provide technical support	2	8
Do not work with government extension officers	2	8
No response	3	12

N=25. Percentages sum to greater than 100 because organizations gave multiple responses.

The most common means of transport provided to field staff members by most organizations is a motorcycle (88 percent), followed by a bicycle (12 percent) (Table 19). Motorcycles were used most because they allow access to large areas, they can access places where the roads are bad, and they are relatively affordable for small organizations with limited resources.

Table 19: Type of transportation provided for field staff members

Type of transportation	Frequency	Percent (%)
Motorcycle	22	88
Bicycle	3	12
Total	25	100

The field staff of all the extension organizations use cell phones for communication (Table 20). Most of the organizations stated that they expected field staff to buy cell phones for themselves. The majority of the organizations (72 percent) provide airtime (a fixed amount per given time period) for field staff. Cell phones were used for communication between the field staff and the lead farmers or farmer groups, as well as between field staff and the organizations' home office. Some of the information communicated through cell phones concerned the scheduling of meetings and requests for back-up by lead farmers when they could not provide information needed by farmers. A few organizations stated that their field staff used email to communicate with the organizations' home offices.

Table 20: Means of communication used by field staff members

Means of communication	Frequency	Percent (%)
Use cell phones	25	100
Organization provides airtime	18	72
Email	2	8
Letters/notes	1	4

N=25. Percentages sum to greater than 100 because organizations gave multiple responses.

Many organizations stated that they worked with gender-based⁶ as well as mixed groups (52 percent) (Table 21). The organizations stated that, though they generally sought to work with as many members of the community as possible, they accommodated gender-based groups to make sure that the specific interests of such groups were addressed. Some of the organizations stated that they worked with mixed-gender groups.

Table 21: Gender-based or mixed groups

Gender-based or mixed groups	Frequency	Percent
Gender-based and mixed groups	13	52
Mixed groups only	10	40
Missing responses	2	8
Total	25	100

Most organizations (60 percent) do not have written guidelines for their field staff on how to use the farmer-to-farmer approach (Table 22). Only 28 percent of the organizations indicated that they have guidelines that the field staff can use. The DAES does have guidelines on the use of the farmer-to-farmer extension approach, but many organizations reported that they were not aware that DAES had developed guidelines that they could use as a basis for developing their own. The lack of guidelines on using the approach leads to a diversity of practices that organizations label as farmer-to-farmer extension, making it difficult to monitor and evaluate the quality of extension services provided to farmers.

⁶ “Gender-based groups” is used here to refer to either women’s, youth or men’s groups. Mixed groups are those that comprise both men and women.

Table 22: Availability of written guidelines for field staff on lead farmer approach

Availability of guidelines for field staff on lead farmer approach	Frequency	Percent (%)
No	15	60
Yes	7	28
No response	3	12
Total	25	100

3.3. Lead farmer selection

Most extension organizations stated that the communities in which they worked played a role in the selection of lead farmers (Table 23). The majority of the organizations (52 percent) indicated that communities selected a lead farmer on the basis of criteria that were jointly developed by the community and the field staff; and in some cases, with advice from government extension officers. Some organizations indicated that the communities identify the lead farmer and recommend the person to the organization's field staff (28 percent).

Table 23: The role of the community in selecting the lead farmer

Item	Frequency	Percent (%)
Identify lead farmer using criteria developed by community and organization's field staff	13	52
Identify and recommend lead farmer	7	28
No response	1	4
Identify and recommend lead farmer in conjunction with village development committee	1	4
Identify lead farmer	1	4
None	2	8
Total	25	100

The criteria used by organizations to select lead farmers are shown in Table 24. The majority of the extension organizations stated that literacy is important for a person to be a lead farmer (68 percent), followed by residence in the community (48 percent), ability to communicate well (44 percent), being a hard worker (40 percent), reputation of good behavior (28 percent), innovativeness (28 percent) and availability (16 percent). Some organizations did not consider literacy as an important criterion because this may lead to exclusion of the very poor, who are often illiterate but are an important target group of the organization. The organizations indicated, however, that training farmers with low levels of education was a great challenge, and that it took several years before such farmers could become effective lead farmers.

Table 24: Criteria used for selection of lead farmers

Selection criteria	Frequency	Percent (%)
Literacy – able to read and write	17	68
Resident in the community	12	48
Hardworking – can be a role model	11	44
Able to communicate	10	40
Good behavior, trustworthy, acceptable to community	9	36
Good track record (has not defaulted on loans in the past and no criminal record)	7	28
Innovative	7	28
Education (minimum Standard 8)	4	16
Reachable/available	4	16
Trainable/teachable	3	12
Engaged in dairy production	1	4
Interested in deriving livelihood from selling wild products	1	4
Owns land	2	8

N=25. Percentages sum to greater than 100 because organizations gave multiple responses.

