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The U.S. Government's Global Hunger & Food Security Initiative



AGRICULTURAL DEVELOPMENT AND VALUE CHAIN ENHANCEMENT PROJECT (ADVANCE)

FY 17 ANNUAL REPORT: OCTOBER 2016 -SEPTEMBER 2017



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ADVANCE FY17 ANNUAL REPORT

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AOR USAID: PEARL ACKAH

CHIEF OF PARTY: EMMANUEL DORMON

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ACRONYM LIST

ACDEP	Association of Church-Based Development Projects
ADVANCE	Agricultural Development and Value Chain Enhancement
AEA	Agriculture Extension Agent
AgNRM	Agriculture and Natural Resources Management Project
AMPLIFIES	Assisting Management in the Poultry and Layer Industries by Feed Improvement and Efficiency Strategies
APO	Agricultural Production Officer
ATT	Agricultural Technology Transfer
BDS	Business Development Services
CSA	Climate Smart Agriculture
CREMA	Community Resource Management Areas
DAIP	District Agricultural Investment Plan
DVCC	District Value Chain Committees
EPA	Environmental Protection Agency
F2F	Farmer-to-Farmer
FaaB	Farming as a Business
FBE	Farmer-Based Enterprise
FBO	Farmer-Based Organization
FI	Financial Institution
FTF	Feed the Future
FY	Fiscal Year
GAIP	Ghana Agricultural Insurance Pool
GAP	Good Agronomic Practice
GGC	Ghana Grain Council
GIS	Geographic Information System
GPP	Ghana Poultry Project
GPRTU	Ghana Private Road Transport Union
GPS	Global Positioning System
GRIB	Ghana Rice Inter-Professional Body
GSA	Ghana Standards Authority
I-3	Innovation and Investment Incentive Grants
ICT	Information and Communication Technology
IDRW	International Day of Rural Women
IITA	International Institute of Tropical Agriculture
IP	Implementing Partner
KML	Knowledge Management and Learning
LDC	Louis Dreyfus Company
LPM	Live Presenter Mention
MMDAs	Metropolitan Municipal and District Assemblies
MoFA	Ministry of Food and Agriculture
MoU	Memorandum of Understanding
(M)SME	(Medium) Small and Micro Enterprise
MWRS	Manual Warehouse Receipt System
NF	Nucleus Farmer
NGO	Nongovernmental Organization
NORTHCODE	Northern Region Western Corridor Development

NPK	Nitrogen, Phosphorous, and Potash
NR	Northern Region
NRGP	Northern Rural Growth Programme
NSAICU	Northern Sector Agriculture Investment Coordination Unit
OB	Outgrower Business
OBM	Outgrower Business Management
OG	Outgrower
OVCF	Outgrower Value Chain Fund
PERSUAP	Pesticide Evaluation Report and Safe Use Action Plan
PFI	Partner Financial Institution
PHH	Post-Harvest Handling
PPE	Personal Protection Equipment
PPRSD	Plant Protection and Regulatory Services Directorate
PRC	Public Relations and Communication
PROTOA	Progressive Transport Owners Association
RMG	Regional Marketing Group Concept Limited
RDF	Rural Development Fund
SARI	Savanna Agricultural Research Institute
SEG	Small Equipment Grant
SIF	Social Investment Fund
SMFM	Sell More for More
SOW	Scope of Work
SSP	Spray Services Providers
STTA	Short-Term Technical Assistance
TNS	TechnoServe
UDS	University of Development Studies
UENR	University of Energy and Natural Resources
UER	Upper East Region
USAID	United States Agency for International Development
UWR	Upper West Region
VSLA	Village Savings and Loan Association
WIAD	Women in Agriculture Department
WRS	Warehouse Receipt System
ZOI	Zone of Influence

EXECUTIVE SUMMARY

During the reporting period, 103,684 smallholder farmers, out of whom 50,337 or 49% were women benefitted from the ADVANCE project's interventions. Out of the total smallholder beneficiaries reached this year the highest proportion of 34% was from Northern Region and the lowest from Kintampo North (7%). This achievement is 29.61% higher than the targeted figure of 80,000 smallholder beneficiaries for the year. This achievement brings the total number of beneficiaries reached so far to 126,062 smallholders or 11.6% over the life of project target of 113,000. In addition, 96,850 households out of which, 79,468 (82.05%) were vulnerable, benefitted from the project during the reporting period. Approximately 25% (23,886) of all beneficiary households are new to the project whilst 20% (16,340) are new vulnerable households.

About 70% of all the beneficiaries, 85,384 individuals (including 41,549 or 49% women), were trained on Good Agronomic Practices (GAPs), Post-Harvest Handling, Produce Quality Standards, Farming as a Business (FaaB), Numeracy, Mycotoxins Management and Control, and Soybean Utilization and Nutrition, among others. Women were specifically targeted for capacity building activities to improve their numeracy, entrepreneurship and leadership skills, and their understanding of their rights as well as household nutrition. This number trained is 6.73% higher than the 80,000 individuals targeted for the fiscal year. With this achievement, the project has reached 114,488 individuals and exceeded the life of project training beneficiaries target of 100,000.

The project provided business development services to over 73,131 Medium, Small and Micro Enterprises (MSMEs), 37,237 (52.52% of which are women owned or led). The services include financial literacy trainings, business planning, facilitating access to loans and other financial services including savings. Similarly, 1,079 private enterprises and producer organizations received support from the project (Figure 3).

During the year, the project facilitated \$284,071.14 worth of cash loans from financial institutions to a total of 708 producers and outgrower businesses (17 Outgrower Businesses – OBs, 18 Farmer Based Organizations – FBOs, and 673 Outgrowers – OGs). This achievement was 24% of the target of \$1,000,000 for the year. However, the project has achieved 89% (\$3,808,581) of its \$4,300,000 life of project target.

The project beneficiaries made capital investments of \$537,011.82 by purchasing tractors, processing plants and other agricultural equipment. These investments are 67% of the target for the year and brings the cumulative achievement to \$3,427,471, which is 86% of the life of project target of \$4,000,000. In addition, 157 OBs (9 Females, 148 Males) and three FBOs invested \$2,682,709.74 (GHS11,087,102.85)¹ to directly support 28,840 smallholder farmers (13,140 women and 15,700 men) with production inputs during the season, which enables them to improve their yields.

The 2016 gross margins per hectare totaled \$759.45 for maize, \$647.70 for rice and \$531.01 for soya. The 2016 crop season had lower maize and rice gross margins than the 2015 season as the average prices for maize and soybean decreased from \$368/MT to \$278/MT for maize and \$336/MT to \$288/MT for

¹ Average Exchange rate in 2017 is \$1 = GHS4.273

soya. This was partly due to the fluctuation in the cedi-dollar exchange rate². The yields for maize and rice also decreased from 3.63MT/ha to 3.34MT/ha and from 3.98MT/ha to 2.90MT/ha respectively. However, 2016 soya gross margin was higher than the 2015 as average yields increased by 18.5% (from 1.83MT/ha in 2015 to 2.17MT/ha in 2016). The project achieved its gross margin per hectare targets of \$700 for maize (8% over) but fell short of targets for rice and soya by 43% and 3% respectively. Comparing with the national average provided by MoFA³ for maize, rice and soybean in ADVANCE Zone of Influence (ZOI), ADVANCE farmers realize 83.98% more in yields for maize, 16.39% more for rice and 29.71% more for soya. (ADVANCE beneficiaries yield for maize, rice and soya are 3.33 MT/ha, 2.84 MT/ha and 2.14 MT/ha respectively compared to 1.81MT/ha, 2.44MT/ha and 1.68MT for maize, rice and soya respectively by MOFA)

In 2016, project beneficiaries produced an estimated 231,688 MT of maize, rice and soybean, compared with 182,376 MT in 2015. Consistent with the high proportion of maize farmers (75%), benefitting from the project, over 86% of total quantity produced was maize. Rice and soya was 6.5% and 7.3% respectively. Except for soya, male farmers produced, on average, more than the females. Overall, total quantity produced by male farmers was 1.46 times higher than their female counterparts. Total quantity sold totaled 142,279 MT and 84% of these sales were from maize while 7% and 9% were from rice and soybean respectively. Total sales amounted to \$39,770,758, with 83.4% from maize, 7.1% from rice and 9.5% from soya and overall project incremental sales of \$6,711,608.64.

