

Integrating Nutrition in Value Chains (INVC) in Malawi Bridging Activity Project Annual Progress Report (01 June 2016 – 31 May 2017)



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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) 1 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 1 project are not lost in between the transition phase from INVC 1 to ADIN. It therefore carries on with the implementation of some of the actions implemented under INVC 1. 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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Integrating Nutrition in Value Chains (INVC) Bridging Activity Project

IITA – International Institute of Tropical Agriculture

ANNUAL PERFORMANCE REPORT

(01 June 2016 – 31 May 2017)

Cover Photo: INVC Bridging Activity beneficiary soybean field in Ntiya EPA Mangochi. Photo credit: Genschers Chisanga/IITA.

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Acronyms and Abbreviations

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

ICT	Information Communication Technology
IFRI	International Food Policy Research Institute
IITA	International Institute of Tropical Agriculture
IITA	International Institute of Tropical Agriculture
INVC	Integrating Nutrition in Value Chains
IPM	Integrated Pest Management
IR	Intermediate Results
ISFM	Integrated Soil Fertility Management
IT	Information Technology
LUANAR	Lilongwe University of Agriculture and Natural Resources
MAPAC	Malawi Program on Aflatoxin Control
MAPS	Malawi Agricultural Policy Strengthening
MCC	Millennium Challenge Corporation
MGDS II	Malawi Growth and Development Strategy II
MIP	Market Information Point
MISST	Malawi Improved Seed Systems and Technologies Program
MKW	Malawi Kwacha (symbol for)
MoAIWD	Ministry of Agriculture, Irrigation, and Water Development
MOST	Malawi Oilseed Sector Transformation Program
MRA	Malawi Revenue Authority
MSME	Micro, Small, Medium-Scale Enterprise
MSU	Michigan State University
NGO	Non-Governmental Organization
OSPTWG	Oil Seed Products Technical Working Group
OVO	Offer Volume Only
PMEP	Project Monitoring and Evaluation Plan
R4D	Research for Development
RMA	Rural Marketing Advisor
RUMARK	Rural Market Development Trust
SAIOMA	Strengthening Agricultural Input and Output Markets in Africa
SANE	Strengthening Agricultural and Nutrition Extension Services
SSTP	Scaling Seeds and Technologies Partnership
SSU	Seed Services Unit
STAM	Seed Traders Association of Malawi
STEPS	Supporting the Efforts of Partners
TWG	Technical Working Group
UN	United Nations
USAID	United States Agency for International Development
USG	United States Government
VC	Value Chain
VFP	Village Financial Platform
VSLA	Village Savings and Loan Associations
WRS	Warehouse Receipt System
ZOI	Zone of Influence

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1.0 Executive summary

The INVC Bridging Activity (BA) was launched in June 2016 at a workshop held for AR/IITA and stakeholders; the output of the consultative meeting was used to refine the INVC BA proposal for resubmission to USAID and for establishing networking relationships between the BA and implementing partners (IPs). Four non-government organizations with long experience in community development, ACE, CADECOM, CRS, FUM, WE EFFECT, and DAES went into partnership with IITA for implementation of the INVC BA.

Office space and administrative support were provided for an interim Activity Manager. Additional office space and furniture were also provided for prospective Chitedze-based staff. Relevant BA personnel were recruited. These included the Activity Manager and 4 others (VC Specialist, Ag. Productivity Specialist, the Administration and Grant Management Specialist, and the M&E Specialist) also 3 out of 5 BA district coordinators. Two successful candidates for the positions of district coordinator declined IITA's job offer because they had secured a longer-term employment elsewhere. The position of M&E Specialist took some time to fill since 3 successful candidates declined the remuneration packages IITA offered. The short duration of the Bridging Activity was also a factor. The position was advertised 3 times and was taken only in March 2017.

Consultation with potential BA partners was initiated and an understanding was reached for possible partnership in BA implementation. Agreement was reached for equipment and vehicles from ex-INVC project to be transferred to INVC BA. The transfer was done during the last week of October 2016 just before INVC closed down.

Partners developed activity work plans and budgets for consideration by INVC BA. Contract agreements were signed by ACE and CRS in September 2016. CADECOM, FUM, and WE signed contract agreements in December. ACE sub-contracted AgroTech to implement Component 2 (Improving Agricultural Productivity) of their contract, in which it was responsible for implementing a seed loan scheme and supporting beneficiaries with delivery of extension messages on how to apply recommended technologies promoted by INVC BA to improve productivity.

Beneficiary farmer groups and farmers were identified and briefed. The required quantities of certified seeds were determined, procured, and delivered to farmer groups in 8 districts (3 districts were dedicated to supporting farmers' access to certified seeds through Seed Fairs, and 5 districts were dedicated to supporting farmers' access to seeds and soybean inoculant through seed loans to farmers. These were in 2 modules: a standard 10 kg of certified groundnut or soybean seeds with a 50 g sachet of inoculant, to be repaid in form of grain at harvest. The repaid grain is to be sold and the proceeds will be used to buy fresh seeds to distribute to new beneficiaries in Year 2. In total, 15,034 farmers benefited from certified seed loans offered by INVC BA through partners in 11 EPAs in 5 districts of Dedza, Lilongwe, Mangochi, Mchinji, and Ntcheu; and 17,995 farmers had access to certified seeds through Seed Fairs in 6 EPAs in 3 districts of Balaka, Machinga, and Mangochi.

Training sessions for frontline field staff in soybean and groundnut best-bet technologies were conducted by IITA, MISST consortium, and MoAIWD to equip them with relevant knowledge for delivery to lead farmers and follower farmers. In total 30 extension agents from the DAES and

partner staff working in the INVC BA ZOI attended trainings in the technologies, as well as 57 Government staff and 634 Lead farmers.

Partners and IITA INVC personnel monitored beneficiary farmers' activities in legume production, as they applied the technologies that are promoted by the BA for efficient production and marketing in the groundnut and soybean value chains to achieve increased yields and income. Data on technology uptake were taken up by beneficiary farmers and marketing was captured through Spot Surveys using structured questionnaires.

Demonstrations were set up to be learning centers for farmers to accelerate technology take-up through observation and field days in agronomic practices and postharvest best practices. At least 10 meetings were held with USAID Mission in Malawi, mainly to inform the Mission about BA's progress. Review meetings were held with IPs in each quarter to assess progress.

2.0 Introduction

This report summarizes the activities of the INVC Bridging Activity (INVC BA/the Activity) for the period June 2016 through to May 2017.

INVC ended in October 2016, and its successor, the Agricultural Diversification Activity (AgDiv), officially started in same month. The Activity provides continuity in assistance for two farming seasons (2016/17 and 2017/18) to a subset of the farmer groups and EPAs that received services from INVC.

2.1 Project description

The Activity features two of the four major components of INVC: (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 to increase productivity in the targeted crops through the efficient use of natural resources (land and water) and increased adoption of improved varieties and recommended agronomic practices while at the same time minimizing the negative impacts on the environment. Support for grain legume Seed Fairs in three districts (Mangochi, Balaka, and Machinga) is also a feature of Component 2.

The main **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 also to 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.

2.2 Geographic zone of influence

The INVC Bridging Activity is operating in seven districts in FtF's ZOI in Malawi. The Activity's services targeted up to 15,000 rural households in Year 1 to benefit from productivity and value chain interventions in five districts (Dedza, Ntcheu, Mchinji, Lilongwe rural, and eastern highlands in Mangochi). The Activity covered 11 EPAs in Mangochi, Ntcheu, Dedza, Lilongwe, and Mchinji, and the additional 18,000 beneficiaries had access to improved seeds through Seed Fairs in Mangochi lowlands, Balaka, and Machinga during this year (Table 1).

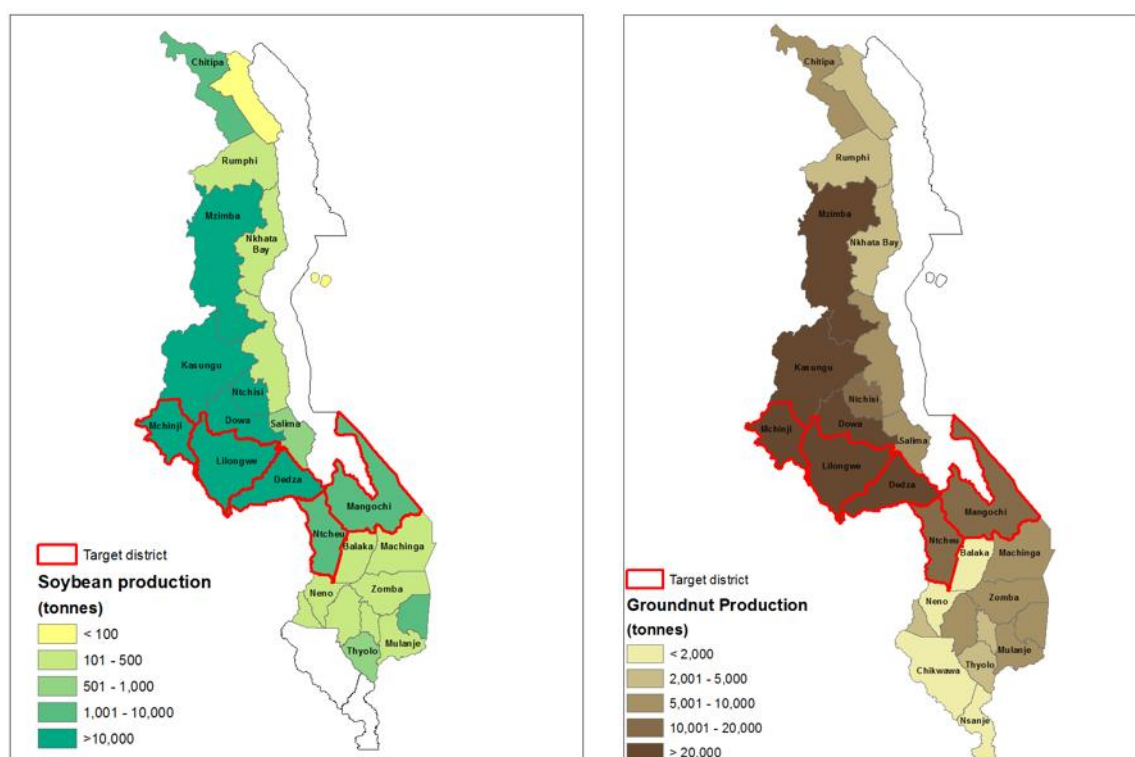


Figure 1. The relative importance of the target districts in production of both soybean and groundnut in Malawi.

Table 1. Targeted INVC Bridging Activity Zone of Influence.

District	EPA
Mchinji	Chiwoshya, Mikundi
Lilongwe rural	Chileka, Chitsime, Mitundu, Malingunde
Dedza	Linthipe, Kanyama, Chifumbwa
Ntcheu	Njolomole, and Bilira
Mangochi	Ntiya and Katuli

Seed Fairs	
Balaka	Bazale and Rivirivi
Mangochi	Katuli and Mthiramanja
Machinga	Domasi and Nyambi

2.3 Project management and staffing

No staff member was recruited in the first quarter of the year, apart from the Interim Activity Manager who was contracted to set up the office of the Activity at IITA Malawi with support from IITA/AR. Consequently, there were no field activities. Much of the first quarter was spent on consultations with stakeholders. The Interim Manager's assignment ended in October with the entrance of the INVC BA Activity Manager. Administrative and logistical support was provided by the IITA Malawi administration and management teams that played key roles in the

process of hiring the technical team and support staff. The process of recruiting project staff conformed with IITA policy.

Table 2. Staff positions filled in INVC Bridging Activity.

	Appointment Date	Date Reported
Activity Manager	3 October 2016	6 October 2016
Agricultural Productivity Specialist	29 September 2016	30 September 2016
Activity Administrator	28 September 2016	10 October 2016
Value Chain Specialist	First choice candidate declined offer (second place candidate accepted offer.)	1 December 2016
M&E Specialist	Interviews held; no successful candidate. Position was re-advertised.	3 April 2017
District Coordinators	Interviews held, 3 accepted IITA job offer but 1 declined.	March 2017

Three interns were also recruited and have been instrumental in field work, assisting data collection and data processing.

Consideration was being given to recruit additional staff to complement the existing capacities of Africa RISING and the IITA country team as well as those of partner organizations. The approved proposal and budget included provision for staff directly engaged by the Activity at the district level to coordinate programs supported by the Activity. Discussions were held on district-level staff, numbers, responsibilities, and how they would relate to partners at the district level. The Activity agreed to contribute to office utility costs for hosting the field technicians at partner offices. Partners were requested to have dedicated staff assigned to INVC BA activities, to coordinate implementation at district level.

2.4 Activity structure

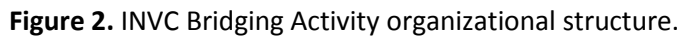
In contrast to a “normal” development project such INVC which had a full complement of staff at the national and district levels involved in all aspects of planning, implementation, and reporting, the Bridging Activity operates virtually entirely through partners who develop and implement activities in accordance with a series of agreements or sub-contracts. The partners are all local organizations who have ongoing programs.

Success is dependent on the performance of the partners as well as those served by these partners: the farmer groups, communities, and individual farmers.

At the national/project level, there is a small core of staff based at IITA Chitedze including the Activity Manager, Activity Administrator, Agricultural Productivity Specialist, Value Chain Specialists, and M&E Officer. The core staff works in collaboration with partners and oversees the implementation of work plans featured in agreements.