The education level of lead farmers working with many extension organizations (80 percent) was on average higher than that of the members of their communities (Table 25). The level of educational attainment among rural Malawians is generally very low, with most rural inhabitants not having completed primary education (first eight years of schooling). The Malawi Integrated Household Survey 2004/2005 reported the rural adult literacy rate to be 61 percent, compared with a rate of 85 percent for urban areas and a national average of 64 percent. Literacy rates are even lower among adult women, with a national average rate of 53 percent (GoM, 2005). The extension organizations stated that lead farmers on average completed more years of primary education than members of the community, with a few having completed some years of secondary school education. The ability to read and write was indicated by organizations to be an important criterion for selection of lead farmers because this is considered as an indicator that the farmer is trainable, will be able to keep records, and will be able to communicate technical information and train others. The age of lead farmers was stated to be generally the same as that of the average members of their communities. However, as stated by the organizations, the ages of lead farmers varied.

The wealth level of lead farmers compared with other farmers in the group was found to be the same in most of the cases (72 percent), but 24 percent of the organizations indicated that lead farmers were better off than the rest of the farmers. The majority of the organizations (76 percent) stated that lead farmers had other roles in their communities, though not necessarily as formal leaders (such as chiefs, positions in local government administration). Rather, lead

farmers are generally seen as opinion leaders in their communities and thus are often asked to lead local initiatives, even if it is on an informal basis.

Table 25: Lead farmers compared with other community members

	Number of organizations	Percent (%)
<i>Education compared with group members</i>		
Higher	20	80
Same	5	20
<i>Range of education of lead farmer</i>		
Primary to secondary level	25	100
<i>Age of lead farmer compared with other farmers</i>		
Same	25	100
<i>Wealth level</i>		
Higher	6	24
Same	18	72
Mixture of higher and lower	1	4
<i>Role in community</i>		
Leadership role in community (yes)	19	76

N=25.

Most of the organizations had some lead farmers who also worked as lead farmers with other organizations (Table 26). The proportion varied greatly across organizations. Some organizations indicated that they would not select farmers who were already lead farmers with other organizations to be lead farmers in their programs because they wanted to avoid overburdening the lead farmer. Other organizations reported that they did not allow their lead farmers to be lead farmers for other organizations, and lead farmers could be dismissed if they violated the agreement.

Table 26: Proportion of lead farmers working with other organizations

Proportion of lead farmers working for other organizations	Frequency	Percent (%)
None ⁷	6	24
Less than 10%	7	28
Less than 15%	1	4
25%	2	8
30%	4	16
40%	1	4
50%	1	16
70%	1	4
No response/not sure	2	8
Total	25	100

3.4 Lead farmer roles

Training other farmers (72 percent), preparing and managing demonstration plots (56 percent) mobilizing farmers for meetings and to attend demonstrations (48 percent) and disseminating information (48 percent), were cited by most organizations as the principal activities of lead farmers (Table 27). These are the main tasks of extension organizations that would otherwise be handled by field staff. In the farmer-to-farmer approach, they are performed by lead farmers.

⁷ Some organizations reported that they did not allow their lead farmers to be lead farmers for other organizations and said that lead farmers could be dismissed if they violated the agreement. Other organizations reported that their lead farmers were working exclusively for them because no other extension organizations were working in the impact area.

Table 27: Roles of lead farmers

Role	Frequency	Percent (%)
Train other farmers	18	72
Conduct/mount demonstrations	14	56
Disseminate messages	12	48
Mobilize communities for meetings, demonstrations	12	48
Test technologies in own garden	11	44
Conduct/convene/facilitate meetings, demonstrations	10	40
Link between community and extension workers	6	24
Provide technical advice/consulted by farmers	4	16
Make reports to village development committee	2	8
Conduct follow-up visits to farmers on application of techniques	2	8
Monitor/supervise project activities	1	4
Inspect seed crop	1	4
Pass on the gift ⁸	1	4
No response	1	4

N=25. Percentages sum to greater than 100 because organizations gave multiple responses.

The ratios of farmers to lead farmer for the organizations reporting are shown in Table 28. The median number of farmers per lead farmer across organizations was 25. Nine organizations out of the 21 for which a complete set of information is available have a farmer to lead farmer ratio greater than 30. There are some concerns relating to the workload that lead farmers assume under the farmer-to-farmer extension approach. When lead farmers are overburdened, they may not have sufficient time to work on their own plots and thus may be worse off in the end. For the majority of the extension organizations (59 percent), each lead farmer is assigned to work with one farmer group. For one of the organizations, one lead farmer worked with eight farmers' groups. The extension organizations indicated that they were mindful not to overburden the lead farmer.

⁸ Lead farmers and households that receive a cow or goat in these livestock development programs are expected to give a female offspring to a neighbor so that he/she can also start growing a herd/ flock.