During the reporting period, 72,659.18 ha (99.98% of the total land area cultivated during the season) were under improved land based technologies by 86,570 farmers. The total number of beneficiaries that applied improved land based and non-land based technologies and management practices is 86,848, which is over 155% of the target.

Finally, 94% of the firms the project worked with, were profitable and 56% of them (107) had higher profits in 2016 compared with 2015. These firms made a total profit of \$51,961,413.75 (GHS 214,497,716.16).

² The cedi devalued from GHS3.8637/\$1 by the end of the production season in 2016 to GHS 4.3862/\$1 this fiscal year, representing 13.52% decrease in the cedi/\$ value

³ Source: Statistics, Research and Info. Directorate (SRID), Min. of Food & Agric.- June, 2017

A. INTRODUCTION

This report presents the main accomplishments of the USAID ADVANCE project from October 2016 to September 2017. The USAID ADVANCE project is implemented by ACDI/VOCA and its sub-awardees; ACDEP, PAB Consult, and TechnoServe. The goal of the project is to increase the competitiveness of the maize, rice and soya value chains in Ghana. The report summarizes the project's achievements against this goal and its indicators, and presents the main activities undertaken during the year. The report is organized along the project's intermediate results as follows:

- Increased agricultural productivity in targeted commodities
- Increased market access and trade of targeted commodities
- Strengthened capacity for advocacy and activity implementation

The report starts with the collaboration ADVANCE has had with other organizations, projects, and the Ministry of Food and Agriculture (MoFA), followed by a summary of key results. The report also provides some details on specific activities and outputs that contributed to the key results, including cross-cutting activities like gender, environment, use of various Information, Communication Technology (ICT) tools, and monitoring, evaluation and learning activities.

B. COLLABORATION

Collaboration with the Ministry of Food and Agriculture

The USAID ADVANCE project continues to collaborate with the Ministry of Food and Agriculture (MoFA) and the ministry's Agricultural Extension Agents (AEAs) at national, regional, and district levels. During the reporting period, USAID ADVANCE in collaboration with the Plant Protection and Regulatory Services Division (PPRSD) of the ministry jointly held radio discussions and awareness campaigns on Fall Army Worm (FAW-*Spodoptera frugiperda*) infestation and control. The project also worked with the PPRSD to establish a Surveillance system and trained 256 young men as Spray Service Providers (SSPs).

In addition, 91 MoFA AEAs were trained on the biology and effective monitoring, scouting and control of FAW on maize fields. Also, 60 AEAs were engaged in setting up and monitoring 30 Pheromone traps in 60 districts where the project operates. Also, through 'Farm Clinics' established by the project, these AEAs educated smallholder farmers (SHFs) on general pest and disease identification, scouting, and control, with emphasis on the FAW infestation.

MoFA AEAs also assisted in establishing 389 demonstration sites and training smallholder farmers (SHF) on Good Agriculture Practices (GAPS) such as row planting, effective methods of fertilizer application, use of certified seed, the importance of conducting germination test, Post-Harvest Handling (PHH) training, FAW control, and anti-bushfire campaigns.

During the year, specifically in the off-season, ADVANCE regional teams collaborated with MoFA's Women in Agriculture Development (WIAD) officers to train 8,182 smallholder farmers (7,463 females, 719 males) on nutrition sensitive agriculture and soybean utilization, which aims at improving household

nutrition, especially for women and children in farming communities. The trainings focused on preparing different dishes using their locally grown soy and quality protein maize varieties as the main ingredients.

All the ADVANCE Regional Offices participated in the 32nd National Farmers Day celebrations organized by MoFA in the various regions.

Collaboration with Other Partners

AFGRI-Ghana/John Deere

During the 2017 production season, ADVANCE and AFGRI-Ghana/John Deere jointly established 13 model farms. The model farms are large demonstration plots set up to promote at commercial level, mechanized land preparation, planting, and agrochemical application along with other best agronomic practices, and the use of high yielding seeds. John Deere and AFGRI Ghana provided the equipment and technical support while the Outgrower Businesses (OBs) hosting the model farms provided land, production inputs and a tractor operator.

Agriculture and Natural Resources Management Project

During the reporting period, ADVANCE hosted technical staff from the Agriculture and Natural Resources Management Project (AgNRM) and shared with them our experiences in establishing minimum-tillage demonstrations using rippers, as part of the project's climate smart activities. The AgNRM team was educated on the advantages of ripping, which include soil moisture conservation, soil structure maintenance, and soil erosion control.

Agricultural Policy Support Project (APSP)

During the year, ADVANCE and the Agriculture Policy Support Project (APSP) collaborated to train 90 executives and members of 30 Farmer Based Organizations (FBOs) from Northern Region for the latter to become Farmer Based Enterprises (FBEs). The training took the participants through the concept and practice of advocacy, networking for advocacy, and agricultural policies in Ghana, including the recent MoFA initiative on 'Planting for Food and Jobs'. The collaboration enabled cross-fertilization of experiences, expertise and knowledge between the two projects for the benefit of the trainees.

Agriculture Technology Transfer (ATT)

ADVANCE and Agricultural Technology Transfer (ATT) collaborated to organize the 6th Pre-Harvest agribusiness event and 7th Pre-Season event in Sunyani and Tamale respectively. Agricultural Technology Transfer (ATT) also provided a two-row mechanical John Deere planter as a grant, to an ADVANCE OB in the Sissala West District of the Upper West region. The OB, James Bawah and his operators were trained by AFGRI-Ghana on how to use the planter.

AMPLIFIES

During the reporting year, the Assisting Management in the Poultry and Layer Industries by Feed Improvement and Efficiency Strategies project (AMPLIFIES) trained 566 farmers on best practices in harvesting and post-harvest handling of maize and soy. The trained farmers are members of 20 Farmer Based Organizations (FBOs) working with the ADVANCE project and have been linked to poultry farmers to supply maize and soybean for feed. The overall objective of the training was to improve the quality of grain supplied to poultry farms.

Crop Research Institute – Kumasi

The Crop Research Institute (CRI) of the Council for Scientific and Industrial Research (CSIR) at Fumesua in the Ashanti Region supported the ADVANCE project with improved seed for setting up the 2017 major season's actor-led maize demonstrations in ADVANCE South. This collaboration allowed farmers to be introduced very early to new varieties that the research institution had developed. It is expected that the collaboration will continue in 2018 and will be extended to ADVANCE North.

Fall Armyworm Awareness Committee of the FAW National Task Force

The ICT and Outreach, and the Environmental teams of the project collaborated with Farm Radio International and the FAW Awareness/Sensitization Committee of the FAW National Task Force, to create awareness on the FAW outbreak across the country through radio campaigns (radio jingles & announcements), flyers and posters during the reporting period. (*Details on FAW awareness and the work of the national Task Force can be found in section D.1 – 3.12*)

Farmer to Farmer (F2F)

Through a collaboration with the 'Farmer to Farmer' (F2F) project, ADVANCE hosted Professor Dan Mc Grath, an entomologist expert with experience in FAW (*Spodoptera frugiperda*) as a Volunteer to support the project to tackle the Fall Army Worm outbreak in the country. Professor Mc Grath was instrumental and helped the project develop the strategy for setting up the national surveillance system and awareness campaign. He was subsequently hired by the project as a consultant and trained MoFA Extension Agents, PPRSD staff, District Assembly staff, and other agricultural professionals on setting and monitoring pheromone traps to detect the presence of the FAW on time. He also trained 7065 farmers (4373 females, 2692 males) to scout for the FAW on fields, and to use the right pesticides to control the pest.

