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# Africa RISING – Integrating Nutrition in Value Chains (INVC) in Malawi bridging activity: Quarterly progress report (01 January, 2017 – 31 March, 2017)



Produced by

International Institute for Tropical Agriculture

Published by

International Institute of Tropical Agriculture

April 2017

[www.africa-rising.net](http://www.africa-rising.net)

The INVC Bridging Activity, hereafter referred to as The Activity, is a two-year project funded by the USAID Malawi Country Mission. It is a relay project/ activity between the Integrating Nutrition in Value Chains (INVC) I Project which came to an end in October 2016 and its successor project, Agricultural Diversification of Incomes and Nutrition (ADIN).

The Activity was commissioned with the objective of ensuring that the gains achieved by INVC I project are not lost in between the transition phase from INVC I to ADIN. It therefore carries on with the implementation of some of the actions implemented under INVC I. Specifically, The Activity provides continuity in assistance to a subset of smallholder farmer groups and EPAs that received services from INVC for the 2016/17 and 2017/18. It also includes latest research findings from the Africa RISING project to further boost production of the Activity beneficiaries.



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## **COVER PHOTO**

Farmers at a project demonstration plot where they get to learn and compare different technologies. Genschers Chisanga/IITA.

# AFRICA RISING – INVC BRIDGING ACTIVITY MALAWI

**IITA – International Institute of Tropical Agriculture**

**QUARTERLY PERFORMANCE REPORT**

*(01 January 2017 – 31 March 2017)*

## **DISCLAIMER**

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# CONTENTS

Acronyms and Abbreviations.....	ii
Tables .....	v
<b>I EXECUTIVE SUMMARY .....</b>	<b>1</b>
<b>2 INTRODUCTION .....</b>	<b>2</b>
2.1 Geographic zone of influence .....	2
2.2 Implementing partners .....	2
<b>3 PROJECT IMPLEMENTATION.....</b>	<b>4</b>
3.1 Advancing value chains: facilitate access to market information and marketing opportunities.....	4
3.2 Improving agricultural productivity .....	8
3.3 Technology adoption .....	9
3.4 Training.....	12
3.5 Promotion of improved technologies.....	13
3.6 Data collection on adoption of promoted technologies .....	13
3.7 Seed fairs .....	14
<b>4.0 MONITORING AND EVALUATION .....</b>	<b>16</b>
<b>5.0 CHALLENGES .....</b>	<b>17</b>
<b>6.0 PLANNED ACTIVITIES FOR QUARTER 4 .....</b>	<b>18</b>
6.1 Component 1: Advancing market competitiveness.....	18
6.2 Component 2: Promoting agricultural productivity .....	18
6.3 Monitoring and Evaluation.....	18
<b>7.0 CROSS-CUTTING ISSUES.....</b>	<b>19</b>
<b>8.0 CONCLUSION .....</b>	<b>20</b>

# Acronyms and Abbreviations

<b>ACE</b>	Agricultural Commodity Exchange for Africa
<b>ADC</b>	Area Development Committee
<b>ADIN</b>	Agricultural Diversification Income and Nutrition
<b>AEDC</b>	Agriculture Extension Development Coordinator
<b>AEDO</b>	Agriculture Extension Development Officer
<b>Africa RISING</b>	Africa Research in Sustainable Intensification for the Next Generation
<b>AGRA</b>	Alliance for Green Revolution in Africa
<b>AGSWAp</b>	Agriculture Sector-wide Approach
<b>AHCX</b>	Auction Holdings Commodity Exchange
<b>AI SL</b>	Agri-Input Suppliers Ltd
<b>BVO</b>	Bid Volume Only
<b>CAADP</b>	Comprehensive Africa Agricultural Development Programme
<b>CADECOM</b>	Catholic Development Commission of Malawi
<b>CBO</b>	Community-based Organization
<b>CDCS</b>	Country Development Cooperation Strategy (USAID)
<b>CDI</b>	Clinton Development Initiative
<b>CGIAR</b>	Consultative Group on International Agricultural Research
<b>CMI</b>	Champion for Market Information
<b>CNFA</b>	Citizens Network for Foreign Affairs
<b>CoP</b>	Chief of Party
<b>CRS</b>	Catholic Relief Services
<b>DADO</b>	District Agricultural Development Officer
<b>DAECC</b>	District Agricultural Extension Coordinating Committee
<b>DAES</b>	District Agricultural Extension Service
<b>DARS</b>	Department of Agriculture Research Services
<b>DEC</b>	District Executive Committee
<b>DFID</b>	Department for International Development (UK)
<b>EPA</b>	Extension Planning Area
<b>ETG</b>	Export Trading Group
<b>FAO</b>	Food and Agriculture Organization of the United Nations
<b>FO</b>	Farmers' Organization
<b>FOG</b>	Fixed Obligation Agreement
<b>FtF</b>	Feed the Future
<b>FUM</b>	Farmers' Union of Malawi
<b>FY</b>	Fiscal Year
<b>GAP</b>	Good Agronomic Practices
<b>GDP</b>	Gross Domestic Product
<b>GIS</b>	Geographic Information System
<b>GoM</b>	Government of Malawi