Table 28: Frequency distribution of number of farmers and groups per lead farmer

<i>Number of farmers per lead farmer</i>	Frequency	Percent (%)
10	2	9.5
15	3	14.3
20	2	9.5
23	1	4.8
25	4	19.0
30	6	28.6
51	1	4
60	1	4
100	1	4
No response	4	16
Total	25	100
<i>Number of groups per lead farmer</i>		
1	13	52
2	3	12
3	3	12
5	2	8
8	1	4
No response	3	12
Total	25	100

For many organizations (48 percent), meetings between lead farmers and farmers did not take place at predetermined, regular intervals (Table 29). Lead farmers may meet with farmers following a program set out with extension organizations' field staff members, but they are also available to meet farmers anytime upon request. Some organizations stated that the frequency of lead farmer/farmer meetings is influenced by season and the agricultural activities taking place at the time. Other organizations stated that their lead farmers meet farmers once or twice a week.

Table 29: Frequency of meetings of lead farmers with farmers

Variable	Frequency.	Percent (%)
Depends on season – not regularized	12	48
Once or twice a week	10	40
Go by action plan and enterprise	1	4
Once a month	1	4
No response	1	4
Total	25	100

The means of transportation for the lead farmer was stated by many organizations (53 percent) as the bicycle; some organizations (32 percent) indicated that lead farmers travel by foot to meetings with farmers (Table 30). In general, most organizations reported that lead farmers work mostly within their communities, so they can easily reach most of the farmers by foot or bicycle.

Table 30: Type of transport used by lead farmer

Type of transportation	Frequency	Percent (%)
Bicycles	13	52
Foot	8	32
Bicycle and foot	4	16
Total	25	100

As part of their role, lead farmers keep records of the activities that they perform (Table 31). Many organizations indicated that lead farmers keep records of the names and locations of farmers that they visit or/and train (64 percent), maintain a register of farmers attending meetings (56 percent), and record the number of and details about demonstrations mounted, as well as farming activities performed and the dates. Other diverse records kept by lead farmers depend on the organization and areas of technical focus.

Table 31: Types of records kept by lead farmers

Type of record	Frequency	Percent (%)
No. of farmers contacted/trained	16	64
Attendance at training events	14	56
No. of demonstrations mounted	11	44
No. of farmers applying technology	9	36
Farming activities and dates	8	32
Messages/interventions promoted	6	24
Amount of produce sold	2	8
Dairy records	2	8
Challenges faced by farmers	1	4

N=25. Percentages sum to greater than 100 because organizations gave multiple responses.

Items monitored by the organizations to assess the performance of lead farmers are shown in Table 32. Many organizations monitored the number of farmers or groups that a lead farmer visits or trains (56 percent), the number of technologies promoted by the lead farmer (40 percent), the number of demonstrations mounted (32 percent), the quality of demonstrations (28 percent) and maintenance of records on meeting attendance (32 percent). Field staff used many other ways to monitor lead farmer performance, some of which were specific to the organization and the type(s) of activities.

Table 32: Items monitored to assess lead farmer performance

Items monitored	Frequency	Percent (%)
No. of farmers/groups contacted/trained	14	56
No. of interventions/messages	10	40
Attendance and dates of training events	8	32
No. of demonstrations mounted	8	32
Quality of demonstrations	7	28
Whether LF maintains records	4	16
Names of farmers/groups	3	12
Production – yields	3	12
Farming activities and dates	3	12
Challenges	2	8
Amount sold	2	8
Disease prevalence	2	8
LF behavior	1	4
Adoption by followers	1	4

N=25. Percentages sum to greater than 100 because organizations gave multiple responses.

Some organizations provide an opportunity for communities to give feedback on the performance of lead farmers. The mechanisms used for such feedback are indicated in Table 33. A number of organizations stated that lead farmers provide periodic reports to the village development committee in the area where they work (28 percent), and the committee in turn relays its assessment to the extension organization. In other cases, communities meet and discuss the performance of the lead farmer (28 percent). It was indicated that when the performance of the lead farmer is regarded as unsatisfactory, the community makes a recommendation to the field staff of the organization with whom the lead farmer works, either to provide additional training or to select a replacement.

Table 33: Communities providing feedback on lead farmer performance

Item	Frequency	Percent (%)
VDC receives and discusses LF reports	7	28
Community discusses LF performance and recommends replacement when needed	7	28
Clusters/clubs provide feedback	5	20
Village head provides reports to extension worker/ field staff	2	8
No response	4	16
Total	25	100

About 32 percent of organizations had replaced lead farmers for various reasons (Table 34). Underperformance was cited as a reason for replacing a lead farmer by 32 percent of the organizations. One organization stated that it generally did not replace lead farmers but instead selected and trained new lead farmers if old ones were inactive. The reason given for this was that it leaves room for the lead farmer to rejoin at a later stage when he or she becomes interested again or becomes available. Other reasons that lead farmers were replaced include voluntary withdrawal when a lead farmer secures a job outside the community, has married or moves away from the community. In a few instances, a lead farmer was replaced as a result of death (8 percent).