International Institute of Tropical Agriculture (IITA/N2Africa)

During the 2017 production season, the N2Africa project supported 70 soybean actor-led demonstrations with inoculants. Also, inoculants were made available to smallholder farmers for use on their own farms by N2Africa as part of sensitizing them on the benefits of using inoculants. This brought ADVANCE and N2Africa working together to increase productivity of soybean for four continuous years.

Kwame Nkrumah University of Science and Technology (KNUST)

The University's College of Agriculture of the Kwame Nkrumah University of Science and Technology KNUST during the year collaborated with ADVANCE by providing 5 agricultural students to undertake short term practical internship with the project between June and August 2017.

MTN

The project worked with MTN (a leading mobile services company) to set up mobile money merchant platforms for OBs to facilitate payments and receipt of cash from customers. In the coming year the project will scale up this collaboration to benefit more outgrowers.

Nestlé Ghana Limited

ADVANCE and Nestlé Ghana Limited officially signed a memorandum of understanding (MoU) on December 6, 2016 to train farmers and aggregators in the three northern regions to produce and supply maize that meets Nestlé's quality standards.



*Emmanuel Dorman, COP ADVANCE and Freda Duplan,
MD Nestlé Ghana signing the MoU*

During the reporting period, officials from Nestlé visited and trained two OBs and their 1,729 smallholders working with the project in the Northern Region, on mycotoxin management to meet Nestlé's quality standards. During the visit, Nestlé inspected and certified warehouses of three OBs (Kha-ma Farms in Karaga, Kukobila Nasia Farms, and Gundaa Produce Company in Tamale) selected to sell to Nestlé. The company concluded a contract with Kha-ma Farms and Kukobila Nasia Farms to supply 80 MT of maize.

Also, on June 30, 2017, representatives of the OBs visited Nestlé's Tema factory to strengthen the business relationship and learn first-hand about Nestlé's food safety and product quality requirements.

Peace Corps(PVCs)

Three Peace Corps Volunteers (PCVs) have been attached to USAID ADVANCE project and are based in the Janga, Katabanawa and the Wapuli communities in the Northern Region. In collaboration with the project's technical staff the PCVs provided several trainings to farmers on establishing Village Savings and Loans Associations (VSLAs) as well as managing demonstration sites for training farmers in good agronomic practices.

Radio Stations

The project continued to collaborate with 31 partner radio stations to broadcast agricultural related information, including good agronomic practices. Sixteen stations were engaged in the FAW radio campaign across the ADVANCE operational zones from May to September 2017. The campaign included broadcasting FAW awareness and preventive messages through radio jingles and Live Presenter Mentions (LPMs) in English and 10 Ghanaian dialects.

Regional Marketing Group Concept Limited (RMG)

During the reporting year, ADVANCE trained the sales representatives of RMG, an input supply company on the USAID Pesticide Evaluation Report and Safer Use Action Plan (PERSUAP). The project shared the reasons behind the selection of the agrochemicals that are approved. ADVANCE collaborated with RMG to make selected agrochemicals and maize hybrid seeds available to farmers through joint community input promotion activities.

Smallholder Business Development Project (Technoserve/JD Mechanization Project)

This TechnoServe(TNS) implemented small business development project, in collaboration with John Deere technicians trained 23 OBs and their operators on using planters to scale up mechanization. This practical training fits well with the establishment of model farms.

Soybean Innovation Lab/Catholic Relief Services

The Soybean Innovation Lab and Catholic Relief Services designed soybean threshers for local reproduction. Along with the Agriculture Technology Transfer project (ATT), ADVANCE participated in the tests and handing over to two communities in the Northern Region. ADVANCE and ATT jointly funded the training of 12 local manufacturers to commercialize the design. The threshers can become an affordable solution to soybean threshing once minor design problems are addressed.

Voto Mobile

ADVANCE collaborated with VOTO Mobile and AFGRI/JD to develop voice messages in local dialects on basic tractor maintenance tips and shared with 16 OBs owners of John Deere tractors and their operators in the Northern Region. This pilot test aimed to improve tractor operations and maintenance.

Furthermore, both organizations jointly trained 13 OBs and 257 outgrowers on how to use the voice messaging system to communicate to their outgrowers, mostly on available services and schedules. This improved the working relationship, reduced OBs' operational costs, and encouraged the outgrowers to repay for the services provided to them. Also, Voto Mobile was hired to provide agricultural tips and market information to over 20,000 farmers during the reporting year.

University of Development Studies (UDS)

Seventy-three Interns and National Service Persons (including 18 females) from the University of Development Studies (UDS) worked with the project, learning and supporting various field activities, record keeping, monitoring grants, accounting among others. Fifty-three of the students were attached to OBs in the field to support and improve their outgrower business management and especially record keeping.

University of Energy and Natural Resources(UENR)

ADVANCE had consultations with the officials of the University of Energy and Natural Resources (UENR), with an MOU drafted and under consideration for the School of Agriculture and Technology to become a partner of the project. ADVANCE also supported the hosting of an international conference on climate change and sustainable development in Africa by the University, held in Sunyani. The project will offer internships to the UENR students in the coming year as these placements provide the students opportunities to gain practical knowledge of agriculture and also enable them to realize the potentials agriculture offer as careers.

World Food Program (ENVAC Program)

ADVANCE collaborated with the World Food Program (WFP), implementers of the five-year "Enhanced Nutrition and Value Chains in Ghana (ENVAC)" project. Eight ADVANCE OBs through the ENVAC project were trained to produce quality maize to Premium Food Ltd. and Yedent Food Ltd, two processors under the ENVAC project, and also working with ADVANCE. The OBs were also trained in conservation agriculture at the No-Till Center in Kumasi.

Yara Ghana Ltd.

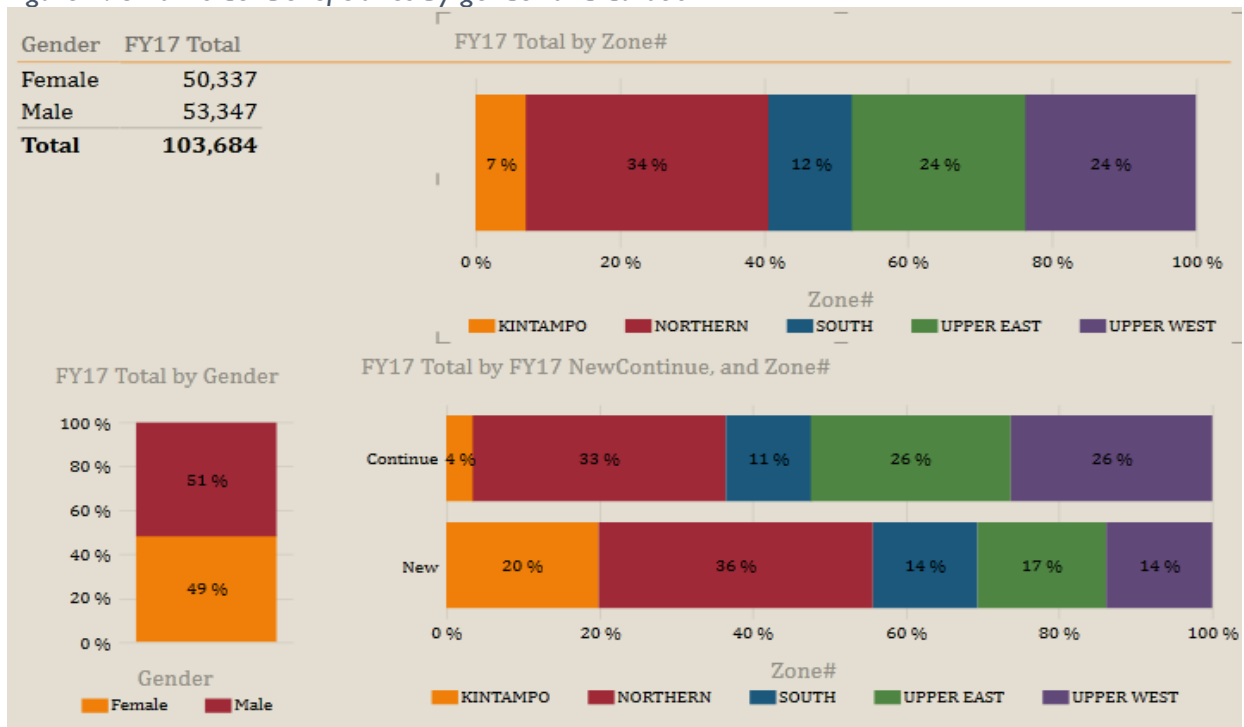
For a third consecutive year, Yara provided several types of fertilizers to showcase on ADVANCE maize, rice and soybean demo sites in the five regions of operation. Yara also participated in the community inputs promotion events organized by the project. Additionally, they collaborated to set up 12 model farms to show the benefits of mechanization, appropriate plant nutrition and other good agronomic practices at commercial level, and this has yielded very good results.