There were four core partners collaborating in the implementation of the Activity in 2016-2017: ACE for Component 1 (Value Chain Enhancement); CADECOM, FUM, and WE EFFECT for

The Activity is partnering with DAES, MISST, and ACE in all five target districts. MISST championed setting up demonstration plots for the showcasing of technologies being promoted on soybean and groundnut production. Although ACE had other ongoing programs they agreed to factor in the needs for providing promotional services to farmer groups (cooperatives, clubs, etc.,) participating in the Activity's services in EPA level in each district.



3.0 Administration

This year marked the period of the NVC BA's initial operation in Malawi. Major achievements/results during the year in general management are detailed in this report:

3.1 Project management and staffing

Recruitment of project staff conformed to the existing processes used by IITA Malawi. Eight staff members reported for duty during the reporting period. These were the Activity Manager, Value Chain Specialist, Agricultural Production Specialist, M&E Specialist, District Coordinators, and Administrator. However, it took a long time to get the M&E Specialist on board because three successful candidates had consecutively declined to take up an offer for the position. Reasons given were low remuneration and better offers of longer contracts elsewhere.

Two positions are still vacant which are yet to be filled in the upcoming financial year: district coordinators for Mangochi and Machinga.

In addition to the above staff members, two graduates from LUANAR commenced internship in the Activity on 1 March. They were recruited to assist the Agricultural Productivity and Value Chain Specialists in field data collection in collaboration with Michigan State University who are conducting studies on the adoption of the various recommended technologies in INVC BA. The interns have been coordinating data collection in sampled beneficiary plots in the Zol. Three drivers were also recruited and started work on 3 January 2017. Partners were also advised to assign staff to focus on the Activity's operations wherever appropriate as part of their agreements as a way of ensuring effective implementation on action plans.

3.2 Procurement and distribution of seeds

To facilitate the distribution of high quality legume seeds to farmers in the 2016/2017 production season, a procurement process for prequalified certified seeds and inoculants for soybean was initiated on 27 October 2016. Six resubmitted bids were opened and the compliant bids were evaluated by the Procurement Committee. Four successful bidders were recommended to project management to supply certified seeds. These were as follows: Funwe Seeds who offered to supply 150 t of Makwacha soybean seeds at a value of MK113, 521,400; MUSECO Seed offered to supply 15 t of Tikolore soybean seeds at a value of MK19, 110,000, Agricultural Inputs Suppliers Ltd (AISL) offered to supply 105 t of CG7 groundnut seeds for MK189, 328,888.15, and Global Seeds offered to supply 30 t of CG7 at a value of MK47, 250,000. Management endorsed the recommendations and Administration notified successful bidders. A request was made to the successful bidders to start packaging and mobilizing the seeds to distribution points while contract documents were being prepared at IITA HQ.

Before distribution of seeds, offered seed lots were sampled to determine viability; the sampled lots indicated successful lab germination percentages of above 84%. This prompted the Ag. Productivity Specialist to recommend commencement of distribution to farmer organizations via partner designated distribution points (Annex 4). In total, 210 t of certified seeds (70 t of groundnut and 140 t of soybean) were distributed to the four implementing partners ACE, CADECOM, FUM, and WE for onward distribution to farmer organizations and FO members.

Nitrofix soybean inoculant was procured from a single source – AISL is the only local commercial supplier of the product in Malawi – and delivered to soybean seed suppliers for packaging together with soybean seeds for distribution to beneficiaries.

The successful suppliers delivered the seeds and inoculants to distribution points in all participating EPAs in the INVC Bridging Activity between 14 and 24 November 2016. Some farmer groups distributed the seeds to members immediately upon off-loading, but some FOs took longer to conclude distribution to their members.

3.3 Payment for seeds

The Activity paid Funwe Seed and Multi Seeds Companies in full for the certified soybean seeds they supplied in quarter 2 as they had fulfilled all contractual obligations including seed germination requirements. However, the Activity experienced germination problems with certified groundnut seeds that were also delivered in November and December 2016. Several seed germination tests were conducted by IITA and Seed Services Unit including a seed vigor test and the final reports from SSU on seed vigor indicates that the CG7 groundnut seeds supplied to the INVC BA had low vigor and the bulk of the seeds delivered was carry-over seeds which were mixed with a smaller lot of fresh seeds. As a result, vigor was low. This therefore prompted the Activity to withhold payment to groundnut seed suppliers namely 50% to AISIL and 75% Global Seeds owing to poor germination in farmers' plots. Several meetings were held with the suppliers to resolve this issue but consensus was not reached.

The Activity also met and discussed with Global Seeds' lawyers, on 29 March 2017 regarding the same issue as the lawyers had been pushing for the supplier's payment. IITA reminded the supplier that the contract terms on the last payment was that the remaining 50% of the value of the seeds would be paid upon establishing that the germination rate in farmers' fields would be on average at least 75%. No notable consensus was also achieved because Global Seeds could not acknowledge that the seeds it supplied had poor germination results in farmer's fields. The company believed there was no issue with germination, even though they had agreed during the first meeting in December that there was a seed germination problem, but attributed the problem to the farmers' deep planting. IITA's view was that if the issue had been deep planting it could not have been so widely spread across all EPAs where the seeds were distributed and the germination rate could not have been so different for farmers who also planted their own farm-saved groundnut seed alongside the seed distributed by Global Seeds.

IITA proposed that, if they did not still believe there was a problem with germination of the seeds, there was still time to go and do a second plant population survey and talk to the owners of the plots before they harvest the crop. The lawyer then requested more time to talk to his client and look at the SSU's reports and promised that they would notify IITA when the two parties could meet again to continue the discussion, but this was not done. Instead the lawyer filed a court claim requesting IITA to pay Global Seeds 100% of the outstanding payment. IITA referred the matter to its lawyers, Lilongwe and Co., and the matter is awaiting an out of court settlement to be conducted on 17 July 2017.

AISIL has also filed a court claim demanding payment for the 50% payment being held by IITA for poor germination of its seeds on the farmers' field. The matter has also been referred to IITA's lawyer for defense.

3.4 Sub-granting

Progress was made in developing formal and informal partnerships with a number of projects and organizations, notably MISST, DAES, SANE, STEPS, CNFA, CADECOM, FUM, and WE Effect. Funds were transferred to partner accounts in accordance with the provisions of their contract agreements with IITA.

3.5 Allocation of assets to partners

Motor cycles and a vehicle were transferred to Activity implementing partners after the signing of relevant Memoranda of Understanding. However there was a delay in effecting the transfers resulting from delays in Malawi Government's processes to clear and reregister the vehicles. The distribution of the assets was as follows:

Table 3. Motorcycle and vehicle distribution.

Partner	Items received	Condition
We Effect	2 x Yamaha Motorcycles	Good running condition
CADECOM	3 x Yamaha Motorcycles	Good running condition
FUM	3 x Yamaha Motorcycles	Good running condition
ACE	<ul style="list-style-type: none">3 x Motorcycles, (1 x Honda & 2 Yamaha Motorcycles)1 x Toyota Hilux Twin cab	Good running condition

3.6 Challenges

- The process of developing agreements with partners was very time consuming, especially where coordination and communication among the partners were required. Partners generally prefer to operate independently of each other and are particularly wary of being dependent on inputs from partners with whom they may have had problems previously. There is a tendency to expect or possibly prefer to have all communications between partners to pass through the Implementing Partner, even though agreements may specify the roles of partners and how they should work together.
- Selecting an appropriate contracting mode (fixed amount agreements versus standard contracts) also consumed considerable amount of time, as other parties were in favour of using fixed amount agreements or FAAGs especially with some partners, but IITA preferred standard contracts. Experience with standard contracts with some partners strongly suggests that their use will lead to serious problems in the future as those partners appear to have chronic problems in properly accounting for the funds received as was the case with IITA MISST.
- The other challenge faced in the reporting period was the absence of an M&E specialist from the team. Delays were caused in finalizing the M&E framework and work plan as the team depended on M&E support from IITA HQ and this was not always available.
- Processing of asset transfer to partners was delayed, thereby affecting implementation of activities by partners.

- Absence of district technicians and an M&E Specialist constituted a big challenge as it affected coordination with partners and the development of an effective database.
- The process of engaging the Activity's unit staff was also delayed and this affected the processes of sub-granting to partners, procurement of seeds, and some other activities.

Despite the late appointment of the INVC BA team which resulted in the late preparation of procurement documents and solicitation of qualified certified seed suppliers, the process was fast-tracked and ultimately seeds were delivered to all sites before the planting rains. This was a real success as all other activities in the Activity depended on the promotion of productivity which starts with good seeds and early planting.

4.0 Implementation of Bridging Activity

USAID commissioned IITA through Africa RISING to implement a Bridging Activity to provide a smooth transition and maintain gains made by a phased-off INVC and pave way for the second flagship activity contracted by USAID which would take a while to be set up and start implementation. Activities in Year 1 of the Bridging Activity included conducting consultative meetings with stakeholders to explore areas of potential collaboration. The consultations reached an understanding of possible partnerships in Activity implementation. Furthermore, there were discussions with other FtF activities such as SANE and the newly launched AgDiv and action was initiated to look at areas of collaboration for synergy and complementarity. It was agreed in principle that the INVC BA and AgDiv would collaborate in the implementation of Component 2 activities (Advancing Market Competitiveness) since they could not roll out field activities early in Year 1 as it was getting established in Malawi. To facilitate collaborative planning, INVC BA shared its draft plan with the sister FtF activities.

Office space and administrative support were provided for an interim Activity Manager, and additional office space and furniture were also provided for prospective staff that would be operating from IITA-Chitedze Research Station. Personnel were recruited, including the Activity Manager and 4 others (VC Specialist, Ag. Productivity Specialist, Administration and Grant Management Specialist, and the M&E Specialist, also 3 of the planned 5 BA district coordinators and 4 drivers. Two successful candidates for the positions of district coordinator declined IITA's job offer because they had secured a longer-term employment elsewhere. The position of M&E took some time to fill as 3 successful candidates declined the remuneration packages IITA offered. The short duration of the Activity was also a factor. The position was advertised 3 times and was taken only in March 2017.

USAID and IITA reached an agreement to transfer equipment and vehicles from the ex-INVC project to the INVC BA. The transfer was completed in the last week of October 2016, just before INVC closed down. A process to re-register vehicles transferred from the INVC project was initiated mid-November. The process has faced delays due to demands from MRA and the Directorate of Road Traffic for more documentation to transfer custody of the vehicles to IITA. It is expected that the process should be through by the second week of January 2017.

Contracts for implementing partners CADECOM, FUM, and WE were developed and signed. Consequently, initial funds were transferred to partner accounts in December.

At least 10 briefing meetings were held with the USAID Mission team on Sustainable Economic Growth during the reporting period, mainly to update the Mission team on progress in implementation of the INVC BA. At least 3 joint monitoring visits have been made with Mission officials.

4.1 Advancing value chain competitiveness

These were largely implemented by ACE in collaboration with the other partners, CADECOM, FUM, and WE. Activities in Component 2 - Improving productivity - were implemented through the same implementation partners. The component had two major activities in the 2016-2017 season, i.e., a) procurement and distribution of certified seeds as loans and through Seed Fairs; and b) strengthening of extension services. The implementation of these activities was part of a continuation of some activities of the INVC project and also part of the ongoing grain legume promotional programs of MISST being implemented by IITA and ICRISAT. Seed Fairs were

implemented by CRS. Both components involved partners at district, EPA, and farmer group levels as described in Section 3.3 activity.

Although implementation of the Chithumba model builds on the experience of a successful pilot project implemented by ACE with support from MOST in 2015/2016, many farmers still do not understand the concept. This was reflected in adjustments which had to be made in revising the number of beneficiaries for ACE in Mchinji and Lilongwe from the targeted 3000 beneficiaries for the Chithumba seed loan scheme to 2,464 farmers because not many farmers were volunteering to be part of the beneficiary group in Mchinji district. It is a new concept and farmers were not sure of how the model works. The seed credit program is part of an effort to close the gap between Components 1 and 2 by providing seeds on credit to farmers so that the loan can be repaid in grain. Interested farmers are screened for their ability and commitment to produce grain legumes in sufficient quantities to ensure a marketable surplus. The table below describes geographic spread of implementing partners, the value chains they are working in and number of beneficiaries.

Table 4. Implementing regions, partners and value chains.

Implementing partner	District	Extension Planning Areas (EPAs)	Value Chain	Beneficiaries
CRS Seed Fairs (+ DAES)	Balaka Mangochi Machinga	Bazale, Rivirivi Maiwa, Mthiramanja Domasi, Nyambi	groundnut, soybean, pigeon pea	18000
Seed Loans				
ACE Chithumba (+ DAES)	Mchinji, Lilongwe	Chiosya & Mikundi Mitundu, Malingunde, Mlomba	groundnut soybean	3000
CADECOM (+DAES)	Dedza Ntcheu	Kanyama, Chafumbwa Bilira, Njolomole	groundnut soybean	4500
FUM (+DAES)	Dedza Lilongwe Mchinji	Linthipe Chileka, Chitsime Chiosya, Mikundi	soybean	5400
WE (+DAES)	Mangochi	Katuli, Ntiya	soybean	2100

ACE: This NGO was subcontracted by the phased-out INVC to implement a range of activities related to strengthening the value chains for groundnut and soybean in particular and it was envisaged that those activities would continue for the most part under INVC BA. The activities included development of market information systems (MIS) serving producers and a range of value chain participants in managing the warehouse receipt system by which producers and others holding inventories have access to credit using the produce stored in warehouses as collateral; and the training of participants at various levels of the value chains for the selected

commodities. ACE initiated the mobile SMS where farmers are sent SMS on pertinent market information, such as prevailing prices and commodity markets, with support from INVC BA. The major beneficiaries of the ACE activities were not so much the small producers and trading companies but farmers who are economical producers with larger land holdings and willing to invest and benefit from a sustainable seed loan which is not subsidized.