<b>GP</b>	Groundnut platform
<b>GPS</b>	Global Positioning System
<b>GSL</b>	Grain Security Limited
<b>Ha</b>	Hectare
<b>ICRISAT</b>	International Crops Research Institute for the Semi-Arid Tropics
<b>ICT</b>	Information Communication Technology
<b>IFRI</b>	International Food Policy Research Institute
<b>IITA</b>	International Institute of Tropical Agriculture
<b>IITA</b>	International Institute of Tropical Agriculture
<b>INVC</b>	Integrating Nutrition in Value Chains
<b>IPM</b>	Integrated Pest Management
<b>IR</b>	Intermediate Results
<b>ISFM</b>	Integrated Soil Fertility Management
<b>IT</b>	Information Technology
<b>LUANAR</b>	Lilongwe University of Agriculture and Natural Resources
<b>MAPAC</b>	Malawi Program on Aflatoxin Control
<b>MAPS</b>	Malawi Agricultural Policy Strengthening
<b>MCC</b>	Millennium Challenge Corporation
<b>MGDS II</b>	Malawi Growth and Development Strategy II
<b>MIP</b>	Market Information Point
<b>MISST</b>	Malawi Improved Seed Systems and Technologies Program
<b>MKW</b>	Malawi Kwacha (symbol for)
<b>MoAIWD</b>	Ministry of Agriculture, Irrigation, and Water Development
<b>MOST</b>	Malawi Oilseed Sector Transformation Program
<b>MRA</b>	Malawi Revenue Authority
<b>MSME</b>	Micro, Small, Medium-Scale Enterprise
<b>MSU</b>	Michigan State University
<b>NGO</b>	Non-Governmental Organization
<b>OSPTWG</b>	Oil Seed Products Technical Working Group
<b>OVO</b>	Offer Volume Only
<b>PMEP</b>	Project Monitoring and Evaluation Plan
<b>R4D</b>	Research for Development
<b>RMA</b>	Rural Marketing Advisor
<b>RUMARK</b>	Rural Market Development Trust
<b>SAIOMA</b>	Strengthening Agricultural Input and Output Markets in Africa
<b>SANE</b>	Strengthening Agricultural and Nutrition Extension Services
<b>SSTP</b>	Scaling Seeds and Technologies Partnership
<b>SSU</b>	Seed Services Unit
<b>STAM</b>	Seed Traders Association of Malawi
<b>STEPS</b>	Supporting the Efforts of Partners
<b>TWG</b>	Technical Working Group
<b>UN</b>	United Nations
<b>USAID</b>	United States Agency for International Development

<b>USG</b>	United States Government
<b>VC</b>	Value Chain
<b>VFP</b>	Village Financial Platform
<b>VSLA</b>	Village Savings and Loan Associations
<b>WRS</b>	Warehouse Receipt System
<b>ZOI</b>	Zone of Influence

# Tables

<b>Table 1:</b> Farmer groups that have shown interest in collective marketing.....	5
<b>Table 2:</b> Farmer groups and number of participants trained on ACE Market School module. ....	6
<b>Table 3:</b> Number of clients profiled for the ACE MIS by partners.....	7
<b>Table 4:</b> Percentage adoption of soybean production technology by farmers. ....	10
<b>Table 5:</b> Percentage uptake of groundnut production technology by farmers. ....	11
<b>Table 6:</b> Summary of farmers trained in production best practices by partner organizations.....	12
<b>Table 7:</b> Summary of participants in the field days. ....	13



# I EXECUTIVE SUMMARY

Activities over the reporting period were on Component 1: Assessing farmer group and partner capacity gap in market competitiveness, developing monitoring tools for collecting data from farmers related to market competitiveness and training on the ACE markets and principles of marketing and market competitiveness; developing marketing plans including collective marketing through commodity aggregation as well as developing plans for seed loan repayment.

In Component 2 activities were focused on training farmer groups and included monitoring activity implementation through partners, conducting training of trainers (ToT) and training farmer groups on agronomic best practices in the production of groundnut and soybean, conducting field days on demonstration plots and farmers' fields promoting the best practices. Collection of data from farmers' fields on the adoption of agronomic technology being promoted and the tagging of GIS coordinated locations of farmer organization meetings for the data base were also undertaken during the period.

Two review meetings with partners to review the Bridging Activity plans and progress were held in January and March.

Four staff members joined the INBV BA team. These are the M&E Specialist, and three field technicians who have been deployed to Dedza, Mchinji, and Ntcheu where they are coordinating INVC Bridging Activities. During the same period, two interns joined the team and were attached to data collection on the adoption of production technology and data entry.

Registration of vehicles transferred from INVC has been finalized so that the vehicles have now acquired diplomatic numbers with the rest of vehicles on the IITA fleet.

# 2 INTRODUCTION

The Feed the Future (FtF) Bridging Activity has two components: (1) **Advancing value chain competitiveness** and (2) **Improving productivity**. The objective is to deepen participation in the grain legume value chain by farmers previously assisted by INVC.