C. KEY RESULTS

I. Direct Beneficiaries

During the reporting period, **103,684** smallholder farmers, out of whom **50,337 (48.6%)** were women, benefitted from the various project interventions (Figure 1). Approximately 21.2% of all smallholder beneficiaries joined the project in the reporting year. Out of the total smallholder beneficiaries reached this year the highest proportion of 34% was from Northern Region and the lowest from Kintampo North (7%). This achievement is almost 30% higher than the targeted figure of 80,000 smallholder beneficiaries for 2017. These figures bring the total number of beneficiaries reached so far to 126,062 smallholders, which is 116% of the life of project target of 113,000. In addition, 96,850 households out of which, 79,468 (82.05%) are vulnerable, benefitted from the project during the reporting period. Approximately 21.22% (20,559) of beneficiary households are new to the project whilst 18.49% (14,695) are new vulnerable households.

Figure 1: Smallholder beneficiaries by gender and duration



Almost all the beneficiaries, 85,384 individuals (including 41,549 or 48.66% women), received trainings on Good Agronomic Practices (GAPs), Post-Harvest Handling, Produce Quality Standards, Farming as a Business (FaaB), Numeracy, Mycotoxins Management and Control, Soybean Utilization and Nutrition, among others. Women were specifically targeted to benefit from capacity building activities to improve their numeracy, entrepreneurship and leadership skills, and understanding of their rights as well as household nutrition. This training achievement is 6.73% higher than the 80,000 individuals targeted for the

reporting period (Figure 2). With this achievement, the project has reached 114.5% or 114,488 individuals of its life of project training beneficiaries target of 100,000.

Additionally, 73,131 Medium, Small and Micro Enterprises (MSMEs), 37,237 (52.52%) of which are women owned or led, received business development services during the year. These include financial literacy training, business planning support, and facilitating access to loans. Similarly, 1079 private enterprises and producer organizations received support from the project (Figure 3).

Figure 2: Training beneficiaries by region and gender

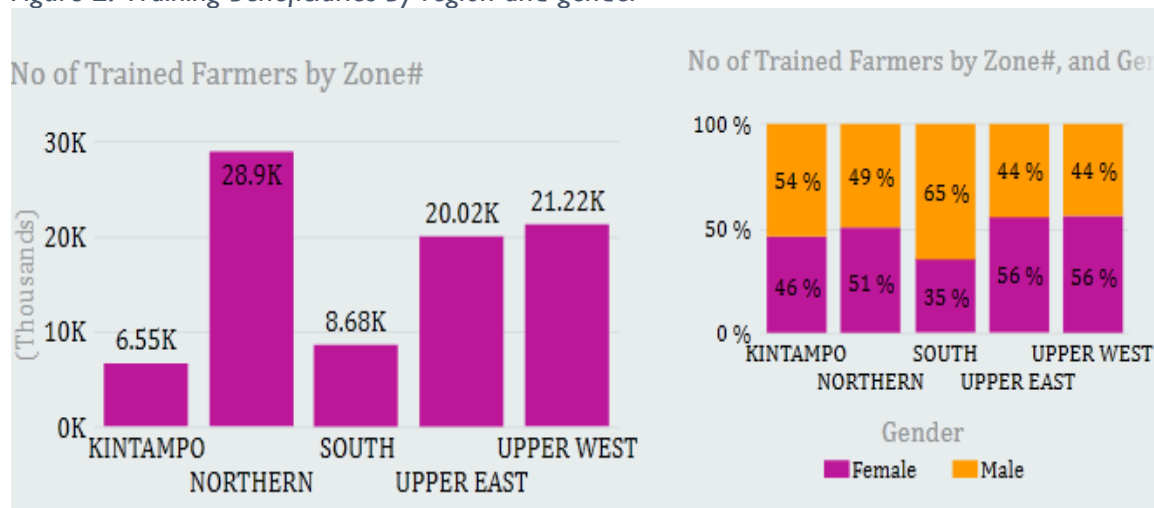
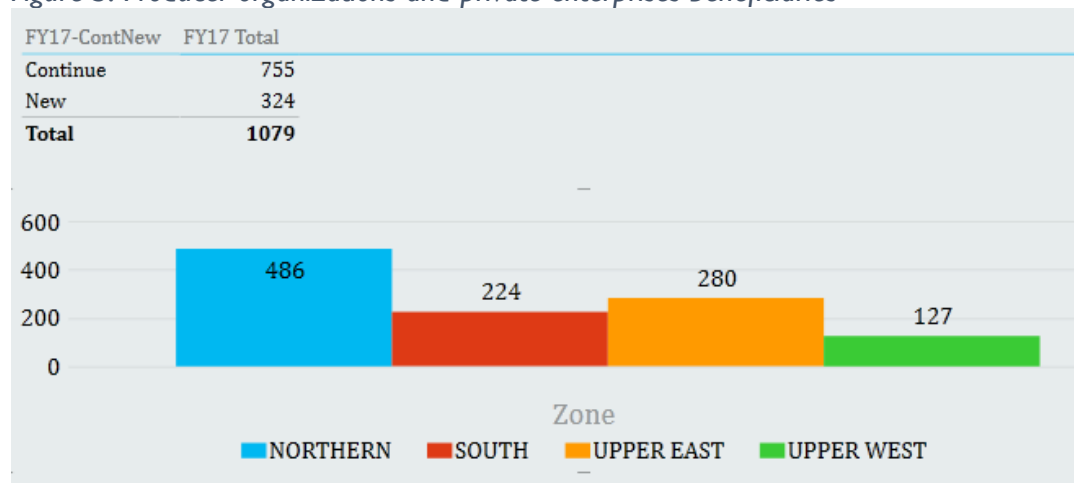