Furthermore, ACE provided skills to build capacity in all the other partner farmer organizations through conducting training farmer groups in the principles of marketing and the “ACE Market” structured marketing module. ACE subcontracted AgriTech Limited (ATL) to implement the agricultural productivity component of its contract in 3 EPAs in Lilongwe (soybean value chain) and in 2 EPAs in Mchinji (groundnut value chain). ACE AgroTech extended seed credit to 2,464 beneficiaries in the 2 districts in proximity to ACE certified warehouses.

CADECOM worked in 4 EPAs, 2 in Dedza and 2 in Ntcheu, while FUM implemented the Activity in Linthipe EPA in Dedza. The responsibilities of CADECOM (as with FUM and WE) included identifying participating farmer groups; developing plans for the provision of services for each group and coordinating delivery of those services by the partners in accordance with agreed work plans; also in coordinating the seed credit program for their respective farmer groups, as well as monitoring farmer group activities, and reporting. Lessons from the INVC project influenced the decision to recruit field technicians to serve as district coordinators in Ntcheu and Dedza, to monitor activities and link the secretariat and partners to ensure that project activities are implemented and reported at the right time.

FUM worked in the soybean value chain in 5 EPAs in Mchinji (2), Lilongwe (2), and Dedza (1). It coordinated technology transfer in partnership with DAES to participating farmer groups in the soybean value chain and worked with farmers. ACE and MISST also provided technical support in training farmers in structured marketing and best agronomic practices with farmer groups under FUM in both districts.

WE Effect (WE) is also a partner operating in Mangochi. It is in its first year of implementing an INVC activity, unlike the other partners who had been partners of the phased-out INVC project and are continuing with INVC BA. WE identified INVC care-groups that had worked with the INVC project in 2015-2016 to work on the soybean value chain. The care-groups that had formed loose associations for the sake of getting access to seed loans from INVC BA came together in 2016 to form an association under the WE activity implementation. Through its contract with INVC BA, it supported farmer groups in coordinating extension delivery, managing the seed credit program, monitoring farmer activities, and reporting.

The DAES: Staff in all EPAs in the Zol played a big role in backstopping partner field staff and farmer groups with technical messages and training and facilitated some key bridging activities, such as field days and meetings with farmer groups.

MISST provided technical skills and was a resource for training farmers on best agronomic practices to improve groundnut and soybean productivity in all Zols and established demonstration plots to which INVC BA had access during farmer training sessions or field days. CRS was responsible for Seed Fairs for grain legumes in 6 EPAs in three districts of Balaka (2 EPAs, Machinga (2 EPAs), and Mangochi (2 EPAs, Table 4). Seed Fairs were their only activity and the only one that was supported by INVC BA. However, it was also agreed that the

beneficiaries who obtained seeds from Seed Fairs needed to be given technical support in the form of extension through the production cycle to get optimum yield. CRS subcontracted OSSEDI to provide extension to the farmers.

4.2 Development of partnerships

Strong collaborations with other FtF activities developed in the year under review. INVC BA collaborated with AgDiv in postharvest field days and the use of PICS bags for preserving grain against postharvest losses. The BA also collaborated with SANE in identifying effective platforms in the district leadership structure; this can be an entry point for ACE to introduce its main activities to the public, because not many people know about ACE's activities and how it can benefit farmers.

- **MISST** was a partner of INVC BA and provided technical support for promoting improved practices in grain legumes in the 15 targeted EPAs.
- **MSU** working through Africa RISING provided teaching and learning materials for delivery of best-bet agronomic practices to farmer groups through training of trainers for extension staff of implementing partners and DAES in collaboration with INVC BA. It also provided guidance on the development of field questionnaires for sample surveys meant to capture data on technology adoption and activity impact.

4.3 Identification of participating farmer groups

Partners undertook the task of identifying, recruiting mobilizing, and briefing beneficiaries for INVC BA in consultation with DAES. The lists were validated by specialists from the INVC secretariat. The criteria provided for the selection process were as follows:

- The groups should display strong, effective leadership.
- They should show performance, notably in the aggregation and marketing of products.
- They should have indications of the volume of grain legume production and sales in recent seasons.
- They should have some financial capacity (savings, assets, financial management capacities).
- They should be able to make adequate aggregation arrangements.
- They should have linkages to buyers and some experience in dealing with them.
- They should be near to transport/markets/storage facilities.

4.4 Procurement and distribution of seeds

Estimates of seed requirements were developed in consultation with partners. The INVC BA procured and distributed approximately 210 t of certified seeds of groundnut (70 t) and soybean (140 t). Seed suppliers were identified through a competitive tendering process and 4 compliant bidders were selected to supply seeds, two for each crop type. The suppliers delivered the seeds to beneficiary group locations on time, just before the planting rains commenced. The certified soybean seeds had very good germination in farmers' fields. However, the groundnut seeds from both suppliers had very poor germination in farmers' fields averaging 41% and 51% respectively.

4.5 Transitions

The INVC BA is a tale of two transitions. The first transition featured prominently as INVC wound down its field activities in June 2016 and commenced the formal close-out process in July that was completed by the end of October. Although the process faced some challenges, the results have been quite positive on balance in relation to the major purpose of providing a degree of continuity in approach, relationships with partners, and services to farmer groups. Discussions with INVC also featured the transfer of assets, notably vehicles and equipment, and continuity in relation to selected partners.

5.0 Advancing competitiveness in value chains

5.1 Promote product aggregation and collective marketing

To promote product aggregation and collective marketing, ACE has been working closely with other implementing partners, FUM, CADECOM, and WE, and the IITA Value Chain Specialist. During the reporting period, three major activities were conducted to promote product aggregation and collective marketing. These included training staff and farmers on the formulation of aggregation plans, facilitating the formulation of aggregation plans, and facilitating aggregation and collective marketing of soybean.

During the reporting period, **30** of INVC BA partners' staff (**23M, 7F**) and **361** representatives of different farmer groups (**201M, 160F**) were trained on the formulation of aggregation plans to spearhead the process of collective marketing. The trained frontline staff was responsible for facilitating the formulation of aggregation plans for farmer organizations. The plans included the estimation of quantities to be aggregated by each farmer group. Table 5 below shows the quantities of soybean aggregated by each farmer organization and also the volumes that were collectively marketed.

Table 5. Volume of grain aggregated and marketed collectively by farmer organizations.

Name of farmer organization	District	Partner	Crop	Quantities aggregated (t)	Quantities sold (t)	Market Price (MK/Kg)	Name of buyer
Lifidzi Association	Dedza	CADECOM	Soybean	17.55	0	-	-
Chitowo Soya Cooperative	Dedza	FUM	Soybean	25	15.4	157	Bonga traders
Machichi Cooperative	Mchinji	FUM	Soybean	16	12	170	Kamwan a Invest.
Mikundi Cooperative	Mchinji	FUM	Soybean	24	9	170	Kamwan a Invest
Nachichi Cooperative	Lilongwe	FUM	Soybean	75	0	-	-
Nyanja	Lilongwe	FUM	Soybean	64.25	24.25	200	Goods for Good
Njolomole Chapter	Ntcheu	CADECOM	Soybean	32.55	32.55	150	NASFAM
Bilila Cooperative	Ntcheu	CADECOM	Soybean				
Katuli Association	Mangochi	WE EFFECT	Soybean	0	0	-	-
Mtiya Association	Mangochi	WE EFFECT	Soybean	35	35	175	Capital Oil
Total				289.35	128.2		



Photo 1: Aggregated Soybean ready for the Market at Nyanja Cooperative in Lilongwe. Photo credit: Pelias Kabuli/IITA.

During the reporting period, **289.35t** of soybean was aggregated by various farmer groups and **128.2t** was sold collectively. The average price achieved was **MK170/Kg**. This was higher than the average price of **MK140/Kg** at which individual farmers were selling their soybean to unorganized markets (vendors). The 2016/2017 marketing season of soybean has been characterized by low prices that have come about because of over-production. This has forced some selected farmer groups to keep their soybean awaiting better prices.

For the groups that were involved in the groundnut value chain, aggregation has just started and collective marketing will follow. This being the on-set of the marketing season, aggregation and collective marketing for both value chains is still ongoing in some selected farmer groups.

5.1.1 Awareness raising and training

As part of its efforts to raise the awareness of a larger population to ACE services, ACE conducted 46 mass awareness meetings targeting farmer groups and SMEs. ACE also embarked on the promotion of structured trade via national and local media channels through running a weekly radio programs on Zodiak Broadcasting Station (ZBS) every Friday at 17:05 hrs local time. During the reporting period, 36 programs were aired on ZBS. The program is raising awareness among farmers and farmer groups on ACE services in the INVC BA ZoI. The program will also encourage the aggregation and group marketing of the selected value chains that INVC BA is promoting. Table 6 below shows the annual progress on the Awareness raising.

Table 6. Awareness raising about ACE services.

Activity	Sub-activity	Annual Target	Annual achievement	Remarks
Awareness Raising and Training	Introduce FGs and SMEs to structured trade through mass awareness raising meetings	15 field days / mass awareness raising meetings	46 awareness raising meetings	Awareness meetings were held for all the farmer groups under INVC-BA
Awareness Raising and Training	Promote structured trade via national and local media channels; weekly national scale radio program	32 radio programs on ZBS	36 radio programs aired	

As part of its effort to build capacity amongst grass-root beneficiaries, ACE embarked on training the farmer groups on the “ACE market School” module. The module was focusing on raising awareness in farmers on the services available through ACE and how they can have access to them. During the reporting period, 11 sessions were organized targeting a total of 361 representatives of farmer groups. Table 7 below shows the list and number of participants for each farmer group.



Photo 2: Participants at “ACE Market School” at Mikundi EPA, Mchinji District. Pelias Kabuli/IITA.

The trainings were conducted by ACE in collaboration with respective partners. Partners were responsible for organizing the trainings; ACE delivered the contents of the “ACE Market School” module.

Table 7. Farmer organizations trained on ACE market school module.

No.	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-	49	48	97
10	Lilongwe	Chikondi group	ACE	16	12	28
11	Lilongwe	Nachichi Cooperative	FUM	10	14	24
				201	160	361

5.1.2 Strengthen and promote access to market information

Two activities were planned to promote dissemination of market information via Champions for Market Information (CMI). These are individuals (or committees) in farmer organizations that take on the role of commodity marketing. The aim was (1) to disseminate weekly information from ACE to the CMI at each identified farmer organization, and (2) to inform farmer organizations and MSMEs about auctions coming up and invite them to participate at the ACE Market Information Points.

The plan is to ensure that individual farmers have access to market information on a weekly basis so that they can make informed decisions regarding market choices and that they should be able to share the information received with other members of the farmer organization. The process of identifying the CMI was participatory and it involved profiling each individual member including the mobile phone numbers. During the reporting period, 105 CMI were identified from all the farmer groups and 12 sets of weekly information were disseminated as shown in Table 8 below.

Table 8. Champions for Market Information (CMI) and Market Information Points (MIP).

Activity	Sub-activity	Annual targets	Annual achievements	Remarks
Champions for Market Information / Market Information Points.	Organize and maintain the flow of weekly information from ACE to CMI.	32 sets of weekly information disseminated.	12 sets of weekly information.	105 people were identified to be CMI. Due to late profiling of the farmers, only 12 sets of weekly information were disseminated to farmers.
Champions for Market Information / Market Information Points.	Organize learning visits and mock BVO across 5 Market Information Points.		5 Market Information Points visits were held.	47 farmer representatives (33M, 14F) attended the sessions at MIP.

Apart from disseminating information via CMI, ACE also organized the learning visits to MIPs. Representatives of farmer groups were taken to the following MIPs; Kamwendo Warehouse, ACE office, Dedza CADECOM, Ntcheu MIP, and Namwera warehouse. The objectives were to show the farmers and farmer groups other services that they can reach at MIPs, and also to discuss with farmers and farmer groups about different trading options that they can reach at the ACE platform. In total, **47** farmer representatives (**33M, 14F**) were taken to MIPs for a learning visit.



Photo 3: Participants at an ACE Market Information Point (MIP). Photo credit: Pelias Kabuli/IITA.

5.1.3 Scale up and strengthen market information systems

To scale up ACE's Market Information Systems, ACE needed to scale up the client base. This entailed profiling more producers, farmer organizations, and MSMEs via two avenues: a) direct profiling of clients by ACE RMAs, and b) profiling of clients by partners on the project (FUM, CADECOM, and WE EFFECT). During the reporting period, the ACE RMAs have managed to profile 1,387 people on the ACE MIS in all the INVEC BA impact areas. The breakdown is provided in Table 9 below.

Table 9. Number of Clients profiled on ACE MIS in INVC BA Zol.

District	Numbers uploaded
Mchinji	613
Lilongwe	410
Dedza	111
Ntcheu	155
Mangochi	98
Total	1,387

Lilongwe and Mchinji registered the largest numbers of people profiled and uploaded. It is worth noting that these are the two districts where the Chithumba model is operating and it was a requirement for all beneficiaries of Chithumba (who have phone numbers) to be profiled. Farmer profiles are yet to be completed by partners (CADECOM, FUM, and WE) using the ACE profiling form (Annex 1) and it is expected that more beneficiaries will be added.