Table 34: Reasons for replacement of lead farmer

Reason	Frequency	Percent (%)
Underperformance	8	32
Not sure of reason (informant knew of case where the organization had replaced lead farmer in the past but not sure of reason)	8	32
Voluntary withdrawal by the lead farmer	4	16
No response	2	8
Death	2	8
Lead farmer moved out of community	1	4
Total	25	100

3.5. Support for lead farmers

As shown in Table 35, most extension organizations offer residential training (80 percent) for newly recruited lead farmers. Others indicated that lead farmers receive on-the-job training, or that training provided depends on the type of project or activities the organization is involved in. A few organizations (12 percent) did not offer any initial training for lead farmers. One of these was a tobacco company that said it did not need to give additional training to its lead farmers because it trained all of its tobacco farmers at a high level. DAES also did not provide residential initial training, relying instead on on-the-job-training for its lead farmers.

Table 35: Types of initial training received by lead farmers

Item	Frequency	Percent (%)
Residential	20	80
None	3	12
On-the-job	1	4
Depends on the project, some no training	1	4
Total	25	100

The duration of the training offered ranged from one to 10 days as shown in Table 36. Most organizations (60 percent) provide initial training that lasts five days.

Table 36: Duration of initial training of lead farmers

Duration	Frequency	Percent (%)
5 days	15	60
No initial training	3	12
10 days	2	8
3 days	2	8
4 days	1	4
1 day	1	4
No response	1	4
Total	25	100

The content of the technical training that organizations offer to lead farmer is diverse (Table 37). Most extension organizations train lead farmers in crop and livestock production and land resource management (72 percent) related to their programs. Other common training topics are general production management skills (56 percent), farm business management (40 percent), and food processing and nutrition. Lead farmers are also trained in other areas, which vary depending on the extension organization and its area of technical focus.

Table 37: Technical skills of lead farmers' training programs

Content	Frequency	Percent (%)
Crops, land resource and livestock	18	72
General production skills	14	56
Farm business skills	10	40
Food processing, nutrition	5	20
Identifying good quality products	2	8
Good harvesting and storage practices	1	4
Animal health	1	4
Conservation agriculture	1	4

N=25. Percentages sum to greater than 100 because organizations gave multiple responses.

In most organizations, lead farmers are also taught extension techniques during the initial training. The extension skills taught are shown in Table 38. A majority of the organizations (72 percent) said that facilitation and communication are elements of the training. Many organizations (52 percent) stated that lead farmers were also trained in extension methodologies and farm business management. Other topics, such as group dynamics (40 percent) and conflict resolution (30 percent) were also identified. Lead farmers need to possess effective communication skills to enable them to convey technical information to other farmers. However, 32 percent of the organizations did not report inclusion of extension skills in training programs –

they seemed to focus more on equipping lead farmers to be able to demonstrate the technologies they are expected to promote.

Table 38: Extension skills content of lead farmer training programs

Content	Frequency	Percent (%)
Facilitation/communication skills	18	72
Extension methodology, farm business management, communication	13	52
Group dynamics	10	40
No extension skills taught	8	32
Conflict resolution	6	24
Communication, project management, and monitoring and evaluation	2	8
Leadership skills	1	4

N=25. Percentages sum to greater than 100 because organizations gave multiple responses.

The frequency of contact between lead farmers and field staff for most organizations (52 percent) is weekly (Table 39). Field staff members in another 28 percent of organizations meet with lead farmers once (12 percent) or twice (16 percent) every month. In other organizations, the frequency of contact between lead farmers and field staff members depended on the organization's area of technical focus. Most organizations (52 percent) reported that visits by lead farmers to the organization's field office are the most common method of contact. Other organizations (24 percent) indicated that lead farmers use their cell phones to call or send short text messages to the field officer if they need technical back-up or information. In 24 percent of the organizations, field staff visit lead farmers in their communities as the primary means of contact. All the organizations reported that the lead farmers pay for the cost of airtime when they use their cell phones to communicate with field staff members.

Table 39: Frequency of contact of lead farmer with field staff and method of communication

	Frequency	Percent (%)
<i>Frequency of contact</i>		
Weekly	13	52
Twice per month	4	16
Monthly	3	12
Quarterly	4	16
As needed	1	4
Total	25	100
<i>Methods of communication</i>		
Go to field staff/extension worker	13	52
Use cell phone (calls or short message service)	6	24
Field staff/extension officer visits lead farmer	6	24
Total	25	100
<i>Who pays for cost of communication (cell phone charges/airtime)</i>		
Lead farmer	25	100

The extension materials most frequently provided by organizations to lead farmers are information brochures and leaflets (72 percent) (Table 40). Other materials commonly provided are posters (48 percent) and manuals (40 percent).

Table 40: Extension materials provided to lead farmers

Extension materials	Frequency	Percent (%)
Leaflets/brochures	18	72
Posters	12	48
Manuals	10	40
Booklets	5	20
None	3	12
Notebooks and pens	3	12
Protective clothing	2	8

N=25. Percentages sum to greater than 100 because organizations gave multiple responses.