Figure 3: Producer organizations and private enterprises beneficiaries

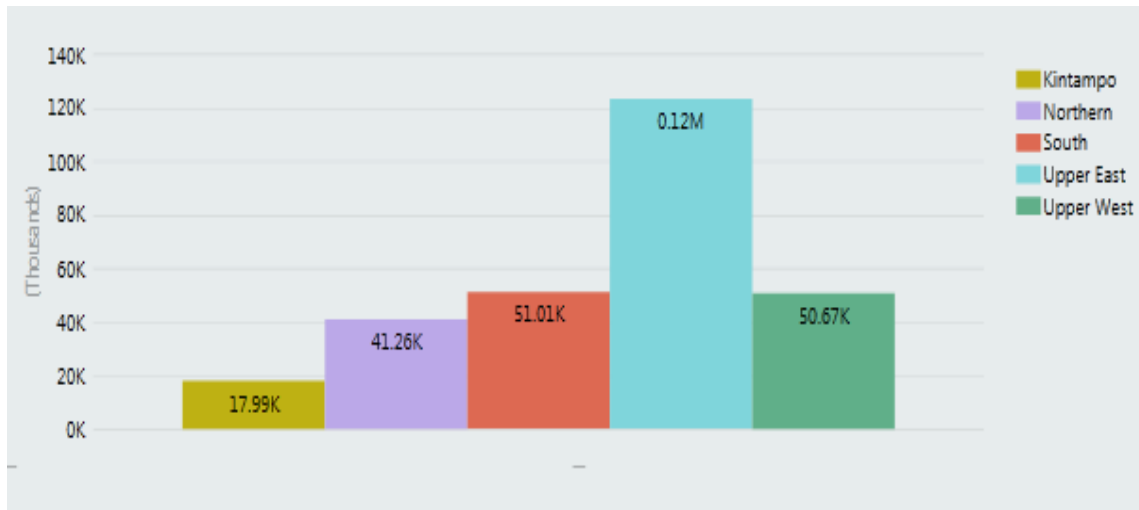


2. Loans and Investment

During the year, the project facilitated \$284,071.14 of loans (**Error! Reference source not found.**) to project beneficiary lead actors. These were made up of loans disbursed to beneficiaries by Financial Institutions such as Sinapi Aba Savings and Loans, Sonzele RCB, Social Investment Fund SIF, Lawra Area Rural Bank, Bessfa Rural Bank, Brong Ahafo Catholic Cooperative Society for Development BACCSOD,

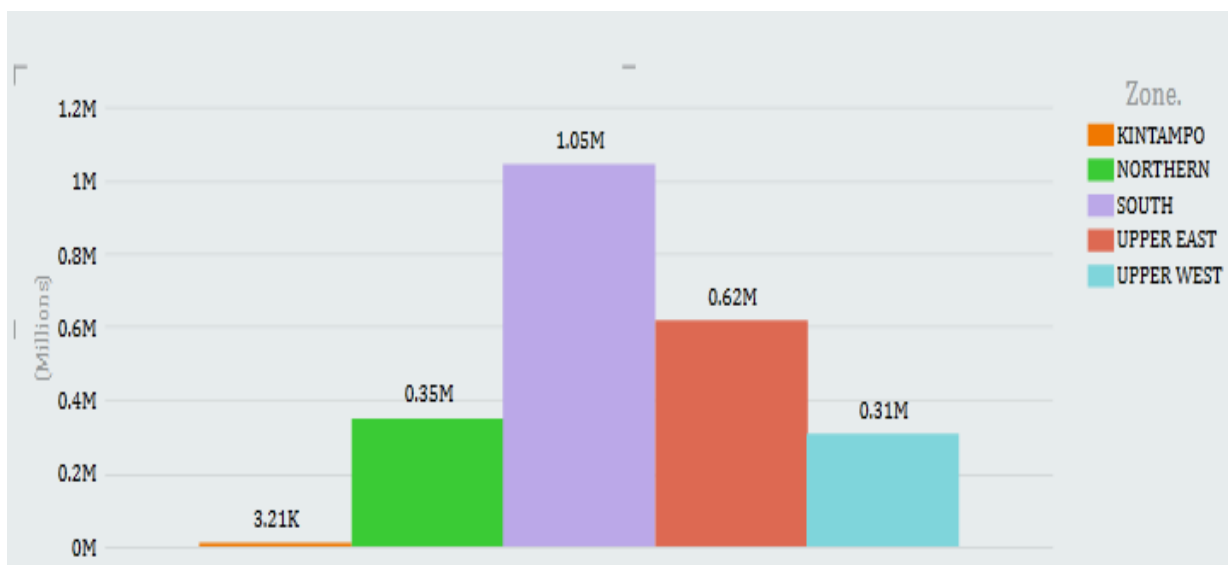
Opportunity International Savings and Loans (OISL), Agricultural Development Bank (ADB), Bimbilla Cooperate Credit Union, and Yapra Rural Bank. The loans were used to finance the cost-share of the Outgrower Businesses' tractors and other equipment grants. The OBs also used part of the loans to fund their aggregation activities and to purchase inputs for themselves and their outgrowers. This achievement was 28.41% of the target of \$1,000,000 for the year, however, this brings the project's achievement to 89.95% or \$3,848,256.21 of its \$4,300,000 life of project target.

Figure 4: Loans disbursed in 2017 by zones



The project beneficiaries made capital investments amounting \$537,012 during the year to purchase tractors and other equipment, as well as processing plants. This is a 67% achievement of the 2017 target and brings the life of project achievement to \$3,427,471 (86%) of the life of project target of \$4,000,000.

Figure 5: Beneficiaries' capital investment by zone



In addition, 169 OBs (9 Females, 148 Males) and 40 FBOs invested \$2,682,709.740 (GHS11,087,102.85) to provide production inputs for 29,952 smallholder farmers (13,729 Females, 16,223 males) during the production season (**Error! Reference source not found. .2**)

Table 1: Production support by OBs to OGs in 2017

Input	Northern	Kintampo	Upper East	Upper West	South	Total
Acreage Ploughed (Acres)	28,567	2368.5	10694	17,616.50	4279	63,525
Total Amount invested in (GHS)	1,813,445.00	183,350	669908	1,729,655.00	352760	4,749,118
Quantity of Seed (Kg)	21,643.60	7,438	14347	90,459.82	21810.4	155,699
Total Amount invested in Seed (GHS)	445,625.16	36,288.50	130183.5	826,748.94	307787.2	1,746,633
NPK (Bags)	6,414	3,697	3240	28,771.50	10368	52,491
Total Amount invested in NPK (GHS)	374,319	216,188.50	185348.5	2,041,692.05	609290	3,426,838
SOA (Bags)	-	1,368	890	9,161.00	0	11,419
Total Amount invested in SOA (GHS)		57,620	41855	681,377.00	0	780,852
TSP (Bags)	621	0	0		0	621
Total Amount invested in TSP (GHS)	74,520	0	0		0	74,520
Inoculant Qty (Bags)	13	0	0	368	0	381
Total Amount invested in Inoculants (GHS)	325		0	12,694.00	6056	19,075
Agro-Chemi Qty (L)	852	5,745	0	7,601.00	111671	125,869
Total Amount invested in Agro-Chem (GHS)	9,892	160,546.50	0	119,628.00	0	290,067
Total	2,718,126.16	653,993.50	1,027,295.00	5,411,794.99	1,275,893.20	11,087,102.85

3. Gross Margins and Incremental Sales – 2016 Crop Season

As per USAID's definition, gross margin is the difference between the total value of small-holder production of an agricultural commodity and the total recurrent cash cost of producing that commodity, divided by the total number of hectares. Gross margin is presented per hectare and is a measure of the gross income from a farm. The five data points required to calculate the gross margin are area planted, volume of production, total recurrent cash input costs, sales and quantity sold.

The figures presented in the subsequent sections were extrapolated from the survey respondents from a representative sample of all project beneficiaries, following the guidelines in the USAID Feed the Future Indicators Handbook.

2.1 HECTARES PLANTED

During the 2016 crop season, 88,410 ADVANCE beneficiaries cultivated a total of 72,667 hectares, of which 44% was by women. Over 80% of land was planted with maize, 8% with rice and 12% with soya. This was a 35.29% increase of the total hectares planted in 2015 by beneficiary farmers (Table 2).

Table 2: Total hectares planted in 2016 and 2015 by crop and by gender

Gender	Maize		Rice		Soya		Total	
	2016	2015	2016	2015	2016	2015	2016	2015
Female	24,920.05	10,880.28	2,311.95	1,612.85	4,675.65	4,264.82	31,907.65	16,757.95
Male	34,910.97	30,087.00	2,747.18	3,172.79	3,104.19	3,716.43	40,762.34	36,976.22
Total	59,831.02	40,967.28	5,059.13	4,785.64	7,779.84	7,981.25	72,669.99	53,734.17

On average, the area planted by each farmer in 2016 was 0.9 ha for maize, 0.52 ha for rice and 0.65 ha for soya. Female maize farmers planted an equal area as their male counterparts whilst female rice and soya farmers planted less than their male farmers (14.5% less for rice and 13% less for soya) (Table 3). The increase in the area planted by women farmers can be attributed to advocacy sessions carried out during the reporting period on women access to agricultural lands in all the project operational areas.