5.1.4 Collect and disseminate market information

Market information is collected by the ACE Rural Marketing Advisors every week, on market day(s) in the area of operation. Information includes wholesale and retail prices for commodities listed on the form provided in Annex 1. This information is uploaded onto the ACE MIS and is subsequently disseminated to farmers via SMS, radio, and newspapers. For the dissemination of the rural market prices via SMS, the producers, farmer organizations, and MSMEs have to be profiled, to receive market information. Currently **1,387** farmers have been profiled and are receiving market information. Table 10 below summarizes the progress of different channels that ACE employed to disseminate market information to farmers.



Photo 4: Loading soybean bought from Nyanja Cooperative in Chileka EPA, in Lilongwe. Photo credit: Pelias Kabuli/IITA.

Table 10. Dissemination of market Information.

Activity	Sub-activity	Annual targets	Annual achievements	Remarks
Collect and disseminate Market Information.	Disseminate market information via ACE MIS (SMS).	32 sets of weekly information disseminated.	4	Currently 1,387 farmers have been profiled and are able to receive market information. Only 4 sets of weekly information have been disseminated against the target of 32. This was due to late profiling of the farmers.
Collect and disseminate Market Information.	Disseminate market information via national newspapers.	24 newspaper adverts.	29 newspaper adverts.	

5.1.5 Expand market opportunities and facilitate trade

Trade Facilitation

As Lead partner in implementing Component 1 of INVC BA, ACE was responsible for the facilitation of trade across all partners. During the reporting period, 128.2 t of soybean have been sold through the organized markets secured by ACE, partners, and the farmer groups. Table 11 below shows the volumes of soybean traded by the farmer groups in INVC BA Zol.

Table 11. Volume of soybean sold by farmer groups in INVC BA Zol.

Farmer organization	District	Partner	Quantities sold (t)	Price (MK/kg)	Buyer
Chitowo Soya Cooperative	Dedza	FUM	15.4	157	Bonga traders
Machichi Cooperative	Mchinji	FUM	12	170	Kamwana Investment
Mikundi Cooperative	Mchinji	FUM	9	170	Kamwana Investment
Nyanja	Lilongwe	FUM	24.2	200	Goods for Good
Njolomole Chapter	Ntcheu	CADECOM	32.6	150	NASFAM
Mtiya Association	Mangochi	We-Effect	35	175	Capital Oil
Total			128.2		

These sales constitute direct trades where ACE/partners linked the farmer groups to buyers. It should be pointed out that rainfall was favorable during the 2016/2017 agricultural season so there has been a national bumper crop of both soybean and groundnut. This has resulted in low market prices because of the abundant supply on the market in contrast to 2015/2016 season which was a drought year and the result was low supply of the two commodities on the market, fetching competitive prices. The market trend has forced most farmer groups to withhold their produce to wait for prices to improve.

In an effort to explore more trading options and to expose farmer organizations to the ACE trading platform, the ACE trade team in conjunction with partners organized auctions (OVO / BVO) for soybean, groundnut, and pigeon pea. During the reporting period **3 auctions** (OVO / BVO) were held and the last OVO held in June 2017 targeted soybean. The highest price that was offered for soybean was **MK172/Kg**, and this price was still regarded as low by most of the farmer groups.

5.1.6 Warehouse receipt deposits and operations

During the reporting period ACE warehouse personnel issued warehouse receipts in ACE-certified storage facilities in the FtF INVC BA Zol. Altogether 570.67 t of deposits were made; 296.07 t in August 2016, 73.89 t in September, 86.10 t in October, and 114.61 t in June 2017. ACE warehouse operations team conducted regular warehouse inspections in all ACE-certified warehouses to verify stock volume.

5.1.7 Link farmers and other value chain participants to sources of financing

Trade finance

In an attempt to link farmers and other value chain participants to financing, the INVC BA through ACE focused on the disbursement of finance to clients, using funds which were made available by financing institutions for the period April 2016–March 2017, monitoring expenditure of the disbursed funds, and tracking sale of warehouse receipts, forward contracts, and loan settlements. ACE secured financing totaling **\$11,504,178.27 for 2016/2017 season** in addition to funds already secured for the 2016/2017 marketing season, and **\$3,694,444.44 for**

2017/2018 season. During the reporting period, a total of **\$514,199.09** was disbursed within the FtF Zol. This disbursement was used to finance all value chains within the FtF Zol.

5.1.8 Lessons learnt

- Because most farmers are short of cash at time of harvest, they tend to rush to sell immediately after harvest because of the need for immediate cash. This has affected the level of grain aggregation as most retain a larger proportion of their harvest for such direct trade than for collective marketing, affecting progress on efforts to promote accessibility to structured trade.
- Farmers' past experience of being duped by unscrupulous traders has generated a lack of trust in some groups, generating resistance to participation in collective marketing.
- The decision to participate in the structured trade is dependent on the volume of production for individuals in the farmer organizations. Those farmers that have produced large quantities of the targeted crop are willing to participate in structured/organized markets unlike those farmers that have small quantities of the selected crop.

5.1.9 Challenges

- Long distances to certified warehouses affected groups' ability to aggregate due to challenges in storage room and transport to certified warehouses. Out of the 11 farmer groups that were interested in aggregation, only 4 were within the reach of ACE certified warehouses.
- Low market prices for the two value chains. This has come about through favorable weather conditions in 2016/2017 season, resulting in a high supply of the commodities on the market against limited demand.
- Poor quality groundnut seeds resulted in poor germination and low plant population, reduced productivity, and consequently reduced income.
- Weak farmer groups were not able to participate in collective marketing of commodities effectively owing to a lack of effective governance structures.

6.0 Agriculture productivity component

6.1 Bridging Activity beneficiaries

INVC BA targeted 15,000 farmers who would receive groundnut and soybean seeds on loan in quantities ranging from 10 to 30 kg for each beneficiary; 18,000 farmers were to benefit from 11 kg each of the two crops and pigeon pea sourced through vouchers at organized Seed Fairs. ACE implemented a market-oriented *Chithumba* Model, in which beneficiaries received more seeds, about 15 to 30 kg to plant on larger land holdings for an economically viable enterprise. A total of 15,079 beneficiaries received seed loans in the five districts of Mchinji, Lilongwe, Dedza, Ntcheu, and Mangochi and 17,955 farmers benefited from Seed Fairs in the three districts of Balaka, Machinga, and Mangochi. Figures 3 and 4 below show a breakdown of the beneficiary distribution by gender and implementing partner. In both components, the proportion of women was higher than of men, 62% for seed loan and 66% for Seed Fair. However, in the Chithumba model, there were more male beneficiaries than women. This is consistent with findings elsewhere in Malawi where men have been found to dominate in commercially oriented agricultural enterprises while women tend to dominate in food security enterprises.

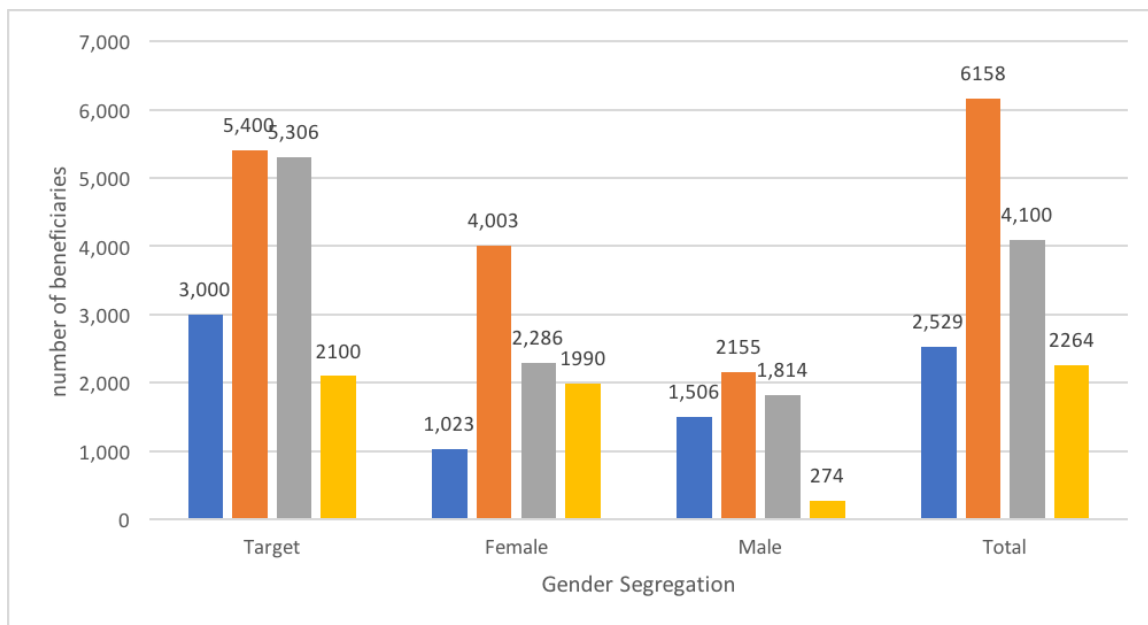


Figure 3. Breakdown of seed loan beneficiaries.

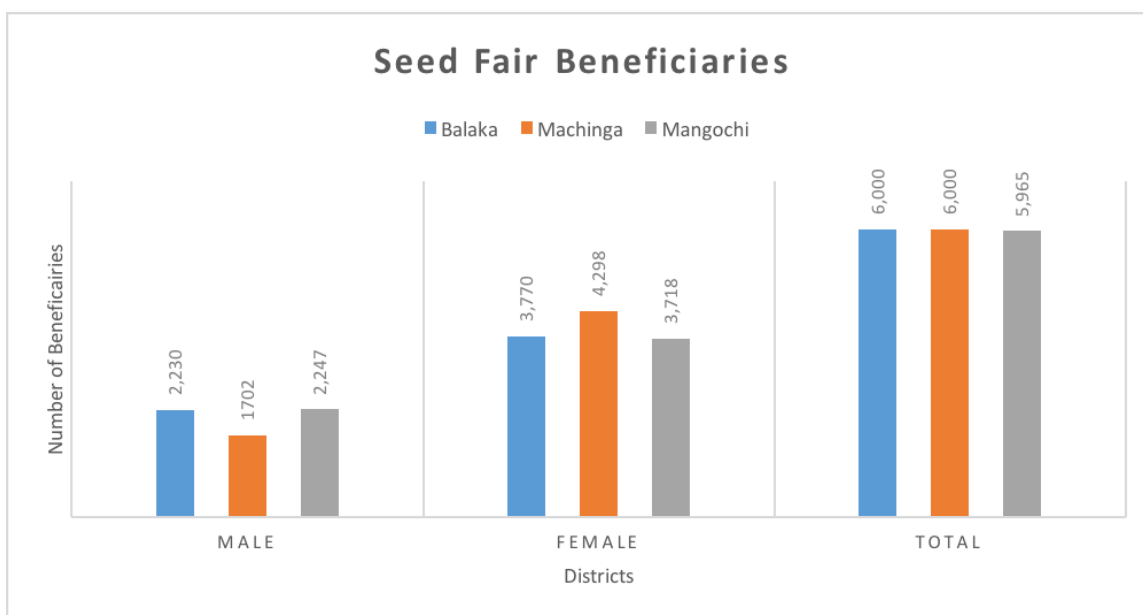


Figure 4. Seed fair beneficiaries.

6.2 Seed distribution

A total of 210 t of seeds (soybean- Makwacha and Tikolole varieties and CG7 groundnut) was distributed to seed loan beneficiaries in the five districts, Mchinji, Lilongwe, Dedza, Ntcheu in Central Region, and Mangochi in the Southern Region. A total of 195 t was given out through Seed Fairs by the use of vouchers to the three districts of Balaka, Machinga, and Mangochi in the Southern Region. Tables 12 and 13 show the seed distribution by district and implementing partners. About 4 t of groundnut seeds from the seed loan component was returned by farmers and eventually returned to the seed supplier after they realized that there was a problem with germination.



Figure 5. Proportion of seeds distributed by crop: (left) seed loan quantity proportions and (right) seed fair proportions.

Table 12. Total distribution of seed loans to beneficiaries.

District	Partners	EPA	Crop	No. of Beneficiaries	Unit Qty. (kg)	Qty./EPA (kg)
Dedza	FUM	Linthipe	Soybean	1,500	10	15,000
	CADECOM	Kanyama, Chafumbwa	Groundnut	2,500	10	25,000
Lilongwe	FUM	Chileka, Chitsime	Soybean	2,784	10	30,300
	ACE	Mitundu, Phirilanjuzi, Mlomba	Soybean	1,174	30	34,700
Mchinji	FUM	Mikundi, Chiosya	Soybean	1,900	10	19,000
	ACE	Mikundi, Chiosya	Groundnut	1,357	30	40,710
Ntcheu	CADECOM	Bilira, Njolomole	Soybean	1,600	10	16,000
Mangochi	WE Effect	Katuli, Mtiya	Soybean	2,264	10	25,000
TOTAL				15,079		210,000

Table 13. Number of seed fair beneficiaries.

District	Ben. number	Groundnut	Pigeon pea	Soybean
Balaka	6,000	23,397	22,488	18666
Machinga	6,000	23,621	24,045	17202
Mangochi	5,965	24,554	23,118	17726
TOTAL		71,572	69,561	53,594

6.3 Field monitoring

Frequent monitoring visits were made by staff of FtF INVC BA, a team from African Rising, and officials from the USAID Mission in Malawi, to all the EPAs implementing INVC BA.