**Component 1** aims to improve the competitiveness of the grain legume value chain by increasing access to business development and financial and extension services, transforming the relationships between value chain actors, and strengthening market linkages. The hypothesis is that the development of efficient value chains and remunerative markets will act as a pull factor for the sustainable production of the different commodities. Priority is being placed on fostering direct agreements among participating producer groups, sources of inputs, and buyers of products that have the potential to be sustained after the conclusion of the Activity.

**Component 2** aims at increasing the productivity of soybean and groundnut through the efficient use of natural resources (land and water) and the adoption of improved varieties and recommended agronomic practices while at the same time minimizing negative impacts on the environment.

A **sub-activity of Component 2** is the follow-up extension messages being disseminated to farmers who benefited from Seed Fairs being conducted in three districts (Mangochi, Balaka, and Machinga) as a humanitarian action to ease the shortage of good seeds as a result of two consecutive years of poor harvest due to drought.

The **objective** of the Activity is inclusive agricultural sector growth that will contribute to improved household incomes. The focus on grain legumes has the potential to contribute to increased incomes and a diversified diet with improved protein intake which should lead to reduced stunting and improved nutritional outcomes for women and children. The objective will be achieved through the following **intermediate results**: (1) improved agricultural productivity, and (2) expanded markets and trade as measures that will also transform the less productive agricultural sector in Malawi.

## 2.1 Geographic zone of influence

The INVC Bridging Activity is operating in seven districts in FtF's ZOI in Malawi. The Activity's service is targeting up to 39,000 rural households that will benefit from productivity and value chain interventions in five districts (Dedza, Ntcheu, Mchinji, Lilongwe rural, and eastern highlands in Mangochi). In total, the activity will cover 15 EPAs in Mangochi, Ntcheu, Dedza, Lilongwe, and Mchinji. An additional 18,000 will benefit from Seed Fairs in Mangochi lowlands, Balaka, and Machinga during this year.

## 2.2 Implementing partners

The Bridging Activity has partnered with seven organizations for implementation. Each of the partners has a specific role and/or geographic zone to cover. The six implementing partners are the following:

- i. Agricultural Commodity Exchange (ACE) is responsible for the implementation of activities to promote value chain competitiveness in Lilongwe and Mchinji. They are also providing capacity building to trainers for three partners operating in three other geographic areas.
- ii. CADECOM is implementing activities in four EPAs in Dedza (Chafumbwa and Kanyama) and

Ntcheu (Njolomole and Bilira).

- iii. Farmers Union of Malawi (FUM) is implementing activities in five EPAs in Dedza (Linthipe), Lilongwe (Chileka and Chitsime), and Mchinji (Chiosya and Mikundi).
- iv. WE EFFECT (WE) is implementing activities in Mangochi (Katuli and Ntiya).
- v. Catholic Relief Services (CRS) conducted Seed Fairs in Balaka, Machinga, and Mangochi.
- vi. Malawi Improved Seed Systems and Technologies Program (MISST) provided extension messages on the best technologies for increasing the productivity of grain legumes for smallholder farmers and accelerating adoption of the technologies through demonstration plots and field days.
- vii. Michigan State University (MSU) provided teaching and learning materials for delivery to farmer groups through ToT for extension staff of implementing partners and DAES in collaboration with the Bridging Activity Agricultural Productivity Specialist and Value Chain Specialist and developed data collection templates for assessing technology adoption rate.

# 3 PROJECT IMPLEMENTATION

The main activities during this quarter have been the training of grassroots extension staff and lead farmers in participating farmer groups on best agronomic practices and principles of efficient marketing and the management and governance of farmer organizations, also the field monitoring of crop performance, data collection on technology adoption, and conduct of field days to facilitate wider adoption of best practices in groundnut and soybean production.

Two review meetings with implementing partners ACE, CADECOM, FUM, and WE EFFECT were held in January and March to assess progress in implementation of the Activity by the various partners, and to explore areas of potential collaboration with other Activities/projects. SANE was linked with ACE to collaborate on utilizing district extension forums to advance organized market messages through the district agricultural committees and other stakeholder forums. In discussions with AgDiv it was agreed in principle that the INVC Bridging Activity and AgDiv would in 2016/2017 season collaborate in implementation of Component 2 activities (Advancing Market Competitiveness) since it would not be possible for AgDiv to roll out field activities in Quarter 2 as the office is just being established in Malawi. To facilitate collaborative planning, the INVC Bridging Activity shared its draft plan with the AgDiv CoP.

A process to re-register vehicles transferred from the INVC project was finalized in March. The process faced delays due to demands from MRA and the Directorate of Road Traffic for more documentation for the transfer of the vehicles to IITA to take effect.

Four meetings were held with USAID during the quarter to update the USAID Mission Agricultural Development Program team on progress of the INVC BA Activity. Six monitoring visits were made to Mchinji, Lilongwe, Dedza, Balaka, Machinga, and Mangochi in February and March to assess crop performance and progress in implementation.