Most organizations give lead farmers seeds (72 percent) and fertilizer (72 percent) for use in establishing demonstrations (Table 41). Some organizations also give lead farmers protective clothing (28 percent), and notebooks and pens (20 percent) for use in the course of carrying out

their work. Other materials provided to lead farmers vary with each organization and the area of technical focus.

Table 41: Materials provided to lead farmers for setting up demonstrations

Materials for demonstrations	Frequency	Percent (%)
Seed	18	72
Fertilizers	18	72
Protective clothing (e.g., boots, overalls)	7	28
Notebooks, pens	3	12
None	3	12
Equipment (irrigation)	3	12
T-shirts	2	8
Drug box	2	8

N=25. Percentages sum to greater than 100 because organizations gave multiple responses.

None of the organizations pay lead farmers a salary (Table 42). It is a policy of the Ministry of Agriculture (Department of Agricultural Extension Services) that extension organizations do not pay lead farmers a salary. The policy was instituted so as not to subvert the many lead farmer programs that provide low or no payments and other incentives for lead farmers. The need for the policy arose when one organization started a lead farmer program in which it paid salaries. Some of the organizations interviewed reported that they and other stakeholders had then approached DAES to develop guidelines and policy to help regulate the use of the farmer-to-farmer extension approach in Malawi. The organization stopped paying the lead farmers once it was approached by the Ministry of Agriculture. Some organizations (8 percent) stated that they refund expenses incurred by the lead farmers and provide per diems (8 percent) when lead farmers attend meetings outside of their communities. All organizations stated that they covered the full cost for a lead farmer to attend events that they organized outside of the lead farmers' communities. Such instances are infrequent, however, because lead farmers are expected to do most of their work within their communities.

Lead farmers in some organizations (20 percent) have income-generating activities associated with their roles as lead farmers. These activities include, for example, proceeds from sale of veterinary drugs. Another example is that of a lead farmer who received training to make energy-saving stoves and has turned this into an income-generating activity. This lead farmer uses his position to assist in identifying customers to buy the stoves. The availability of opportunities to earn an income provides incentives for farmers to become and remain lead farmers.

Table 42: Payments to the lead farmers

Item given to lead farmer	Frequency	Percent (%)
No payment of any type	13	52
Lead farmer has income-generating activities	5	20
Lead farmer given per diems when participating in events organized by organization outside LF's community	2	8
Lead farmer reimbursed expenses for participating in events organized by organization outside LF's community	2	8
No response	5	20

N=25. Percentages sum to greater than 100 because organizations gave multiple responses.

Forty-four percent of the organizations provide some kind of encouragement for lead farmers in an effort to keep them motivated in carrying out what is essentially unpaid voluntary work (Table 43). Some organizations stated that they provide incentives to lead farmers in the form of in-kind benefits such as field trips, exchange visits, seed and fertilizer (16 percent), and by paying allowances (28 percent), usually a cash payment. The organizations generally do not consider this a salary because there is no employment agreement and stipulation of the amount to be received by the lead farmers. One organization indicated that it includes lead farmers as beneficiaries of development interventions that they promote, such as “passing on the gift” – where livestock is given to a farmer on condition that he/she will pass on female offspring to another farmer. Most organizations stated that they recognize the need to provide encouragement to lead farmers because they work hard to help organizations to achieve their targets and contribute to increasing agricultural production. There is concern, however, that providing regular pay to lead farmers would effectively turn them into another class of salaried extension agents in the same category as government extension officers. For many small, resource-constrained organizations, this would be financially unsustainable and would negate the reason why they adopted the farmer-to-farmer extension approach in the first place. The majority of the organizations (52 percent) do not directly provide lead farmers any form of material encouragement. Some organizations (44 percent) indicated that they gave awards to recognize good performance by lead farmers as a form of encouragement. One of the organizations stated that good performance by lead farmers was recognized during field days. The criteria for selecting the best performers are agreed on by the community and the field staff, and they include the quality of demonstration plots and the number of follower farmers trained. The winners are awarded farm inputs, farming equipment, protective clothing or trips to agricultural shows outside of their community.

Table 43: Are lead farmers provided with any kind of encouragement?

Item as encouragement to be a lead farmer	Frequency	Percent (%)
No form of encouragement provided	13	52
Lead farmer given material awards as recognition	11	44
Allowances	7	28
In-kind such as field trips, exchange visits, seed, fertilizer	4	16
First recipient of livestock in “pass on the gift” livestock development programs	1	4

N=25. Percentages sum to greater than 100 because organizations gave multiple responses.

3.6. Organizations’ perceptions of farmers’ motivation to become and remain lead farmers

The results in Table 44 show that social status was ranked by 43.5 percent of the organizations as the main motivation for individuals to become lead farmers. The organizations reported that, because lead farmers become more knowledgeable and obtain skills from the various trainings they attend, their social status in the communities increases. Lead farmers enjoy social benefits as well as economic benefits such as better access to information as a result of their elevated social status. Early access to technologies was the second most important motivation to become a lead farmer, ranked as the most important motive by 26.1 percent of the organizations. Access to technologies is considered very important by farmers because they increase agricultural productivity and thus income. The other motivations – altruism, job benefits, social networking and income generation from associated activities – were of lesser importance; each was ranked highest by 4 to 9 percent of the respondents. The data thus show considerable variation in the importance of the motivations for becoming a lead farmer.