6.4 Rainfall

Generally, the 2016/7 agriculture season has been excellent with rainfall above normal in all FtF Zol. The season started in November with first planting rains falling in this month in all the areas. Farmers started planting in or around mid-November and continued to December. In some areas heavy rains affected crops which were washed away. This was especially so in Mchinji, Lilongwe, and Ntcheu districts.

6.5 Crop performance and stand

- a) **Soybean crop:** The germination rate for soybean was very good in all of the early planted crop (before 15 December). The late planted crop was affected by pests (birds and caterpillars) and in some parts crop development was affected by mid-season dry spells or heavy rains.



Photo 5: INVC BA staff verifying ridge spacing measurements in Joyce Mary's soybean field at Chileka EPA in Lilongwe. Photo credit: Genschers Chisanga/IITA.



Photo 6: Proud Joyce Mary in her soybean field in Chileka EPA in Lilongwe. Photo credit: Genschers Chisanga/IITA.

- b) **Groundnut:** The groundnut seeds distributed to farmers were generally of very poor quality with an average germination rate in farmers' fields ranging from 41 to 66%, against a minimum standard of 75%. The poor germination affected crop establishment and yield due to low plant population, despite the favorable weather conditions in the 2016/2017 agricultural season. Although germination tests results in the lab recorded germination rates of more than 75%, field germination rates were far below the expected standard. Further tests on the seeds by SSU revealed low seed vigor was the reason for the poor germination in the field. However, the crop was good, and it is apparent that CG7 has a very high compensatory yield tendency (Fig. 9), because the yield realized for a crop which had a very low plant density was beyond expectation (Table 14 and Photo 5).

Table 14. Field germination of groundnut seeds.

EPA	Sampled planted stations	Stations with germinated seeds	%
Kanyama	10,620	4,101	39
Chafumbwa	8,109	4,999	62
Chiosya	2,390	1,002	42
Total	21,119	10,102	48



Photo 7: Two groundnut plots planted side by side. The plot below is planted with seeds from INVC BA seed suppliers and the upper plot is planted with farmer's farm-saved seeds. Notice the gaps in the plot below revealing showing poor establishment while the upper plot is well established. Photo credit: Genschers Chisanga/IITA.

- c) *Pigeon pea*: Pigeon pea was grown only by those who received seeds through Seed Fairs in the three districts of Balaka, Machinga, and Mangochi in the Southern Region of Malawi. In Mangochi the crop was also grown on demonstration plots to showcase the different varieties being promoted by the research stations. Field assessment recorded a germination rate of 81.5% on average. Owing to problems of land in the areas where the crop is normally grown, pigeon pea is grown as a hedge crop with other crops (picture below).



Photo 7: Hedgerow cropping of pigeon pea in groundnut in double-up legume system in Suzen Paulo's field in Rivirivi EPA in Balaka. Photo credit: Genschers Chisanga/IITA.

6. 6 Incidence of pests and diseases

Soybean: Monitoring visits revealed the incidence of larvae (fall army worms, leaf rollers, and white grubs) attacking soybean leaves, stems, and roots at the vegetative stage. This was prominent in Mitundu, Malingunde, and Chileka EPAs in Lilongwe District and Linthipe EPA in Dedza District. District Agriculture Offices and partner organizations with the affected farmers had to contain the pests using chemical control. Also due to a dry spell in some areas in February and March there were incidents with termites though these were not serious enough to cause economic damage.

Groundnut: No pests of economic importance were recorded. However due to dry spells in some areas slight damage by termites was reported. In some fields white grubs attacking the tap root caused the wilting and eventually drying up of groundnut at a late stage of vegetative growth. One field in Domasi in Zomba district was found with an undiagnosed disease. The disease started as a small yellowing patch of plants but later spread to the rest of the field, and the affected plants died off, leaving gaps in the affected part of the field. The disease is yet to be identified by the plant pathologist. The photo below shows a field affected by the disease.



Photo 8: A groundnut crop attacked by an unidentified disease in Gladys Viara's groundnut field in Domasi EPA in Machinga. Photo credit: Genschers Chisanga/IITA.

6.7 Uptake of technologies

Double rows, flat topped ridges, and use of inoculants are some of the technologies that were easily adopted by beneficiaries of INVC BA. In a Spot Survey of 1,113 respondents, about 1,002 farmers (90%) appreciated the importance of these technologies in increasing productivity. Planting of one seed/ station in groundnut production is really not a new technology but a standard practice. However, planting one seed/station at 5 cm between stations for soybean is a technology that beneficiaries struggled to practice. Less than 23% of the sampled beneficiaries in the Spot Survey planted the single seed/station of soybean at the recommended spacing of 5 cm apart in twin rows. Farmers reported that it was difficult to plant a single seed/station at 5 cm apart.

Use of casual hired labor to plant without pre-calibrated tools to guide the planter to adhere to recommendations of single seed/station and 5 cm spacing made it difficult to achieve the recommendations. Farmers cited the small size of soybean seeds as the major challenge to consistently planting one seed/station. Accessibility to simple pre-calibrated planting tools would make it easier for farmer to apply the recommended seed rate and spacing for planting soybean. Fig. 6 below presents rate of uptake of promoted technologies for increasing groundnut and soybean productivity during the 2016/7 season by farmers in the INVC BA Zol.

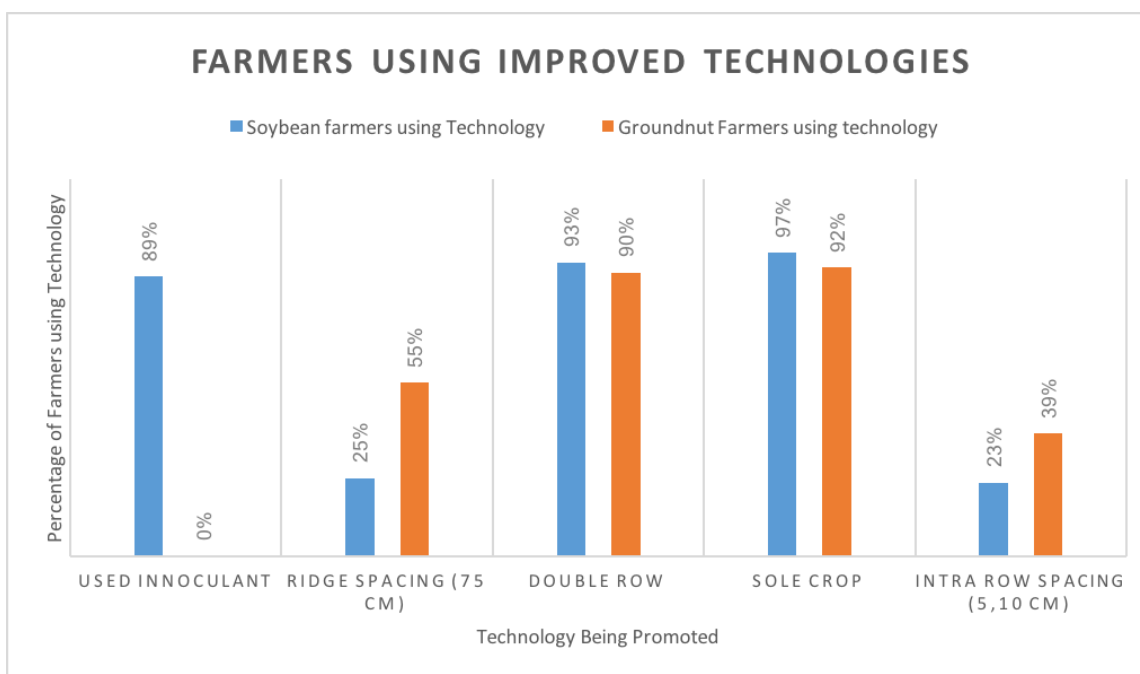


Figure 6. Farmers using improved technologies.

6.8 Trainings

Building capacity of farmers in technologies promoted by INVC BA was one of the activities implemented in the year under review. A total of 2,410 Lead farmers (1,381 males and 1,029 females) were trained in technologies being promoted by INVC BA in order for them to share the knowledge with fellow farmers in their farmer groups that received seed loans. The training topics included pre-planting, agronomic practices, such as ridge alignment, and spacing, seed rate, soil and water conservation, planting patterns, weeding, pest and disease management, harvest methods, and postharvest handling such as threshing, grading, storage, and aggregation. Different approaches to training were employed to deliver messages to farmers, i.e., training frontline Government and partners' staff by the MISST consortium, who trained Lead farmers and the Lead farmers in turn trained follower farmers. The second approach was Lead farmers trained directly by DAES staff; the third approach was the direct training of all member farmers in a farmer organization. Field days were also used as training venues, as farmers came to observe and appreciate results and performance of the various technologies promoted by INVC BA. Table 15 below presents the number of trainings and number of farmers that had undergone the training under INVC BA in all the EPA under seed loan component. No formal training was done for Seed Fair beneficiaries.

Table 15. Total number of farmers trained by partners.

Partner	Target	Male	Female	Total
ACE	All farmers	885	562	1,447
CADECOM	Lead farmers	131	101	232
FUM	Lead farmers	401	295	695
We Effect	Leaf farmers	64	68	132
	Total	1,381	1,029	2,410

6.9 Showcasing of improved technologies (field days)

Mounting of demonstration plots was done jointly by MISST, Implementing partners, and DAES. The target number of demonstrations in participating EPA was 40 for both soybean and groundnut. DAES staff was responsible for identifying the plots and recording the size of land and GPS coordinates. The land and field management of the demonstration plots was a responsibility of the farmer owning the land while MISST provided the required inputs including seeds and inoculants. MISST technicians demonstrated to plot owners through trainings the practices required to be employed on the pieces of land, and monitored planting to insure compliance with the protocols. The demonstration plots were located in strategic places to ensure ease of accessibility for the public. Sites and number of field days are presented in Figure 7 below.

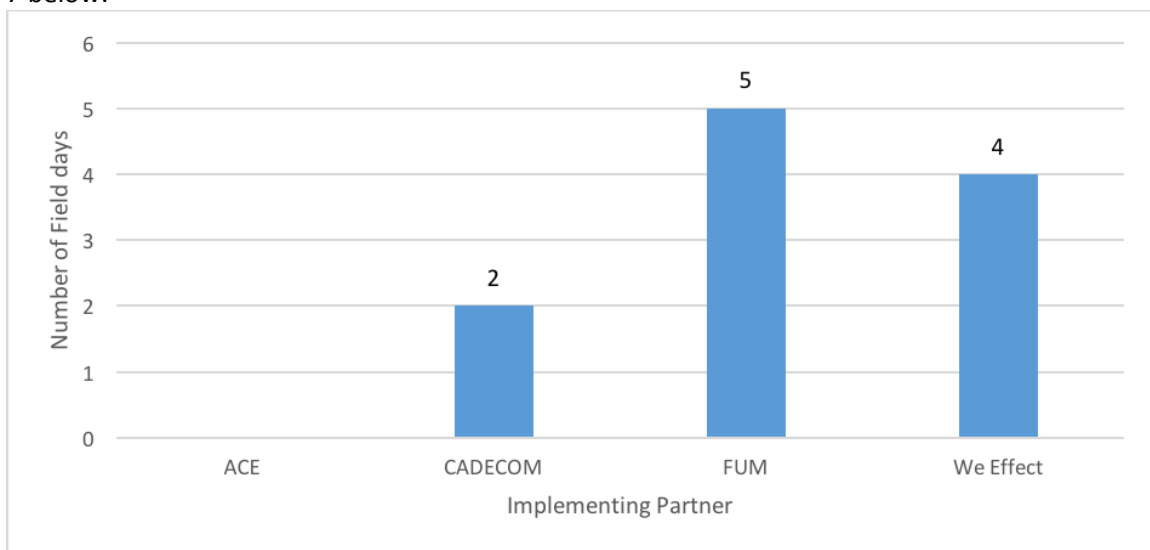


Figure 7. Number of field days by IP.

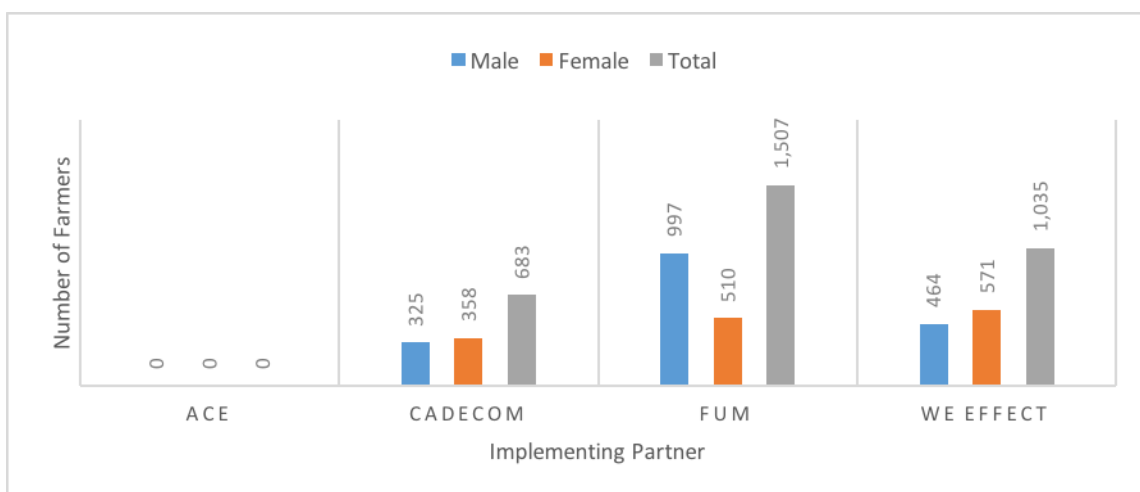


Figure 8. Number of farmers that attended field days by IP.