Three positions were filled for field technicians who are to be stationed in five districts to coordinate activities and the officers have been deployed to duty stations in Dedza, Ntcheu, and Mchinji. An acceptance for the fourth position was received but the officer is yet to sign his contract and report for work.

## **3.1 Advancing value chains: facilitate access to market information and marketing opportunities**

### **3.1.1 Promote product aggregation and collective marketing**

ACE has been working with all other partners (FUM, CADECOM, WE) training farmers in grain aggregation for collective marketing. The focus was on training farmer groups and frontline staff on the formulation of aggregation plans. Thirty field staff (23 M, 7 F) and 361 representatives (201 M, 160 F) from various farmer groups were trained on the formulation of aggregation plans to spearhead the process of collective marketing. The plan includes the estimation of quantities to be aggregated by each farmer group. Table I below lists farmer groups that have indicated interest in aggregation for collective marketing.

**Table 1:** Farmer groups that have shown interest in collective marketing.

Name of Farmer Organization	District	Partner	Crop	Availability of ACE Warehouse	Membership		
					Male	Female	Total
Lifidzi Association	Dedza	CADECOM	GNuts	Yes	2671	3891	6,562
Dedza Association	Dedza	CADECOM	GNuts	No	2,116	1,890	4,006
Chitowo Soya Cooperative	Dedza	FUM	Soya	No	505	504	1,009
Machichi Cooperative	Mchinji	FUM	Soya	Yes	317	192	509
Mikundi Cooperative	Mchinji	FUM	Soya	No	436	314	750
Nachichi Cooperative	Lilongwe	FUM	Soya	No	230	213	443
Nyanja	Lilongwe	FUM	Soya	No	602	399	1,001
Njolomole Chapter	Ntcheu	CADECOM	Soya	No	366	600	966
Bilila Cooperative	Ntcheu	CADECOM	Soya	Yes	40	7	47
Katuli Association	Mangochi	WE EFFECT	Soya	Yes	1682	1068	2750
Mtiya Association	Mangochi	WE EFFECT	Soya	No	452	409	861
<b>Total</b>					<b>9,417</b>	<b>9,487</b>	<b>18,904</b>

To ensure aggregation plans are achieved, ACE will be working closely with all implementing partners. The partners are responsible for organizing the farmer groups to aggregate their commodities as envisaged in their respective aggregation plans while ACE is focusing on linking the farmer groups to markets using various marketing options available. Rural Marketing Advisors (RMAs) based at various locations in Dedza, Lilongwe, Mchinji, Ntcheu, and Mangochi are responsible for informing farmer groups what marketing options are available in relation to the volume that will be aggregated by each group.

### 3.1.2 Awareness raising and training

As part of its effort to raise the awareness of ACE services to a larger population, ACE continued running a weekly radio program on Zodiak Broadcasting Station (ZBS) every Friday at 17:05 hours local time. During the reporting period, 13 programs were broadcast on ZBS. The program is raising awareness among farmers and farmer groups that are in the Feed the Future ZOI on ACE services. The program will also encourage the aggregation and group marketing of the selected value chains that INVC Bridging Activity is promoting. As part of its effort to build capacity amongst grassroots

beneficiaries, ACE has embarked on training the farmer groups on the “ACE market School” module. The module is focusing on raising awareness among farmers on the services available to ACE and how they can have access to them. To date, 361 farmers have been trained in various districts, as shown in Table 2 below.

**Table 2:** Farmer groups and number of participants trained on ACE Market School module.

	District	Name of Farmer Group	Name of Partner	Participants		
				Men	Women	Total
1	Mchinji	Mikundi Cooperative	FUM	13	13	26
2	Lilongwe	Mlondenzi Group	ACE	17	10	27
3	Ntcheu	Bilira Cooperative	CADECOM	22	11	33
4	Mangochi	Katuli Association	WE	13	11	24
5	Dedza	Lifidzi Association	CADECOM	15	20	35
6	Dedza	Chitowo Association	FUM	75	62	137
7	Lilongwe	Mlomba Bulking Group	ACE	22	8	30
8	Ntcheu	Njolomole chapter	CADECOM	20	14	34
9	Mangochi	Ntiya Association	WE-EFFECT	49	48	97
10	Lilongwe	Chikondi Group	ACE	16	12	28
11	Lilongwe	Nachichi Cooperative	FUM	10	14	24
				201	160	361

The trainings were conducted by ACE in consultations with respective partners. Partners were responsible for organizing the trainings for the delivery by ACE of the content of the “ACE Market School” module. The trainings are continuing in some EPAs and the number of participants is likely to increase.

### 3.1.3 Strengthen and promote access to market information

For the reporting period, ACE had been working with farmer groups in disseminating market information via Champions for Market Information (CMI). They have identified three members from each farmer group (Chairperson, Secretary, and Treasurer) who are receiving market information on behalf of the group. During the reporting period 105 farmers were identified as CMI and they are receiving market information on a weekly basis so that they can share this with other members of the

organization to aid in making informed decisions. The process of identifying the CMI was participatory and involved profiling each individual member including the phone number. The farmers are receiving the SMS through their mobile phone numbers. It is anticipated that the number of CMI will increase as the process of profiling the farmers is still ongoing.