Table 44: Relative importance of various motives to become a lead farmer (1= most important and 6=least important)

	Ranking							Total
	1	2	3	4	5	6	Did not rank*	
Motive	%	%	%	%	%	%	%	%
Altruism	8.7	30.4	13.0	13.0	8.7	8.7	17.4	100
Social network	4.3	8.7	17.4	26.1	17.4	13.0	13.0	100
Social status	43.5	17.4	13.0	8.7	4.3	8.7	4.3	100
Early access to technology	26.1	13.0	17.4	17.4	8.7	4.3	13.0	100
Job benefits	8.7	13.0	17.4	8.7	21.7	17.4	13.0	100
Income generation	4.3	13.0	13.0	4.3	21.7	30.4	13.0	100

N=23. Two of the 25 respondents did not rank the motives because they felt they did not have sufficient information to do so. *Persons not ranking a motive felt that it was not an important one.

The results in Table 45 show that social status was also ranked by 52.2 percent of the organizations as the main motivation for *remaining* a lead farmer. Early access to technology and income generation opportunities each were ranked highest by 13 percent of respondents. Like the motivations for becoming a lead farmer, motivations for remaining one were quite varied. Table 46 also shows that the motivations of lead farmers change after they join a program. The importance of early access to technology declines in importance as a motivation to remain a lead farmer. This may be because the lead farmer gets useful information to help increase agricultural production at the start but obtains little new additional information after that. The importance of income generation opportunities increases as farmers become aware of ways to use their positions as lead farmers to sell products and services related to their positions.

Table 45: Relative importance of various motives to remain a lead farmer (1= most important and 6 = least important)

	Ranking							
	1	2	3	4	5	6	Did not rank*	Total
Motive	%	%	%	%	%	%	%	%
Altruism	8.7	17.4	21.7	8.7	13.0	13.0	17.4	100
Social network	4.3	13.0	8.7	26.1	17.4	17.4	13.0	100
Social status	52.2	21.7	13.0	8.7	0	0	4.3	100
Early access to technology	13.0	8.7	34.8	13.0	21.7	0	8.7	100
Job benefits	8.7	17.4	8.7	13.0	17.4	13.0	21.7	100
Income generation	13.0	8.7	4.3	13.0	13.0	34.8	13.0	100

N=23. Two of the 25 respondents did not rank the motives because they felt they did not have sufficient information to do so. *Persons not ranking a motive felt that it was not an important one.

The results in Table 46 show the mean ranks of the motivations for becoming and remaining a lead farmer. They largely mirror the findings of tables 44 and 45, showing that increased social status is the main motivation behind farmers becoming and remaining lead farmers, followed by early access to technologies. Income generation has the highest standard deviation, reflecting a high degree of variation in responses – a few organizations ranked it very highly, but it was of little importance in most organizations.

Table 46: Mean ranks for reasons for becoming and remaining lead farmers

Motive	N	Mean rank*	Std. dev.
<i>Motivations to become lead farmer</i>			
Altruism	20	4.1	0.5
Social network	20	4.0	0.4
Social status	22	2.4	0.1
Early access to technology	20	2.8	0.2
Job benefits	20	4.2	0.5
Income generation	20	4.4	0.8
<i>Motivations to remain lead farmer</i>			
Altruism	19	3.5	0.2
Social network	20	4.1	0.5
Social status	22	1.8	0.2
Early access to technology	21	3.2	0.5
Job benefits	18	3.7	0.3
Income generation	20	4.3	0.9

*Low means indicate high ranks.

Many organizations (84 percent) stated that they discuss the benefits of helping others with farmers as a means to encourage them to become lead farmers and to motivate them to remain (Table 47). The organizations' field staff discussed with farmers how disseminating information about production practices and technologies can contribute to increased agricultural productivity and help reduce the number of people who are food-insecure.

All four of the faith-based organizations reported that they appeal to religion and religious beliefs as a tool for motivating farmers to become lead farmers and for encouraging them to stay on in the role (Table 47). However, some of the faith-based extension organizations that were interviewed stated that they did not bring up religion during implementation of their activities. One of these organizations stated it explicitly avoided mention of its religious affiliation to the broader community to avoid losing trust and cooperation from farmers who may think the organization intends to draw them away from their own religious beliefs. However, another faith-based organization reported that in some cases it has requested local religious leaders to acknowledge lead farmers at religious meetings, and think this is a very effective way of recognizing the lead farmers for their good performance. Non-faith based organizations indicated that they did not appeal to religion to motivate farmers to become or remain lead farmers.