6.10 Crop production

A total of 4,553 ha was covered by seed loans (3,121 ha of soybean and 1,432 ha of groundnut). Spot Surveys revealed that the average yield for soybean was 1,344 kg/ha and 1,000 kg/ha for groundnut. This was way up against the 2016/2017 national average yield of 964 kg/ha for soybean and at par with the national average of 1,000 kg/ha for groundnut. The poor quality of groundnut seeds from the seed suppliers affected production. Assessment by the SSU found that the average field germination for groundnut was 55%. In terms of production, approximately 4,195 t of soybean and 1,380 t of groundnut have been realized through the initiative (Table 16; area under production, yield and total production).

Table 16. Total area planted to seeds from seed loan scheme (ha).

Commodity	Area (ha)	Production (Kg)	Yield (Kg/ha)
Soybean	3,121	4,194,624	1,344
Groundnut	1,432	1,379,904	964

Soybean

Comparing soybean varieties issued to beneficiaries, Makwacha yielded more (1,468kg/ha on average) than Tikolole (1,105 kg/ha). This was expected because Makwacha is late maturing unlike Tikolore which is of medium maturity. Because the rainfall was full season this year, Makwacha performed well as there was enough soil moisture throughout the growing season for physiological processes in late maturing varieties. The potential yields for the two varieties are 3,000 kg/ha for Makwacha and 2,500 kg/ha for Tikolole.

Comparing different implementing partners, beneficiaries under FUM on average had higher yield as compared with the other implementing partners (ACE, CADECOM). The three implementing partners shared the same seeds from the same seed company. Figures 9 and 10 gave the graphic representation of the outcome for soybean.

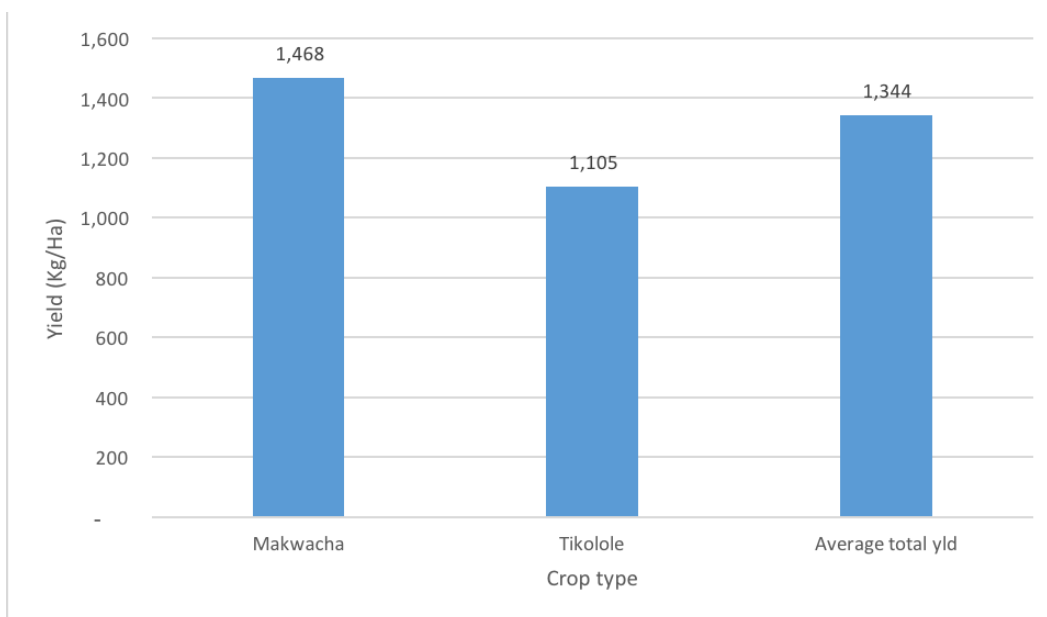


Figure 9. Yield of Makwacha and Tikolore against average yield.

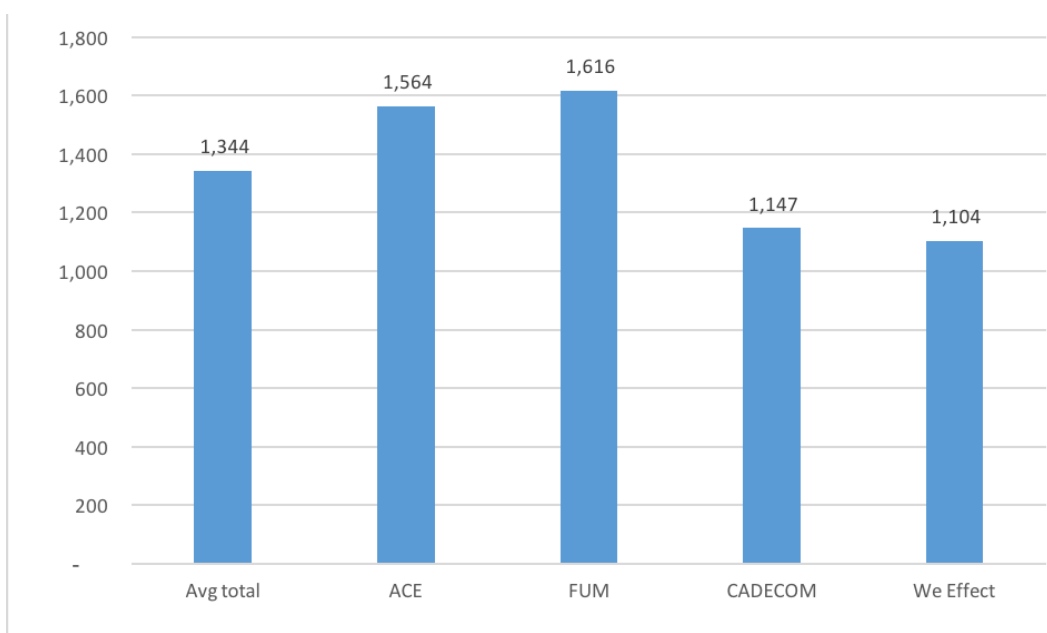


Figure 10. Yield per implementing partner.

Groundnut

As indicated earlier, groundnut germination was poor which resulted in low plant density with the total average yield of 964 kg/ha. When the Chithumba model and seed loan model are compared, Chithumba, despite the low germination yielded 1,176 kg/ha, higher than the other model (874 kg/ha). There were also significant differences in productivity between the two EPAs (Kanyama and Chafumbwa in Dedza) under CADECOM. The average for Chafumbwa was higher 1,427 kg/ha against 840 kg/ha for Kanyama. (See Figs 18 and 19).

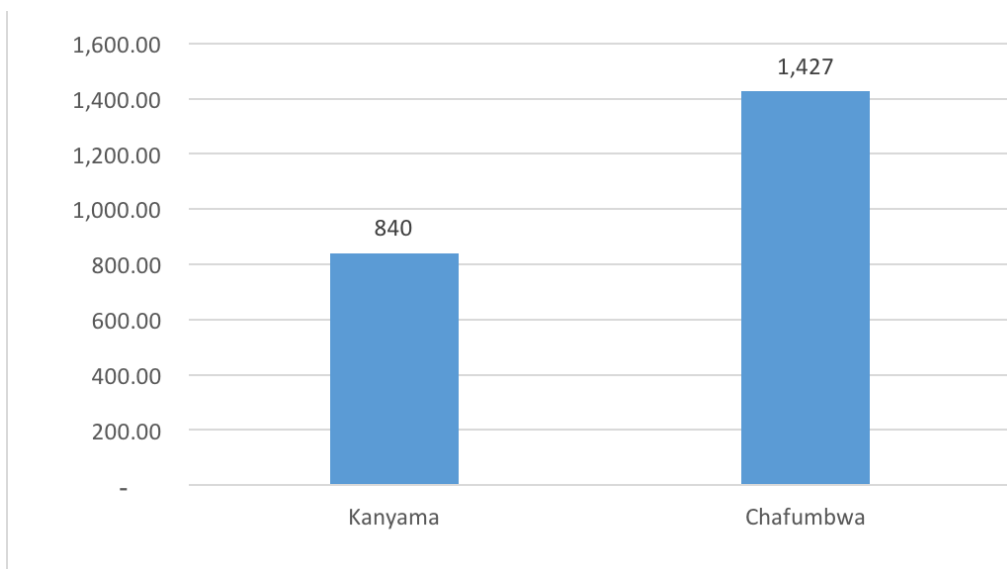


Figure 11. Average yield for Kanyama and Chafumbwa.

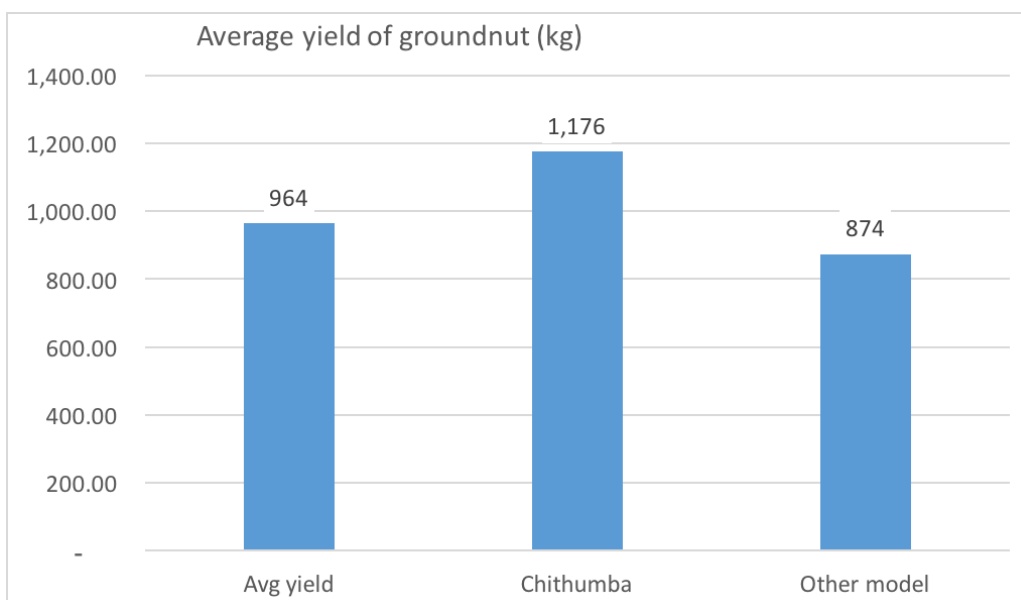


Figure 12. Average yield achieved by beneficiaries in the seed loan model for groundnut.

6.11 Challenges

- Weak coordination between implementing partners (IPs) and DAES. The coordination between IPs and DAES was weak due to budgetary constraints. Demands by DAES staff for allowances every time their technical support was required made it difficult for IPs to engage them due to limitations in budget. In 2017/2018 season, a provision for minimal allowances for DAES in return for their involvement will be considered in the fund allocation to IPs.
- Budgetary constraint on the part of IPs. Some important components such as strengthening farmer groups and trainings for postharvest handling were not in the budget. INVC sought the collaboration of Agricultural Diversification Activity to support the activity of common interest.
- Crop prioritization by farmers. Farmers tend to give priority to maize, the staple food, while legumes take a second priority. Prime land is allocated to maize and is planted with first planting rains, while legumes are allocated to the not so fertile land or, where land is limited, farmers would interplant the legume with maize or other crops. This practice disadvantages legume productivity.
- The results of the research done by Africa RISING through Michigan State University should be scaled up and extension personnel trained in the validated technologies from mother and baby trials conducted by Africa RISING.
- Constraints of landholding. Especially in the districts of Balaka, Machinga, and Mangochi where beneficiaries accessed 11 kg of seeds (4 kg groundnut, 4 kg soybean and 3 kg soybean) through INVC BA vouchers through CRS. Most of the beneficiaries could not plant all the seeds owing to limitation of land size and ended up by sharing them with family and friends.
- Use of lead farmers vs direct training by IPs. The experience in the 2016/2017 season has shown that the targeting of Lead farmers for training in technologies which will improve productivity was not as effective as expected. Most trained Lead farmers never shared the information with follower farmers. This trend had some bearing on the low uptake of some of the technologies being promoted because the messages did not trickle down or if they did they did trickle down the messages that were not accurate. This was particularly so in areas where IPs' field staff failed to follow-up on the trained Lead farmers' activities, resulting in poor results in technology uptake.
- Some who had more land but had not received enough seeds preferred to plant the seeds at a lower rate just to cover a larger area. This is an inefficient way of producing legumes and efforts have to be made next season to demonstrate to such farmers more efficient production techniques that will not only increase productivity but also free land for other enterprises.
- Seed quality. While the quality of soybean supplied to the INVC BA by seed suppliers germinated very well in farmers' fields (>75%), on the contrary the quality of groundnut seeds supplied by two suppliers, was very poor, averaging 41% and 60%, respectively, resulting in low plant density. This is a setback to the objectives and goal of INVC BA. In 2017/2018, seed supply will be sourced by farmer groups themselves, and the INVC BA through IPs will provide the groups with logistical support.
- Closed option for Seed Fair beneficiaries. Beneficiaries were not given an opportunity to choose and get seeds of their choice. They were forced to get 11 kg of seeds in small packs of 4 kg each of soybean and groundnut and 3 kg of pigeon pea regardless of their preference for any crop. For any future similar activity, it is worth exploring the

possibility of farmers being given some choice of what seeds are preferred, provided the sealing quantity is adhered to. This will encourage those farmers to get what the seeds they really need, even though it may also lead to a scramble for some popular types resulting in some farmers failing to get their preference.