### **3.1.4 Scale and strengthen market information systems**

To scale the ACE Market Information System, ACE is collaborating with all other partners INVC BA in profiling producers and farmer organizations. During the quarter under review additional farmers and farmer organizations were profiled as shown in Table 3 below.

**Table 3:** Number of clients profiled for the ACE MIS by partners.

<b>District</b>	<b>Numbers uploaded</b>
CADECOM	103
ACE	105
Total	208

The exercise will be completed in the next quarter as all the necessary arrangements have been finalized.

### **3.1.5 Expand market opportunities and facilitate trade**

During the reporting period ACE RMAs have facilitated trades in the FtF ZOI. During the three month period, ACE has facilitated trades amounting to 44.7 t of soybean in Mchinji and Lilongwe alone.

### **3.1.6 Link farmers and other value chain participants to sources of financing**

In addition to the funding that was already secured for the 2016/2017 marketing season, during the report quarter, ACE has also secured MK 1 billion from Opportunity Bank of Malawi (OBM) for the warehouse receipt system and negotiations are at an advanced stage to secure MK 3 billion from CDH Bank, MK 2.5 billion from National Bank of Malawi (NBM), and MK 1 billion from FDH Bank, which would bring the total finance available for the WRS to more than MK7.5 billion, if the negotiations are successful.

With regard to the disbursed finance for the WRS, during the reporting period, ACE facilitated a total of MWK 1,160,600 (USD 1612.3) in the FtF zone of influence. This disbursement was mainly used to finance the maize enterprise within the FtF ZOI.

## 3.2 Improving agricultural productivity

### 3.2.1 Rainfall

Generally the rainfall has been good and persistent during the entire cropping season and has been above expectation except for the three EPAs, Bilira in Ntcheu, and Ntiya and Katuli in Mangochi, that experienced a dry spell after the first planting rains, specifically the period between late December and mid-January, affecting the late planted soybean crop. Because of the low soil moisture the rate of germination was lower than expected and farmers had to fill gaps to attain optimal plant density.

### 3.2.2 Field monitoring

Monitoring visits were made by FtF INVC Bridging Activity staff to all the EPAs implementing the Bridging Activities with the following observations:

#### Crop performance

**Soybean crop:** The germination rate for soybean seeds was very good except for the two EPAs, Bilira in Ntcheu and Ntiya and Katuli in Mangochi, which were affected by late planting of the crop. However the early planted crop (before 15 December) was not affected because by the crop was well established by the time the dry spell set in. At the time of writing this report, the early planted soybean was already harvested. The later planted crop was also almost ready for harvesting.

**Groundnut crop:** In general, there was poor germination of groundnut seeds supplied to farmers in all the EPAs that received groundnut seeds. Seed Services Unit (SSU) made a random survey of farmers' plots, counting number of plants on 1 m x 1 m quadrant in 30 farmer plots planted with CG7 groundnut seeds supplied by two contractors. The findings were, on average, that only 50% of the planted stations had plants and the rest of the planting stations did not contain any plants. After thorough investigation it was established that the groundnut seeds had low seed vigor. The shoots were too weak to press through the soil surface and died off before emergence. In the laboratory normal germination of above 75% could be achieved because there was less physical resistance as the seeds are planted in sterilized sand or on paper towels. However, in the field after germinating, the seeds had energy reserves too low to break through the soil crust. When energy reserves are low, although the seeds can germinate they fail to come through to the soil surface and die off under the soil crust.

### 3.2.3 Pests and diseases

**Soybean crop:** Incidents of caterpillar attack, mainly leaf rollers and white grubs, and damage on soybean leaves and roots were observed during the vegetative stage. This was more serious in Mitundu, Malingunde, and Chileka EPAs in Lilongwe District and Linthipe in Dedza District. District Agriculture Offices and partner organizations assisted the affected farmers in containing the pests using a pesticide (Cypermethrine). Dry spells in some areas in February and March triggered termite attacks on soybean and groundnut. However this was not on any significant scale.

**Groundnut crop:** No pests of economic significance were observed in groundnut fields. However, in some fields attacks by termites were observed and encouraged by dry spells.



### **3.3 Technology adoption**

During the monitoring visit a checklist was administered to sampled farmers (15 farmers' plots per each EPA) to assess the uptake of the promoted technologies in the INVC Bridging Activity. It was of particular interest to note that in EPAs where FtF INVC implemented activities for more than one year the double row, flat topped ridges, and one seed per station were observed in 81% of beneficiary fields across the EPAs where seed loans were disbursed compared with 27% among farmers who received seeds through Seed Fairs. The lower adoption rates could be attributed to quantities of seeds. Most farmers felt 4 kg was too small to warrant the adoption of double rows and closer intra-row spacing. Furthermore, there is still low adoption of accurate intra-row spacing and planting of a single seed per station. Farmers cited small seed size and the short spacing interval between stations, making it difficult to hand drop a single seed per hole and accurately space at 5 cm between planting stations. Adoption levels of almost all promoted technologies were lower among farmers who received seeds via Seed Fairs (Table 4). However, it was observed that in groundnut plots, adoption of technology was higher, averaging 72% and 77% respectively, in plots where seed loans as compared with 37% and 55% respectively in plots where seeds were obtained from Fairs; only 3% planted the groundnut in double rows and 5% on flat topped ridges.