Table 3: Average hectares planted per farmer in 2016 by crop and gender

Gender	Maize	Rice	Soya	Total
Female	0.9	0.53	0.61	0.79
Male	0.9	0.62	0.70	0.85
Total	0.9	0.52	0.65	0.82

2.2 PRODUCTION

Total production in 2016 from all project beneficiaries is estimated as 231,688 MT (Table 4) as compared with 182,376 MT in 2015. Consistent with the high proportion of maize farmers benefitting from the project in 2016 (75%), over 86% (199,882 MT) of produce was maize, 6.5% and 7.3% was rice and soya respectively. Except for soya, male farmers produced a higher total quantity per person than the females. Overall, total quantity produced by male farmers was 1.5 times more than the females.

Table 4: Quantity produced per crop and gender in 2016 (MT)

Gender	Maize	Rice	Soya	Total
Female	78,263.63	6,258.46	9,626.75	94,148.84
Male	121,617.78	8,667.40	7,254.10	137,539.28
Total	199,881.41	14,925.86	16,880.85	231,688.12

On the average, a maize farmer produced about 3 MT, a rice farmer 1.5 MT, and soya farmer 1.40MT (Table 5). For all the crops put together, a male farmer produced 1.23 times more than a female farmer. The difference is lowest for maize farmers where a male farmer produces 1.10 times that of a female farmer and highest (1.6 times) for rice farmers. These figures illustrate the relative dominance of the men in the farming activity, and the need to redouble efforts in empowering women to increase their production levels. To this end ADVANCE is putting efforts in four key women empowerment areas namely 1. Decisions about agricultural production; 2. Access to and decision-making power over productive resources; 3. Control over use of income; and 4. Leadership in the community.

Table 5: Average production per farmer in 2016 (MT)

Gender	Maize	Rice	Soya	Total
Female	2.84	1.18	1.26	2.33
Male	3.14	1.84	1.64	2.87
Total	3.01	1.49	1.40	2.62

Compared with the 2015 figures (Table 6), the 2016 season's volume of production saw a significant reduction for both men and women (except for soybean, which saw some gains) farmers primarily due to the Fall Armyworm (FAW) infestation in most maize fields and floods in major rice growing areas in the Northern and Upper East Regions. However, the average production per farmer was higher for women farmers in 2016 than in 2015.

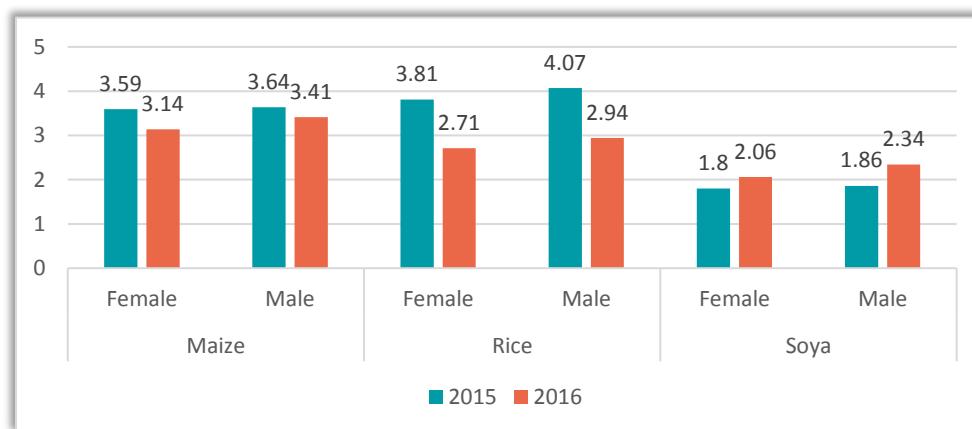
On average, except for soya farmers, a male farmer produced a 22% less in 2016 than in 2015 whilst a female farmer produced 26% more in 2016 than in 2015. For maize, a male dominated sector, women farmers produced almost 18% more than the 2015 figure on average, while men produced less than 30% that of their 2015 production. For soya, which is culturally a female's crop, on average, women farmers increased their production by over 8% while men increased theirs by 10%.

Table 6: Yields in 2015 and 2016 by gender and crop (MT/ha)

Gender	Maize		Rice		Soya	
	2016	2015	2016	2015	2016	2015
Female	3.14	3.59	2.71	3.81	2.06	1.8
Male	3.41	3.64	2.94	4.07	2.34	1.86
Total	3.34	3.63	2.84	3.98	2.17	1.83

Table 6 shows the yields by project beneficiaries during the 2016 and 2015 agricultural season. In 2016, maize yield was at 3.34 MT/ha as compared to 3.63MT/ha in 2015. This 8.7% drop was because of FAW infestation in the ADVANCE North zone. Floods in the Northern and Upper East Regions in 2016 also destroyed most rice farms and affected yields, reducing them from 3.98 MT/ha in 2015 to 2.90 MT/ha in 2016 (a 37% drop). The case was different for soybean which saw a 19% gain from 1.83 MT/ha in 2015 to 2.17 in 2016. Women’s yields⁴ were comparable to the men across the three crops. Although women farmers had lower yields, the difference was not significant as was the case in previous years. This means that women will likely be able to produce as much as the men and therefore improve their economic conditions if they had access to larger plots. Our analysis shows a correlation between yields and land size for all crops, therefore increasing the land size for women should lead to increases in their total production.

Figure 6: Yields in 2015 and 2016 by gender and crop (MT/ha)



2.3 TOTAL RECURRENT CASH INPUT COSTS

Total recurrent input costs used to calculate the gross margins are those that were paid in cash and not given in kind, as per the 2016 USAID’s FTF Indicator handbook definition. Family labor and similar in-kind contributions are ignored, as well as all non-significant costs, that is those less than 5% of the total.

In the 2016 farming season, input costs incurred by beneficiaries on total land area cultivated was \$11,728,711 of which 86% was for maize, 8% for rice and 6% for soya. Of this total, 41% (\$4,782,495) of inputs costs was spent by women (Table 7).

Table 7: Inputs costs by gender and crop

Gender	Maize	Rice	Soya	Total
Female	\$3,942,520.30	\$404,347.58	\$435,627.05	\$4,782,494.93
Male	\$6,132,793.69	\$511,430.35	\$301,991.55	\$6,946,215.59
Total	\$10,075,313.99	\$915,777.93	\$737,618.60	\$11,728,710.52

⁴ Total production by women divided by total hectares planted by women

Table 8 below gives the average inputs costs per farmer. It shows that on average, a farmer invested \$132.66. Maize farmers incurred the highest costs at \$151.88 per farmer, while a soya farmer invested the least with \$61.28. A rice male farmer invests almost twice as much as his female counterpart. That ratio is 1.35 and 1.16 respectively for maize and soya.

Table 8: Average input cost per farmer by crop and gender

Gender	Maize	Rice	Soya	Total
Female	\$143.06	\$76.05	\$57.19	\$118.11
Male	\$158.16	\$108.33	\$68.34	\$144.96
Total	\$151.88	\$91.23	\$61.28	\$132.66

However, on average, per hectare planted, rice farmers invested the most, with \$181.01, compared to maize and soya farmers, at \$168.40 and \$94.81 respectively. Male farmers generally had a higher inputs costs than their female counterparts for all commodities per unit of land (Table 9). The higher investment by male farmers corresponds with higher application of technology as indicated in Table 16.