7.0 Monitoring and Evaluation

As an FtF Initiative, the INVC BA is focusing on monitoring and evaluation, increased accountability, and a commitment to data-driven, evidence-based programming. In partnership with IPs, the M&E team focused on capturing and scaling up existing models and practices and adapted the M&E methodology of the INVC Project which was phased out in October 2016.

Data were derived through Spot Surveys with structured questionnaires on the adoption of technologies promoted on agronomic practices and value chains, and through field observations, partner-collected data quality assessment, and compilation of results.

7.1 Project output indicator results

The output indicator results are categorized in the two INVC BA components, i.e., Advancing Value Chain and Market Competitiveness and Promoting Agricultural Productivity.

7.1.1 Component 1 - advancing value chain competitiveness

i. Number of farmer clubs registered for aggregation

The target of registering 15,000 individual farmers for grain aggregation was over-achieved as 18,904 farmers were registered representing 126% achievement. To obtain this result a number of briefings, trainings, and publications through print and electronic media was carried out and although there is some disparity in the target *vis-a-vis* actual numbers achieved of meetings and trainings, the activities were largely achieved (Table 17).

The Activity planned 20 awareness meetings but 18 meetings were held (90% achievement). Twenty-four (24) weekly advertisements were to be placed in print media, publicizing market price trends. In total, 29 adverts were placed in print media against the targeted 24 adverts (121%). This was because the articles were being released weekly. There were 29 weeks before the close of the reporting period but publication continued for the rest of the period. Of 5 planned auction sales, 3 have been conducted during the year under review, representing 60%, 1 being OVO and 2 BVO. Failure to reach the targeted number is due to the fact that the reporting period ended 2 months into the soybean marketing season and 1 month into the groundnut marketing season, and more auctions will take place after the reporting periods.

Although 18,904 farmers were registered for aggregation only 571 t (16%) of the expected 3,500 t was deposited in the ACE warehouse at the time this report was compiled. The low level of aggregation is attributed to logistical challenges that farmers face especially in transport since most of the ACE certified warehouses are a long distance from farmers' locations and it would be expensive for farmers to transport the aggregated volumes there, especially if a market for the grain had not been identified. Farmers also prefer to aggregate their grain in strategic warehouses closer to their locations to avoid transportation and the warehousing costs under the certified ACE warehouses. Farmers' preference is for buyers who provide transport costs from aggregation points nearer to points of production.

7.1.2 Component 2 - improving productivity

A total of 15,051 beneficiary farmers (101% of target) practiced improved agronomic practices against the target of 15,000 in Year 1 of INVC BA under the seed loan scheme and 17,995 individual farmers (99.9% of target) benefited under the Seed Fair component against a target of 18,000 (Table 17). The Activity distributed 231 t of soybean (210 t of Makwacha and 21 t of Tikolore variety) and 70 t of groundnut (CG7) for the seed loan scheme and 200.3 t for the Seed Fair scheme consisting of 70.3 t of groundnut seeds, 58.9 t of soybean seeds and 71 t of pigeon pea seeds.

There was over-achievement in the show casing of improved technologies using 191 mother and baby demonstration plots (318% of target) and 22 field days (157% of target). On the other hand INVC BA fell short of meeting the target number of mother demonstration plots (178 is 89% of target) because in two EPAs, Mitundu and Phirilanjuzi, the approach taken was that farmers were trained directly, illustrating the technologies in promotion to all beneficiary farmers rather than training Lead farmers only. Consequently, fewer demonstration plots were mounted in these EPAs.

Table 17. Output indicators of achievements for year 1 (2016-17) of INVC BA implementation.

Indicator achievements: Advancing value chains and market competitiveness			
Indicator	Target	Achievement	% Achievement
# of farmer clubs registered for aggregation			
# of individual farmers in commodity aggregation	15,000	18,904	126
# of awareness meetings on marketing & aggregation	20	18	90
# of trainings conducted on marketing & aggregation	16	8	50
# of radio programs broadcast	32	32	100
# of sets of weekly information disseminated	32	32	100
# of newspaper articles	24	29	121
# of auctions held (OVO/BVO)	5	3	60
# of models for warehouse sustainability operations identified	1	1	100
# of trainings operated on grain handling	1	1	100
Volume of grain in tonnes (t) deposited at warehouses	3,500	571	16

Indicator achievements: Promoting agricultural productivity			
Indicator	Target	Achievement	% Achievement
# of farmer clubs working in agronomic practices			
# of farmers working in agronomic practices	15,000	15,051	100
Volume of distributed soybean seed in tonnes (t)	215	182	85
Volume of distributed G/nut seeds in tonnes (t)	145	137	94

Amount of pigeon pea seeds distributed (t)	75	70	93
# of trainings held for Training of Trainers	12	9	75
# of trainings held of Lead farmers	16	16	100
# of Seed Fairs held	36	36	100
# of beneficiaries	18,000	17,995	99
# of partner staff trained on Seed Fair methodology	10	10	100
# of Lead farmers providing expert advice	720	50	7
# of mother demonstration plots	200	178	89
# of baby demonstration plots	60	191	318
# of field days conducted	14	22	157

7.3 Outcome indicator results

The INVC BA aims at increasing yields of legumes and associated crops by at least 50% which in turn will result in increases in incomes and assets of smallholder farmers' households. These are the two major outcomes: 1) increased household incomes and assets for smallholder farmers and 2) increased productivity.

7.3.1. Outcome 1 - increased household incomes and assets for smallholder farmers

The INVC BA sought to increase incomes and assets for smallholder farmers through a) increasing access to market information and financial services; b) increasing commercial linkages in the soybean and groundnut value chains, including the vertical coordination of smallholders and small and medium enterprises (SMEs); and c) increasing marketing opportunities for both crops through improved end-market competitiveness and increased transparency.

The average price obtained from farmers' collective marketing, pegged at MK 170/kg, is higher than the average price of MK140/kg offered by vendors to farmers selling their grain individually in most areas in the EPAs. The collective marketing and aggregation attracted higher value markets, and farmers benefited from the linkages promoted by the INVC BA. However, it should be pointed out that due to very favorable rainfall in the 2016-17 growing season, there is an oversupply of soybean on a market with limited buyers. The result is depressed prices compared to 2015-16 season during which soybean fetched on average about MK200/kg. This has resulted in reduced income for farmers. Opening up of barriers to export crops would stabilize commodity prices and, in that way, farmers would have the incentive to produce more in subsequent seasons.

Farmers' experience in the 2016-17 season may result in reduced production in 2017-18 season as farmers may cut back production plans owing to the low prices experienced, or may not even have earned adequate income to expand production even if it was planned. Groundnut, on the other hand, is attracting better prices on the market than soybean because there is higher market demand and supply is not as high as that of soybean. By the end of June it was fetching an average of MK300/kg. The higher price offers will contribute to increased incomes for these farmers that will eventually lead to them having more assets compared with other farmers; this is an incentive for them to produce more in the subsequent season.

7.3.2. Output Indicator 2- increase yields of legume and associated crops by at least 50%

The INVC BA planned to increase yields of legumes (and associated crops) by at least 50% by a) enhancing soil fertility, water management, and conservation practices by male and female smallholder farmers, through good agricultural practices; and b) enhancing the use of technologies through the provision of focused agricultural extension and advisory services.

The goal is to increase yield of the baseline year (INVC yield 2015/16) by at least 50%. However, it is appreciated that 2015-16 was a drought year which affected the productivity of soybean and groundnut in most areas, so that yields for the 2 years cannot be fairly compared. The report has attempted also to present an intra-year comparison with the national average productivity from MoAIWD estimates for the 2016/17 season to have a fair measurement of INVC BA's effort to increase productivity. Figure 13 below shows a comparison of productivity for both groundnut and soybean in 2016-17 against the baseline yield of 2015-16 season (1 t/ha for groundnut and the 2016-2017 national productivity estimate, which is 1.34 t/ha for soybean, against 0.58 t/ha for groundnut and 0.67 t/ha for soybean in the 2015-16 season, and 1 t/ha each for groundnut and soybean.

Productivity for groundnut would have been much higher if the germination was up to standard. Unfortunately, all the seeds supplied to the Activity had a displayed low germination rate in farmers' fields (average of 51% and 43% respectively for seed supplied by two independent suppliers). Seed Services Unit determined that failure of the groundnut seeds to germinate successfully in farmers' fields was due to low seed vigor, where the shoot had to overcome the resistance of the soil cap. This was in contrast to observations in the laboratory where the germination tests showed germination of at least 75% was up to standard.

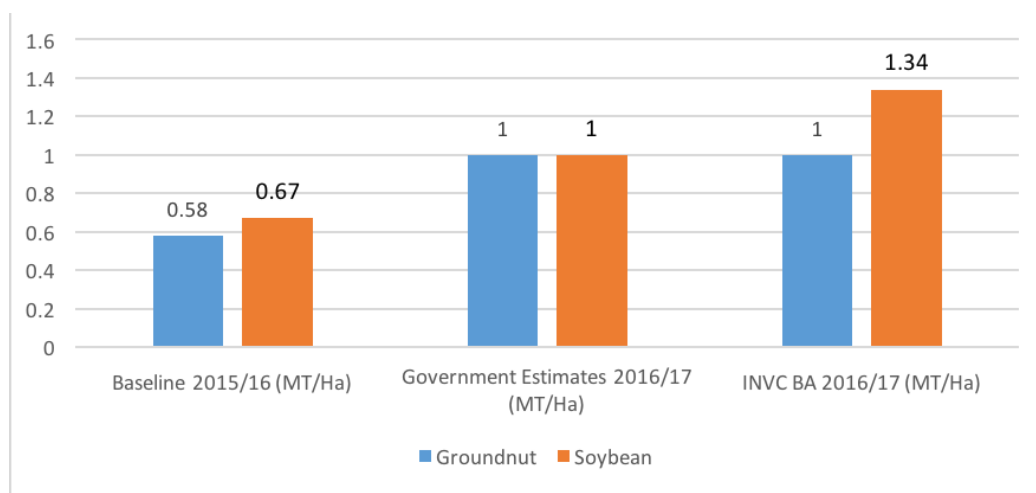


Figure 13. Comparison of yield estimates.

7.3.3 Increased yields for legume value chains

Outcome Indicator 2 is to increase legume yields (and associated crops) by at least 50%. The recorded average yield increases over the 2015-2016 average production is 72% for groundnut and 94% for soybean. However, when productivity levels of INVC BA beneficiaries to the national average for 2016-17 season, the yield of soybeans was 34%, but it was at par for groundnuts (Table 18).

Table 18. Percentage grain yield change.

Comparing Baseline yield (INVC 2015/16) against INVC BA 2016/17 yield				
<i>Value chain</i>	<i>Baseline INVC 2015/16 (t/ha)</i>	<i>INVC BA yield (t/ha)</i>	<i>Difference (INVC BA yield-base yield)</i>	<i>Percentage change</i>
Groundnut	0.58	1	0.42	72
Soybean	0.67	1.34	0.63	94
Comparing Government estimates (2016/17) against INVC BA 2016/17 yield				
<i>Value chain</i>	<i>Government estimates 2016/17 (t/ha)</i>	<i>INVC BA yield (t/ha)</i>	<i>Difference (INVC yield-MoAIWD estimates)</i>	<i>Percentage change</i>
Groundnut	1	1	0	0
Soybean	1	1.34	0.34	34

7.4 Alignment with Feed the Future indicators

INVC BA is contributing to the higher level Feed the Future indicators through the following indicator results:

7.4.1 Advancing value chains and competitive markets

- i. Value of agricultural loans- In 2016-17 season, SMEs received agricultural loans, worth US\$ 514,199.09 in the form of seeds and inoculants.
- ii. Number of SMEs receiving agri-business development services - 31 SMEs benefited from business development services supported by the INVC BA. This was mainly for the supply of certified seeds and other agricultural inputs and capital for buying legume grain (Table 19).

7.4.2 Promoting agricultural productivity

- i. Farmers from 11 producer organizations benefited from improved technologies as a result of US Government assistance. In these 11 organizations, 33,069 individual farmers applied improved technologies on about 13, 179 ha, of which 5,553 ha was under 15,034 farmers who received seed loans and 7,644 ha were under 17,955 farmers who received seeds obtained through Seed Fairs, all supported with funds from the US Government supported INVC BA (Table 19).

Table 19. Alignment of BA output indicators with Feed the Future indicator results in year 1.

Feed the future Indicator Results			
Indicator	Target	Achievement	% Achievement
Component 1			
Value of agricultural and rural loans		\$842,524.37	\$514,199.09 (for ACE, \$328.325.28 under seed loans)
Number of MSMEs including farmers' organizations, receiving business development services from US Government- assisted sources.		31	
Component 2			
Number of private enterprises, producer organizations, water users associations groups, trade and business associations and CBOs that applied improved technologies or management practices as a result of US Government assistance		11	
Number of farmers and others who have applied improved technologies or management practices as a result of US Government assistance		33,069	
Number of individuals who have received US Government supported short-term agricultural sector productivity or food security training		17,995	
Number of ha under improved technologies or management practices as a result of US Government assistance		13,179 (5,553 ha under seed loans & 7,644 ha Seed Fairs)	
Yield of groundnut (t/ha)		1 t/ha	
Yield of soybean (t/ha)		1.344 t/ha	

Results of spot surveys show that all participating farmers adopted at least one project from recommended best-bet technologies (Fig. 6).