**Table 4:** Percentage adoption of soybean production technology by farmers.

Partner (seed Loan)	Total number of sampled Plots	Ridge alignment (%)	Intra-ridge spacing (%)	Double row (%)	Flat topped (%)	One seed per station (%)	Inoculant (%)
CADECOM (NU)	12	42	33	75	75	42	67
FUM (MC)	11	18	9	55	64	55	91
FUM (DZ)	10	13	13	75	50	13	69
FUM (LL)	15	15	0	91	82	73	-
WE (MH)	13	50	63	100	100	88	100
ACE (LL)	18	11	5	89	83	63	89
Total /%Adoption	79	25	21	81	76	56	83

Partner (seed Loan)	Total number of sampled Plots	Ridge alignment (%)	Intra-ridge spacing (%)	Double row (%)	Flat topped (%)	One seed per station (%)	Inoculant (%)
CRS (BLK)	28	30	0	25	25	10	55
CRS (MH)	16	10	0	40	40	0	40
CRS (MHG)	31	24	8	16	12	12	88
Total/ %Adoption	75	21	3	27	26	7	61

**Table 5:** Percentage uptake of groundnut production technology by farmers.

Partner	Total number of sampled Plots	Ridge realignment (75 cm apart)	Interplant Spacing (12-15cm)	Double Row	Flat topped	One seed per station
ACE (Mchinji)	9	55	67	78	78	100
CADECOM (Dedza)	12	88	87	100	100	100
% Adoption	21	72	77	89	89	100
CRS (Balaka)	28	12	56	0	0	96
CRS (Mangochi)	16	30	40	10	10	40
CRS (Machinga)	31	70	70	0	5	100
Samples Plots /Average % Uptake	75	37	55	3	5	79

## 3.4 Training

### 3.4.1 Agronomic best practices and training on pest and disease management.

Trainings on pest and disease management in groundnut and soybean were held in January and February in all the EPAs participating in the INVC Bridging Activity. The training targeted Lead Farmers, field staff from partner organizations and government agriculture extension staff from participating sections of the EPAs. In turn, the Lead Farmers trained follower farmers in their respective communities through demonstration plots. AEDOs and staff from partner organizations backed up the trainings. However ACE preferred to train the participating farmers directly together with Lead Farmers and AEDOs, rather than adopting the trickle-down approach of ToT. The trainings were conducted by MISST in some EPAs and by the Agriculture Productivity Specialist in others. The experience has shown that understanding of technologies was higher in the ACE training approach where whole farmer groups were trained together although the trainings were crowded.

**Table 6:** Summary of farmers trained in production best practices by partner organizations.

Partner	Target	Male	Female	% of Female	Total
ACE	All farmers	885	562	39	1,447
CADECOM	Lead farmers	131	101	44	232
FUM	Lead farmers	401	295	42	695
We Effect	Lead farmers	64	68	52	132
<b>Total</b>		<b>1,381</b>	<b>1,029</b>	<b>43</b>	<b>2,410</b>

### 3.4.2 Pre- and post-harvest handling

At the time of writing the report the trainings on pre- and post-harvest handling had started for soybean growing groups with ACE groups in Mitundu. The early maturing soybean is almost ready for harvest while the late maturing soybean which was planted in November had also matured. The training was aimed at preparing farmers to apply what was taught to how they can harvest their crop and how to handle the harvested crop to attain good quality grain which can attract better prices and minimize aflatoxin contamination. The Agriculture Productivity Specialist and MISST technicians facilitated the trainings targeting all participating farmers. It has been observed that the most effective method in imparting new technologies is by showing pictures depicting a technology using a PowerPoint presentation or illustrated handouts.

### 3.5 Promotion of improved technologies

#### 3.5.1 Demonstration plots

Mounting of demonstration plots (mother and baby demos) was the responsibility on MISST. DAES was responsible for the identification of the plot sites to ensure they were accessible to the public.

Each EPA was to benefit from 20 mother and 100 baby demos for soybean and 20 mother demos and 200 baby trials for groundnut. Land and field management for the demos was a responsibility of the farmer (owner of the land) while MISST provided all the required inputs including seeds. MISST technicians monitored the planting of the demo to make sure that the necessary technologies are applied.

#### 3.5.2 Field days

Field days showcasing best practices for crops and agronomic practices for disease and pest management conducted at 11 demonstrations, attracted 3225 participants (1786 M and 1439 F; Table 7).