Table 9: Average input costs per hectare planted by crop and gender

Gender	2016				2015			
	Maize	Rice	Soya	Total	Maize	Rice	Soya	Total
Female	\$158.21	\$174.89	\$93.17	\$149.89	\$218.94	\$270.14	\$82.80	\$189.22
Male	\$175.67	\$186.17	\$97.29	\$170.41	\$231.42	\$233.23	\$87.83	\$217.14
Total	\$168.40	\$181.01	\$94.81	\$161.40	\$228.10	\$245.67	\$85.15	\$208.44

2.4 SALES

Total quantity of produce sold was 142,279 MT and 84% of this was maize while 7% and 9% was rice and soybean in that order (Table 10). Total sales amounted to \$39,770,758, with 83% for maize, 7% for rice and 10% for soya (Table 11).

Table 10: Quantity sold by crop and gender (MT)

Gender	Maize	Rice	Soya	Total
Female	47,719.09	3,806.76	7,986.39	59,512.24
Male	71,691.00	5,937.15	5,138.66	82,766.81
Total	119,410.09	9,743.91	13,125.05	142,279.05

Table 11: Amount of sales by crop and gender

Gender	Maize	Rice	Soya	Total
Female	\$13,206,582	\$1,073,060	\$2,315,939	\$16,595,581.10
Male	\$19,956,110	\$1,748,056	\$1,471,010	\$23,175,176.59
Total	\$33,162,691.50	\$2,821,116.84	\$3,786,949.35	\$39,770,757.69

Table 12 shows that on average, sales per beneficiary was \$450. Maize farmer's sales were the highest at \$500 while rice sales were \$281 and soya was \$315, which is consistent with the volume of sales for those commodities. Generally, average sales for female farmers were lower than their male counterparts. This may be attributed to women keeping more of their produce for home consumption, their overall lower production levels and prices.

Table 12: Average sales per farmer by crop and gender

Gender	Maize	Rice	Soya	Total
Female	\$479.21	\$201.82	\$304.05	\$409.84
Male	\$514.64	\$370.27	\$332.88	\$483.65
Total	\$499.92	\$281.04	\$314.64	\$449.84

A male rice farmer earned almost twice as much as the female counterpart. Both male and female maize farmers earned almost 1.5 times as much since the beginning of the project. (Table 13) A female soybean farmer earned 1.2 times higher with the project's intervention in 2016 than at baseline. However, rice farmers and male soya farmers were better off at baseline, sales wise.

The data reveals that on average maize farmers cultivated 0.9 ha, rice 0.5ha and 0.7ha for soya during the 2016 production season. In 2015, however, plot size was relatively larger for maize (1ha and 0.71ha respectively) and significantly lower for rice, (0.4ha) while there was no change in size of soya farms. The reduction of plot size and subsequent reduction in yield can be attributed to FAW infestation on maize farms and perennial floods in most rice growing areas resulting in the overall reduction in gross margins for rice and maize farmers as compared to 2015 production season (Figure 6). Yields decreased for rice from 3.98MT/ha in 2015 to 2.84 MT/ha in 2016 (Figure 6) and 3.63MT/ha to 3.33MT/ha for maize from 2015 to 2016. This coupled with lower sales (volume and value) resulted in negative incremental sales for rice farmers (negative \$1,225,322). In addition, the average maize selling price in USD significantly reduced (by 24%) from \$367/MT (

Table 14) in 2015 to \$278/MT in 2016. However, the overall increase in average sales per maize farmer over the baseline average was lower than the 2015 compensated all losses resulting in \$9,831,370.46 incremental sales (

Table 15) for maize.

For soy farmers, yields increased by 18.6% from 1.83 MT/ha in 2015 to 2.17MT/ha in 2016 (Table 6), but plot sizes decreased and costs per hectare (Table 9) increased for 2016 compared to 2015. Also, soy selling price decreased by 14% from \$335/MT to \$288/MT (

Table 14). Additionally, the cedi devalued from GHS3.8637/\$1 by the end of the production season in 2016 to GHS 4.3862/\$1 this fiscal year, representing 13.52% decrease in the cedi/\$ value). The lower price affected the overall average sales of male soya farmers to be 332.88 which is almost 100 percent drop in baseline average sales. The result is negative incremental sales of \$592,829 for soya male farmers and an insignificant incremental sale of \$442,054.31 for women farmers. The effect was a negative incremental sale of \$471,957.49 for all soy farmers (

Table 15). The overall incremental sales for maize, rice and soybean for the 2016 production season was \$6,711,608.64 which was 39.56% of the FY17 Target of \$16,940,000.

Table 13: Average baseline sales per farmer by crop and gender

Soya	Maize	Rice	
Female	\$340	\$455	\$246
Male	\$360	\$645	\$540

Table 14: Average selling price per farmer by crop and gender

Gender	2016 ⁵				2015			
	Maize	Rice	Soya	Total	Maize	Rice	Soya	Total
Female	\$276.76	\$281.08	\$289.99	\$278.83	\$295.88	\$281.55	\$296.36	\$294.26
Male	\$278.36	\$294.43	\$286.26	\$279.99	\$395.46	\$281.96	\$381.87	\$382.24
Total	\$277.74	\$289.57	\$288.47	\$279.52	\$367.94	\$281.83	\$335.70	\$355.53

Table 15: Incremental sales by crop and gender

Gender	Maize	Rice	Soya	Total
Female	\$3,842,242.78	(\$1,348,809.84)	\$442,054.31	\$2,935,487.24
Male	\$5,989,127.68	(\$1,298,994.48)	(\$914,011.81)	\$3,776,121.40
Total	\$9,831,370.46	(\$2,647,804.33)	(\$471,957.49)	\$6,711,608.64

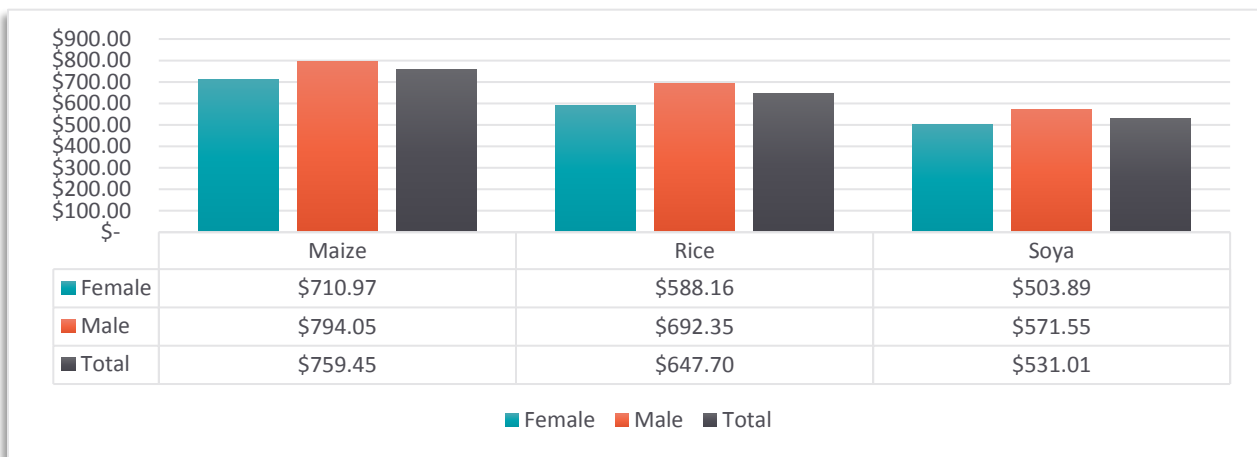
⁵ The cedi devalued from GHS3.8637/\$1 by the end of the production season in 2016 to GHS 4.3862/\$1 this fiscal year, representing 13.52% decrease in the cedi/\$ value.