All four faith-based organizations and 13 of the 15 non-faith based organizations pointed out the benefits of helping one's fellow farmers and members of the community as a way to motivate farmers to become and remain lead farmers (Table 47). The organizations' field staff would

discuss with farmers how disseminating information about improved production practices and technologies can contribute to increased agricultural productivity and help reduce the number of people who are food insecure.

Table 47: Use of religion or benefits of helping others as motivation to become a lead farmer by the organization

Variable	Faith-based organizations (N = 4)		Non-Faith based organizations (N= 21)	
	Frequency	Percent (%)	Frequency	Percent (%)
Uses religious means to motivate/ encourage lead farmers	4	100	0 ^a	0
Discusses benefits of helping others to motivate lead farmers	3 ^b	100	13 ^c	86

a. There is no responses for 4 of the 21 non-faith based organizations included in the survey.

b. There is no response for 1 of the 4 faith-based organizations included in the survey. Percentage determined based on number of organizations for which there is a response to the questions

c. There is no response for 5 of the organizations. Percentage determined based on number of organizations for which there is a response to the questions

3.7. Benefits, difficulties and effectiveness of lead farmer approach

The perceived benefits of the farmer-to-farmer approach reported by the organizations using the approach are shown in Table 48. The majority of the organizations stated that the approach enabled them to reach more farmers than they would have been able to reach using only their field staff (68 percent). Most organizations also stated that they had achieved higher rates of adoption of technologies (68 percent) as a result of using the approach. Other benefits cited include sustainability of extension efforts (52 percent), reduced operational cost because organizations can hire fewer field staff members and still manage to reach their targets (28 percent), and increased interaction with farmers (16 percent).

Table 48: Main benefits of the lead farmer approach

Benefits	Frequency	Percent (%)
Increased coverage	17	68
Facilitate/increased adoption	17	68
Sustainability – increased ownership, multiplier effect	13	52
Less costly – use few staff and many lead farmers	7	28
Capacity building	5	20
Feedback from farmers facilitated	4	16

N=25. Percentages sum to greater than 100 because organizations gave multiple responses.

Some of the difficulties most cited in using the farmer-to-farmer approach are shown in Table 49. Some organizations (29 percent) stated that training lead farmers to become effective at communicating information and disseminating technologies was very difficult because of the low levels of education of rural Malawians. Other difficulties cited include high expectations of lead farmers (25 percent), and conflicting messages being put out by numerous organizations, sometimes working within the same communities and each using the farmer-to-farmer extension approach. Some organizations stated that, despite it being made clear that serving as a lead farmer is not a form of employment, some lead farmers still hoped that they will receive some payment in the future; in other cases, lead farmers expected to receive free seed and fertilizer. The organization's field staff were expected to continually explain the voluntary role of a lead farmer and find means of motivating them to continue serving in this capacity. Organizations reiterated that, at some point, other extension organizations were paying lead farmers in addition to providing in-kind benefits such as bicycles. This made it difficult for organizations with limited resources, including DAES, to attract lead farmers to their programs. This problem was resolved by a stakeholders' agreement not to pay a salary to lead farmers or provide material benefits not related to their roles. During interviews, DAES officials reported that the Ministry of Agriculture had developed guidelines for the use of the farmer-to-farmer approach that discouraged payment of salaries for lead farmers.

Table 49: Some difficulties in the use of the farmer-to-farmer approach

Challenge	Frequency	Percent (%)
Difficulties of training lead farmers	7	28
Conflicting messages and approach on the ground	6	24
High expectations from lead farmers	6	24
Lead farmers can become distant from community members because of perks	4	16
Bicycles for lead farmers not durable	3	12
Not all trained as lead farmers stay active	3	12
Difficulties in keeping lead farmers motivated for the role	3	12
Support from community members sometimes limited	2	8
No control on lead farmer after project	2	8
Limited budget to support lead farmers	2	8
Introducing innovations to female farmers	1	4
Initial resistance from government extension workers if not involved in selection of lead farmers	1	4
Low commitment by lead farmer to perform the function	1	4
None	1	4
Need for continued monitoring to ensure quality of lead farmer work	1	4

N=25. Percentages sum to greater than 100 because organizations gave multiple responses.

The results in Table 50 show the perceived effectiveness of the farmer-to-farmer extension approach by the extension organizations interviewed. A large proportion of organizations (76 percent) gave the farmer-to-farmer approach a score of between 7 and 8 on a scale of 1 (worst) to 10 (best). This may be because of the most mentioned benefits of the approach in Table 48 above – for example, that the approach enables organizations to reach many farmers at reduced cost, increases uptake of technologies and is perceived as being sustainable.