**Table 7:** Summary of participants in the field days.

<b>Partner</b>	<b>Number</b>	<b>Male</b>	<b>Female</b>	<b>% of Female</b>	<b>Total</b>
CADECOM	2	325	358	52	683
FUM	5	997	510	34	1,507
We Effect	4	464	571	55	1,035
<b>Total</b>	<b>11</b>	<b>1,786</b>	<b>1,439</b>	<b>45</b>	<b>3,225</b>

### 3.6 Data collection on adoption of promoted technologies

INVC BA in collaboration with Michigan State University (MSU) initiated a data collecting exercise using a structured survey questionnaire on sampled farmers in all the EPAs implementing INVC Bridging Activities. The main objective of the survey is to assess the adoption of agronomic practices being promoted by the INVC Bridging Activity for farmers to adopt in order to increase productivity of their crop of groundnut and soybean and the outcome of the technology adoption as reflected in farmer's production practices, yield level, and income. The survey is ongoing; the data are yet to be analyzed and will be reported in the fourth quarter.

## 3.7 Seed fairs

### 3.7.1 Field monitoring

#### Rainfall

Rainfall has generally been good this season; however, there were pockets of intermittent dry spells in some areas at the onset of the growing season especially in Bazale, Rivirivi, Maiwa, and Nyambi EPAs. Traditionally, maize has been the major crop and was prioritized during the cropping season with the first planting rain. Legumes come second or third which means after the main rains, hence less moisture.

#### Crop performance and stand

Crop performance varied depending on crop type and geographical location owing to weather patterns as follows:

**Groundnut:** Plant density in most fields is low averaging 62%. In cases where farmers also had planted farm-saved seeds, the plant density was much higher about 80%. This is essentially a reflection of the low germination rate of the seeds planted. However, the crop was performing well in the field in all the implementing EPAs.

**Pigeon pea:** According to field assessment done by CRS, the germination rate was at an average of 81.5% for pigeon pea. At the time of writing the report the performance of pigeon pea was good, at vegetative stage while in other areas the crop had started flowering. Due to the problem of land, pigeon pea had been mostly put as a hedge with other crops (picture below).



A field of groundnut and pigeon pea in a double-up cropping system. Genschers Chisanga/IITA.

**Soybean:** Production was not as popular as it was for groundnut and pigeon pea, as reflected in the quantity of seeds obtained by farmers, 53.5 t compared with 71.6 t for groundnut and 69.6 t for pigeon pea, hence the low number of farmers who grew soybean, because it is not a traditional crop in the area where CRS is active.

**Pest and disease Incidence:** The main pest observed in farmers' fields was the elegant grasshopper, particularly in pigeon pea. However with continued rains the infestation eased. Intermittent dry spells triggered termite attacks on the already grown plants in some areas, causing wilting in groundnut and leaf falling in pigeon peas.

### **3.7.2 Quantity of seeds obtained by farmers from Seed Fairs**

Total amount of seeds accessible by farmers from Seed Fairs organized by CRS/OSSEDI, came to 194,817 kg (71,572 kg groundnut, 69,651 kg pigeon pea, and 53,594 kg soybean) valued at MK503,020,000 obtained by 17995 farmers. OSSEDI have been subcontracted by CRS and continued to provide extension support to farmers who got the seeds through the Fairs. However, technologies being promoted have a lower adoption rate among farmers who planted seeds from Fairs (Tables 3 and 4). Most farmers planted the crop in mixtures with other crops owing to shortage of land and could not afford to plant the seeds in pure stands. Intercropping made application of a full technology package for a specific crop a challenge.

### **3.7.3 Success stories**

Domasi EPA is geographically divided into two zones: the dry hilly zone (on top of Chikala hills) and the lower wet zone (down the foot of the hills to the Lake Chirwa flood plain). Soybean farming is usually done in the dry hilly zone. The foot of the hill and the flood plain are normally used for maize, rice, groundnut and pigeon pea production. The Mlambe Women Group, in GVH Mtambalika, ventured to experiment on the suitability of growing soybean in their agro-ecology as it was thought to be unsuitable for soybean production. The group created a test plot where they planted the soybean seeds. To their surprise the crop has responded beyond their expectation and everybody is called to witness the miracle field. From the Seed Fair very few farmers grew soybean in the field but with this observation, it is more likely that more farmers in the area will request soybean seeds because the trial mounted by the Mlambe Group of farmers has demonstrated that soybean can also do well in this area.

## 4.0 MONITORING AND EVALUATION

Bridging Activity recruited a Monitoring and Evaluation Specialist who started work on the 6<sup>th</sup> of March 2017. He is be responsible for M&E activities. Due to a backlog of M&E activities due the vacant position which has been a challenge to fill since inception, the new recruit has immediately developed a work plan for pending M&E activities for the fourth quarter (April-June). Activities include taking up responsibility on data collection which had been initiated by the Agricultural Productivity and Value Chain Specialists, in collaboration with Michigan State University to collect data on adoption of technologies, productivity and marketing from a sample (10%) of beneficiary farmers participating in the Bridging Activities. A survey on adoption of Agricultural technologies was conducted in all 7 EPAs in which the Bridging Activity is operating.