7.5 Data collection on agronomic practices, postharvest handling and gross margin

A questionnaire was developed in collaboration with Africa RISING to collect data on agronomic practices, postharvest handling, and gross margin for analysis. The main objective was to capture data on farmers' response to the best-bet agronomic practices being promoted by INVC BA through its IPs. The project has adopted a M&E system that involves monitoring project inputs, activities, outputs, and outcomes. The data collected would contribute to the FtF performance indicator outputs 1, 2, 4, and 6. The data will also contribute to the INVC database which will be available for the internal and external evaluations of INVC.

The data collected was divided into 3 sections, general information, crop production and harvest, and post-harvest handling as well as gross margin. These data were collected concurrently with outlined farm activities.

The data were collected in two stages. Stage 1 focused on assessing farmers' uptake of agronomic practices; stage 2 focused on the uptake of recommendations for harvesting, postharvest handling, and collection of data for gross economic (gross margin) analysis. Data were collected from subsets of the total number of farmers growing soybean (8%, n=850) against a target of 827 respondents (7.4%). The total number of beneficiaries growing soybean in 2016-17 season was 11,179; the total number of beneficiaries who grew groundnut was 3,857. On the other hand in round two, a sample size for the subset for collection of data on harvesting and postharvest handling was drawn and reduced to only 634 (5.7%) for soybean farmers and 285 (7%) for groundnut farmers.

The methodology included interviewing respondents, validating measurements of farmers' plot size, adherence to recommended plant densities (intra-row and inter-row plant spacing, twin-row planting and spacing), and recording the GPS of plots of respondents, conducting physical checks on the uptake of the promoted technologies in the respondents' plots, conducting crop cuts to estimate productivity, and estimating fresh and dry weights of sampled harvest.

During planning, it was estimated that an enumerator would visit 20 respondents' plots, implying a maximum of 40 fields/day but 10 to 15 fields/day was practical due to distances between sampled respondents and the terrain in some areas which slowed the process as enumerators would walk some kilometers because plots were out of reach for a motor vehicle. This is the reason why the survey could not be concluded before the close of the reporting year, hence the slightly lower achievement in targets than in round one. However, data will continue to be collected in those areas where it has not been done, such as in Linthipe EPA. Table 20 below provides a breakdown of number of respondents reached in 11 EPAs in 5 districts.

Table 20. Respondents reached versus targeted for Spot Survey for agronomic technology, postharvest uptake, and gross margin data for soybean in Phase 1.

District	EPA	IP	Total # of Beneficiaries	Target Beneficiary Respondents (Soybean)	No. of respondents reached (Soybean)	% of Target
Mangochi	Ntiya	WE EFFECT	1064	79	79	100
	Katuli	WE EFFECT	1200	89	87	98
Ntcheu	Njolomole	CADECOM	1000	74	92	124
	Bilila	CADECOM	650	48	53	110
Dedza	Linthipe	FUM	1474	109	115	106
Mchinji	Mikundi	FUM	950	70	63	90
	Chioshya	FUM	950	70	64	91
Lilongwe	Chileka	FUM	2433	180	185	103
	Chitsime	FUM	351	26	25	96
	Mitundu	ACE	581	43	47	109
	Phirilanjuzi	ACE	526	39	40	103
	Total		11,179	827	850	103

Table 21. Respondents reached against targeted number Spot Survey for CG7 groundnut Phase one.

District	EPA	IP	Total # of Beneficiaries	Target Beneficiaries	Data Collected	% of Target
Mchinji	Mikundi	ACE	779	58	45	78
	Chioshya	ACE	578	43	39	91
Dedza	Kanyama	CADECOM	1200	89	116	130
	Chafumbwa	CADECOM	1300	96	128	133
		Total	3857	286	328	115

Table 22. Number of respondents reached for spot survey against Target for Phase II.

Groundnuts						
District	EPA	Implementing Partner	Total # of Beneficiaries	Sample size Targeted	Sample size Collected	% of Target
Mchinji	Mikundi	ACE	779	58	34	59
	Chiosya	ACE	578	43	44	102
Dedza	Chafumbwa	CADECOM	1300	96	109	114
	kanyama	CADECOM	1200	89	78	88
		Total	3857	286	265	93

Soybean						
Lilongwe	Chitsime	FUM	351	26	23	88
	Chileka	FUM	2433	180	95	53
	Mitundu	ACE	581	43	39	91
	Phirilanjuzi	ACE	526	39	49	126
Mchinji	Chiosya	FUM	950	70	72	103
	Mikundi	FUM	950	70	71	101
Dedza	Linthipe	FUM	1474	109	-	-
Ntcheu	Njolomole	CADECOM	1000	74	68	92
	Bilila	CADECOM	650	48	54	113
Mangochi	Katuli	WE EFFECT	1200	89	83	93
	Ntiya	WE EFFECT	1064	79	80	101
		Total	11,179	827	634	77

Table 23. Summary of number of respondents reached for spot surveys for phase I and II.

Phase I			
	Total # of beneficiaries	Sampled population	Reached population
Soybean	11179	827	850
Groundnut	3857	286	328
Phase II			
Soybean	11179	827	634
Groundnut	3857	286	265

7.6 Data quality assessment exercise

The M&E team designed some of the tools for data quality assessment and adopted some QA tools from USAID for conducting data quality assessment in all IP organizations, to ensure the quality of IITA INVC BA data being collected. The team is aware of the strengths and weaknesses of the data collected as determined by applying 5 standards for data quality i.e., consistency, accuracy, precision, and extent to which the integrity of the data can be trusted to influence management decisions.

The data quality assessment exercise was conducted to all 5 partner organizations (WE effect, CADECOM, ACE, FUM, and CRS). The exercise contributed to the input in the review and updating of the output indicator matrix for Year 1.

The data quality assessment exercise revealed no significant disparities between the reported data and assessed data source at farmers union; while at CRS, the primary data source documents are kept in Blantyre, and hence the data source documents could not be easily accessed for this exercise. At FUM, there is an established monitoring system which is managed effectively. Some of the strengths recorded included a clear data flow chart, well labeled databases, clearly written guidelines on data collection, analysis and manipulation as reference M&E protocol, lockable filing cabinets for keeping the data, frequent and consistent reporting. One of the weaknesses observed, however, was that there was no dedicated M&E member of staff fully responsible for the system but the FUM Program Manager was doubling the roles.

The general conclusion from the exercise is that there are well defined monitoring and reporting systems in all the partner organizations. Clear strengths in the M&E systems include clear data flow charts, well labeled databases, and frequent and consistent reporting. The areas of improvement recommended for partners were to have written guidelines on the M&E protocol and share these with staff for reference and for routine validation and verification of data, at least quarterly.

7.7 Challenges

- The lack of dedicated M&E personnel in some IP organizations fails to meet some the M&E requirements. In some cases, personnel are working in multiple roles.
- Due to late placement of an M&E specialist, some data capturing tools were shared late, and that created a gap in the timely capturing of data.
- Some tend to delay data entry into the electronic data base despite templates and guidance. The M&E team will continue reminding partners to update the electronic database consistently.

7.8 Lessons learned

- As a data intensive initiative FtF projects require personnel with the capacity to set up strong M&E systems from project inception to ensure data quality and avoid backlogs and gaps.
- Capturing good and trustworthy data requires good investment in collection, synthesis, analysis, and interpretation.
- Partners need to receive training early on gathering indicator data with the appropriate disaggregation. This guidance was given to partners after the DQA and now all involved understand the importance of data disaggregation.
- Gathering relevant data is everyone's responsibility. It cannot be left to members of the M&E team alone.
- Indicator definitions need to be clear and specific. Partners understood different indicators and methodologies differently. CRS was dealing with individual farmers when others were dealing with farmer groups. Farmer groups meant cooperatives to some; to others it meant a group of 20 farmers from the same village.

8.0 Success story

A soybean farmer doubles yield by following improved technologies

Nelson Mthawanji is a soybean farmer aged 61 years of age, married with 8 children from Manyenje Village, group village Mandele in Traditional Authority Masasa in Ntcheu District. Some of the children have married and left the house; currently he is staying with 3 children in his house.



Photo 9: Mr Nelson Mthawanji with family at his house. Photo credit: Pelias Kabuli/IITA.

He started growing soybean a few years ago using unimproved cultivars and traditional cultivation methods, on 0.5 ha of land. The yields he got were very low and did not bring much income.

He joined INVC Project in 2015. The farmers were grouped in clubs of 10 farmers, and Nelson was in one of the clubs. Through his club they were taken through a number of trainings and demonstrations on the use of improved technologies for growing soybean such as planting in double rows per ridge, use of inoculant and how to apply it, and use of improved seeds. He was given 10 kg of Makwacha variety to plant, at the recommended ridge spacing of 75 cm, intra row spacing of 5 cm, with one seed/ planting station. He was also trained in correct harvesting methods using a sickle rather than pulling the whole plant from the soil and the recommended threshing techniques on mats so the grain remains clean.

In 2014/15 season when he grew local seeds using traditional methods on a 0.5 ha, he harvested 486 kg (1.2 t/ha) of soybean grain. In the following 2015/16 season using improved technologies his production increased to 972 kg (1.6 t/ha) but he also increased the area, exactly doubling the production from the previous season. In 2016/17 season, he followed all the technologies he learnt from the project and his harvest tripled from the first year 2014/15 by harvesting 1,404 kg and yield doubled (2.34 t/ha). (in his statement during the interview commenting on his high yield this year he said, “ *kugwiritsa ntchito mbewu yamakono komanso kudzala mizela iwili kwa onjezera kuchuluka kwa kakolodwe chifukwa pamzera umodzi umakolola uku ndi uku kusiyana nkale mzere umodzi komanso mbeu yamakono inalimbeu ya mtengo wapatali*” (use of improved seeds and double rows have greatly contributed to the high yield as planting in double rows automatically doubles the harvest, unlike in the past where I only harvested from a single row on a ridge. Moreover, the improved varieties are of high quality).




Photo 10: Nelson poses for a photo in his storage room containing 28 50 kg bags (1,400 kg) of soybean he harvested in the 2016-17 season. Photo credit: Pelias Kabuli/IITA.

In his statement he said, “Alimi a soya amene sakutsatira ndondomeko ya za malimidwe atsopano nkofunikira apange chitsankho chifukwa phindu likumapezeka lochuluka akatsatira njira zamakono” (“soybean farmers who are still using traditional methods should make up their minds quickly, because they can reap rewards when they use the recommended modern technologies).

His plan is to build another house from the proceeds he will realize from selling the soybean this season.

9.0 Annexes

Annex 1. ACE farmer profile form and details



Date: _____

Location: _____

Contact Profiling Details


ACE Alerts Information

First Name	Last Name	Gender	Married	N. Kids	Crops Grown	Land in ha	Village
Organization (NGOs, etc.)	Farmer Association	Club					District
Commodities (Max. 2 from list)	Markets (Max. 6 from list)				Mobile Number		Signature
					Email		

First Name	Last Name	Gender	Married	N. Kids	Crops Grown	Land in ha	Village
Organization (NGOs, etc.)	Farmer Association	Club					District
Commodities (Max. 2 from list)	Markets (Max. 6 from list)				Mobile Number		Signature
					Email		

First Name	Last Name	Gender	Married	N. Kids	Crops Grown	Land in ha	Village
Organization (NGOs, etc.)	Farmer Association	Club					District
Commodities (Max. 2 from list)	Markets (Max. 6 from list)				Mobile Number		Signature
					Email		

Annex 2. ACE market information form



Contact Profiling Details

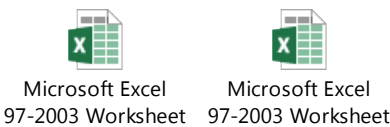
ACE Alerts Information

Contact Profiling Details

ACE Alerts Information

List of Markets	List of Commodities
Balaka	Beans Dolichos
Jenda	Beans Kholophethe
Lilongwe	Beans mix
Limbe	Beans Nanyati
Lizulu	Beans Napilira
Mangochi	Beans Red
Mchinji	Cowpea
Mitundu	Groundnut chalimbana shelled
Mkando	Groundnut chalimbana unshelled
Mzimba	Groundnut G7 shelled
Nkhamenya	Groundnut G7 unshelled
Madisi	Groundnut manipinta shelled
Mponela	Groundnut manipinta unshelled
Mvera	Maize Pop Corn Grain
Ntchisi	Maize white grain
Chimbiya	Pigeon pea
ACE Market Lilongwe	Rice local faya polished
Thondwe	Rice local faya unpolished
Phalombe	Rice local kilombero polished
Salima	Rice local kilombero unpolished
Nkhotakota	Rice local pusa polished
	Rice local pusa unpolished
	Sorghum
	Soya bean
	Sunflower

Annex 3. Beneficiary list by implementing partners: ACE - Makwacha Soybean and CG 7 groundnut



CADECOM: Groundnut



CRS: Seed Fair



**Farmers Union of Malawi
Soybean**



**WE effect
Soybean**



Annex 4. Data collection tools