Table 50: Effectiveness scores of the farmer-to-farmer approach on a 1 to 10 scale

Score	Frequency	Percent (%)
6.0	3	12.0
7.0	9	36.0
7.5	1	4.0
8.0	9	36.0
8.5	2	8.0
10.0	1	4.0
Total	25	100.0

3.8. Changes to lead farmer approach by organizations

Over time, most organizations (60 percent) stated that they had made changes in their use of the lead farmer approach. The types of changes they had made are shown in Table 51. Many

organizations made changes to the farmer-to-farmer approach to suit their circumstance. For example, some organizations require a lead farmer to focus on a single or a few technologies instead of many to avoid overburdening the lead farmer. Other changes and reasons for the changes include the introduction of incentives (bicycles or T-shirts) to help keep lead farmers motivated, improved coordination between the field staff and lead farmers, increased role of the community in the selection of lead farmers and introduction of more structured lead farmer training activities to help improve effectiveness of the approach.

Table 51: Changes by organizations to the farmer-to-farmer approach and reasons for changing

Reasons for introducing changes	Frequency	Percent (%)
Number of organizations that introduced changes over time in using the lead farmer approach	15	60
<i>Reasons for introducing changes</i>		
Provide incentives and support to lead farmers (bicycles, T-shirts)	4	16
Reduce workload of lead farmers: reduce number of innovations a lead farmer champions, increase number of lead farmers by having old “followers” who received training and have worked for many years with LF perform some LF roles	3	12
The nature of intervention – e.g., dairy is more technical, so more educated lead farmers are required	1	4
Organization’s activities based on collecting wild (not produced) products	1	4
For sustainability: Discontinuation of free drug kits for para-veterinary services (farmers to pay for drugs and proceeds used for restocking)	1	4
Improve coordination	1	4
Inclusion of youth in programs	1	4
Involve community in selection of lead farmers	1	4
Improve effectiveness of the farmer-to-farmer approach by providing more structured training	1	4
Improve effectiveness of the approach through use of regular training and supervision of lead farmers	1	4

N=25. Percentages sum to greater than 100 because organizations gave multiple responses.

4. Summary, conclusions and recommendations

In this study, the experiences of extension organizations in Malawi using the farmer-to-farmer extension approach were elicited through a survey. Following democratization in Malawi in the early 1990s, the government adopted a new policy on agricultural extension that encourages the participation of many actors in the provisioning of extension and rural advisory services. The

organizations providing extension services to smallholder farmers in Malawi use many extension approaches in trying to serve their clientele. Farmer-to-farmer extension is one of the approaches used by many organizations. It was observed that organizations use the farmer-to-farmer approach for several common reasons, which include increased coverage at low cost and a perception of increased sustainability. The approach was also said to increase adoption of technologies.

Lead farmers are involved in communicating information and disseminating technologies to fellow farmers in their communities. Government and other organizations providing extension services to smallholders have limited budgets, so they are unable to hire sufficient numbers of extension agents to reach all farmers who require such services. Engagement of lead farmers provides the opportunity to reach more farmers at a lower cost.

From the perspective of the organizations that were interviewed for this study, the farmer-to-farmer extension approach appears to be very effective. One of the main findings of the study is that there is a great deal of variation in the way the approach is implemented. Such variation has negative and positive effects. On the negative side, certain practices of some organizations – e.g., providing salaries to lead farmers – were found to have negative effects on other organizations that could not afford to pay salaries. That DAES was able to resolve this problem through a stakeholder agreement not to pay salaries, which is laudable. The variation in approaches has a positive side as well, in that organizations experiment with new approaches and learn how to adapt these to fit their unique needs as well as from one another. The results are the many positive changes in the farmer-to-farmer approach (Table 51) which make them more participatory, sustainable and effective. However, there is need for a mechanism to share lessons of best practices among organizations to improve the effectiveness and efficiency of extension systems using the approach. For example, stakeholders could meet periodically to share experiences, both benefits and challenges, in implementing lead farmer programs. This could be done, for example, at meetings of the stakeholder panels⁹ at district and area levels.

Concerning gender, the proportion of women among lead farmers, 37 percent, was the same as the corresponding proportion among field staff. This implies that on average, women lead farmers do not help an organization to increase the proportion of women providing extension services (defined as number of extension staff plus number of farmer trainers). However, certain organizations were able to use the programs to increase the proportion of women in extension. For example, in the Department of Agricultural Extension Services, women make up 21 percent of field extension staff and 40 percent of lead farmers. The lead farmer program in this case helps empower rural women and helps the department reach more women, assuming that women lead farmers reach more women farmers than men do.

⁹These are forums that are intended to bring together the diverse players in the agriculture sector, including NGOs, farmer associations, smallholder farmers, traditional leaders and agribusinesses, with the aim of coordinating the planning and delivery of extension services across districts.

Finally, the study shows the high degree in variation among motivations for farmers to become and remain lead farmers. Lead farmers have different motivations and will thus respond to different incentives. For example, lead farmers motivated by social status will respond to incentives that improve their visibility in the community, such as certificates, T-shirts, contests, and public recognition and appreciation by project and local leaders. Lead farmers motivated by early access to technology will respond most to learning opportunities such as training events, field days and exchange visits. The sharing of experiences among organizations on providing incentives can help improve effectiveness and the sustainability of the approach.

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