The M&E Specialist attended an orientation and briefing at USAID Mission office on reporting requirements and reporting platforms, i.e. the Feed the Future monitoring system which has several agencies reporting on similar indicators and the need to align activity outcomes to these Feed the Future indicators, which are reported once a year. The on-line reporting platform opens in October and closes in November. The second reporting platform is the Devresults which is specifically a platform for USAID Mission in Malawi and reporting is done quarterly. Login credentials are yet to be advised by USAID Malawi for the Bridging Activity to start reporting online.

A data entry clerk was hired on temporary basis to assist in reviewing all data collected to ensure completeness and quality and inputting into relevant computing software packages for analyses.



## 5.0 CHALLENGES

- Absence of certified warehouses in the impact areas where farmer groups are located. This will affect the plan for collective marketing. Out of the 11 groups that have shown interest in aggregating their commodities, only four are within the reach of ACE certified warehouses. Groups may be required to rent space for storage or may need to move a commodity quickly from the point of storage to certified warehouses. This is currently being discussed to map the way forward.
- The major challenge faced during the season was to get to understand the causes of poor germination in farmers' fields when the same batch of seeds had a certification of an above-standard germination rate and yet germinated very poorly in farmers' fields. A request was made to Seed Services Unit to do further tests, including a vigor test. The remaining groundnut seeds not taken up by farmers failed the vigor test. Even though the seeds germinated they failed to break through the soil crust, thereby dying off under the soil. This result has led to the conclusion that there is great need to review the certification of grain legumes especially groundnut. From these results it is clear that results on the germination rate alone are not enough for grain legumes but have to be accompanied by results of vigor tests and information on year of production. It is common knowledge that grain legumes lose vigor with each generation and the loss of vigor is accelerated if the seeds are stored in warm environments before planting. This finding has triggered to open discussion with relevant stakeholders to review the grain legume certification system.

# 6.0 PLANNED ACTIVITIES FOR QUARTER 4

## 6.1 Component 1: Advancing market competitiveness

- Post-harvest handling of commodity (harvesting, cleaning, grading, and storage),
- Commodity aggregation,
- Access to market information,
- Access to markets and financing. Encouraging groups in seed credit recovery will also be a top priority in the fourth quarter.

## 6.2 Component 2: Promoting agricultural productivity

- Training farmers in soil and water conservation,
- Work on gross margins of collected production data,
- Work with partners on working with FOs plans to procure fresh seeds from proceeds of seed loan repayments.

## 6.3 Monitoring and Evaluation

- Conduct annual outcome survey,
- In collaboration with the Ag Specialist and Value Chain Specialist conduct an economic analysis of the production and market price data.

## 7.0 CROSS-CUTTING ISSUES

Issues of climate change and effects on the environment and natural resources were highlighted during field days, to underscore the importance of applying best practices such as crop residue incorporation, crop rotation, in legume production of groundnuts, soybeans and pigeon peas, to maintain good soil structure to improve water holding capacity to improve productivity. Farmers were also reminded to resist from using child labor in farm operations.

Lead Farmer positions are dominated by men, as evidenced by the statistics in trainings done, where more male lead farmers than female lead farmers attended the training in agronomic best practices. Only 43% of the lead farmers were women compared to 57% men lead farmers. The domination of men was more pronounced in the ACE Groups training. This is not surprising considering established national trends where men tend to dominate in cash earning enterprises, while women are more engaged in food security enterprises. Level of education also plays a role in segregating women in leadership. To be a lead farmer, one is required to be literate. Women in rural areas tend to be disadvantaged in terms of education. However, the trend in the WE EFFECT zone of influence is an exception, because there were more female lead farmers (52%) in the training (Table6). However, even though overall more men attended field days than women, the number of women attending field days was good (43%). In CADECOM and WE EFFECT zones of influence more women attended field days than men (Table 7).

## 8.0 CONCLUSION

The Activity is so far delivering on all its planned activities for the quarter. The training on best agronomic practices, disease and pest management that implementing partners conducted is one of the key milestones towards building the capacity of farmers in the areas controlling pests and diseases. A gap analysis in marketing conducted in January revealed serious gaps in knowledge and capacities in implementing partner field staff and farmer groups required for instituting an efficient organized commodity marketing system. Trainings in principles of marketing, developing marketing plans, aggregation and collective marketing, market information and introduction to the “ACE Market school” were conducted to address such gaps. Partner field staff continued to provide extension services in partnership with DAES of the MoAIWD staff in the zones of influence, which has greatly benefitted farmers.

Field monitoring revealed that the rate of adoption of the technologies being promoted by the Bridging Activity vary, with some technologies, such as planting in double rows in both soybean and groundnuts and use of inoculant in soybeans at planting, have been widely adopted by farmers. However, the adoption of recommended plant spacing distance, both between planting stations within the row and row spacing is still a challenge. Field days were held to amplify the messages being promoted on recommended technologies, at which farmers saw firsthand how the various technologies being promoted contribute to improved productivity of the groundnuts, soybeans and pigeon peas.

The training, field monitoring, field days and partner review meetings were successful as a result of good coordination between INVC BA staff, partners and their farmer groups. It is through combined efforts that farmers implement all the planned activities.