2.5 GROSS MARGINS

In the 2016 crop season, gross margins per hectare was \$760 for maize, \$648 for rice and \$531 for soya (

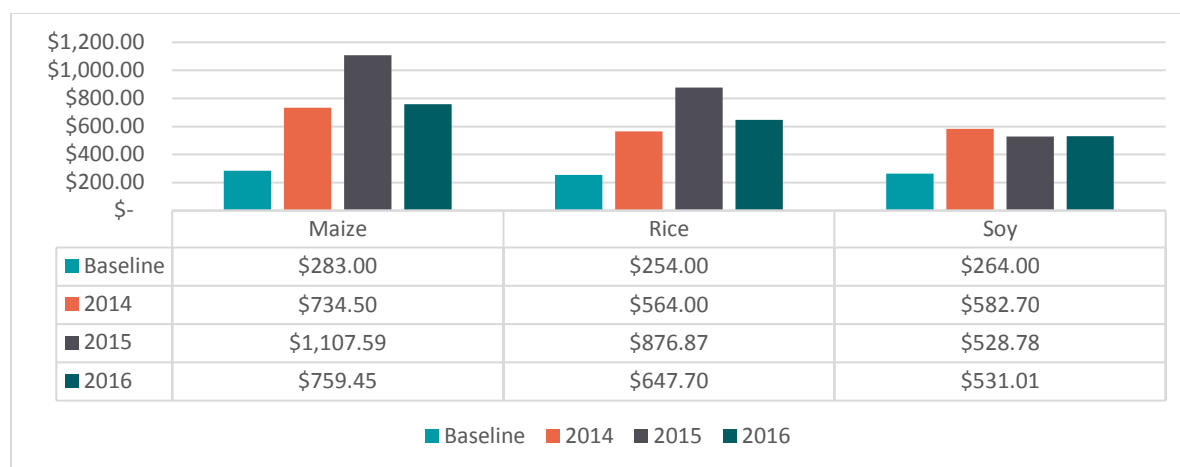
Figure 7). Generally, female farmers realized significantly lower margins than their male counterparts. This is primarily due to lower yield for maize (9% lower), rice (8% lower) and soybean women farmers (lower by 7%) and lower investment in proportionate land areas (Table 9)

Figure 7: Gross margins per hectare by crop and gender



The 2016 crop season had lower maize and rice gross margins than the 2015 season as the average prices for maize and soybean decreased from \$368/MT to \$278/MT for maize and \$336/MT to \$288/MT for soya. Similarly, yield for maize and rice decreased from 3.63MT/ha to 3.34MT/ha and 3.98MT/ha to 2.90MT/ha respectively. However, 2016 soya gross margin was higher than the 2015 as average yields increased by 18.5% (from 1.83MT/ha in 2015 to 2.17MT/ha in 2016). The project achieved its gross margin per hectare targets of \$700 for maize (8% over) but fell short of targets for rice and soya by 43% and 3% respectively.

Figure 8: 2014, 2015 and 2016 crop seasons gross margins per hectare



However, the 2016 gross margins for all crops are significantly higher than the margins at baseline. However due to the impact of FAW and perennial flooding 2016 margins are significantly lower than the 2015 averages for maize and rice by 31% and 26% respectively.

4. Application of Technologies and Management Practices

Data on application of improved technologies and management practices are collected during both phases of the gross margin survey. Almost all project beneficiaries applied one or more improved technology(ies) and management practices (Table 16). Crop genetics, soil related, pest management, cultural practices, climate mitigation, ICT, were some of the technologies and management practices promoted by the project and applied by beneficiaries during the 2016 production season. However, the application rates vary across technologies and gender. Soil related technologies were applied the most.

Generally, female farmers applied a lower number of technologies compared to the men. The largest gaps are seen on application of information and communication technologies (ICT), pest management and climate mitigation practices. In addition, the number of hectares under improved technologies cultivated by men is almost 50% higher than the women's. The women generally had smaller farms and applied improved technologies on a relatively smaller portion of that land.

In total, 72,660 ha (99.98% of the total land area cultivated) are under improved land based technologies by 86,570 farmers. The total number of beneficiaries that applied improved land based and non-land based technologies and management practices is 86,848, which is 155% of the 2016 target (Table 16).

Table 16: Application of technologies by men and women farmers

Technology Type	Application Rate Women (%)	Application Rate Men (%)	# of Women Applying	# of Men Applying	Women (Ha)	Men (Ha)
Crop genetics	34.89	35.47	17,010	20,067	11,064.43	18,923.94

Soil related	47.06	52.85	22,944	29,902	13,387.57	28,734.73
Cultural practices	39.35	45.64	19,185	25,821	13,165.61	27,739.89
Pest management	43.09	52.89	21,010	29,915	17,010.23	34,345.97
One or more land based	80.81	83.37	39,398	47,172	25,7888.17	46,871.01
ICT	17.49	18.49	9,898	9,014		
Climate mitigation	31.88	33.83	15,543	19,141		
One or more tech.	81.18	83.54	39,580	47,268		

Pest management and cultural practices were the most applied technology among women both men and women farmers while ICT and management practices were the least applied. Additionally, a total of 783 beneficiaries from private enterprises and producer organizations applied improved technologies and practices during the 2016 crop season. The achievement is a 3.50% higher than the 2017 target of 70,200 ha of farmland under improved technologies.

5. Supported Firms' Profitability

As a measure of sustainable private sector investment, the profitability and financial self-sufficiency of firms, including civil society organizations (CSOs) that receive capacity-building assistance are tracked by the project, according to USAID's guidelines. A beneficiary firm is profitable when it's annual income is more than annual operating expenses and annual amortization and depreciation of permanent assets, and the firm has operated more profitably in the reporting year than it did in the previous reporting year.

One hundred and ninety-two firms that received significant support from the project was surveyed to ascertain the number of firms operating more profitably in 2016 compared to 2015. These firms consisted of aggregators, input dealers, outgrower businesses and processors. The survey was conducted in August 2017 as Ghanaian firms use calendar year and financial statements and records are usually finalized in April only. Data showed that 94.27% of the firms were profitable and 55.73% of them or 107 had increased their profit in 2016 than in 2015 (Table 17).

Table 17: Number of firms more profitable in 2016 than in 2015

Actor Type	# surveyed	# more profitable	% more profitable	Sum of 2016 Profit (GHS)	Average of 2016 Profit (GHS)
Animal Feed Mill	1	0	0.00	-	-

Business/Trade Association	2	0	0.00	-	-
Buyer/Aggregator	21	12	57.14	5,091,214.60	242,438.79
Foods Processor	3	2	66.67	182,870,948.00	60,956,982.67
Input Dealer	4	2	50.00	5,362,573.25	1,340,643.31
Nucleus Farmer	122	85	69.67	13,617,305.81	111,617.26
Poultry Farm	21	4	19.05	7,175,437.80	341,687.51
Rice Mill	16	2	12.50	380,236.70	23,764.79
Soybean Processor	2	0	0.00	-	-
Grand Total	192	107	55.73%	214,497,716.16	1,117,175.61

These firms together made a total profit of GHS 214,497,716.16 (\$51,961,413.75). Rice Millers seemed to be the least profitable and food processing the most profitable **Error! Reference source not found.**

D. PROGRESS WITH TECHNICAL DELIVERY

This section is organized broadly under the three-main project sub-purposes where the major activities and outputs are presented.

6.0. Sub-purpose 1: Increased agricultural productivity in targeted commodities

To increase maize, rice and soybean productivity of its smallholder farmers, ADVANCE continued setting up more demonstration sites, reinforced farmers' access to quality inputs and business development services, increased the management and technical capacities of the outgrowers and the OBs through various trainings and initiatives, that strengthened the OB model promoted by the project.

6.1. DEMONSTRATION SITES AND GAPS TRAININGS

Actor supported demo sites

Actor supported demonstration sites are a major strategy that ADVANCE uses to train farmers on and show them the effectiveness of improved technologies. While the target for the 2017 season is 480 (210 Maize demos, 45 Rice Demos and 70 Soya), a total of 500 demo sites were set up. One hundred and eighteen of them are specific to Climate Smart Agriculture (CSA). The table below shows the distribution of these demo sites by ADVANCE focus region and crop.

Table 18. Demonstration sites by region and crop

Demo Objective	Ashanti	Kintampo	Northern	Upper East	Upper West	Total
Maize Total	130	40	84	54	74	392
Rice Total		3	14	17	2	36
Soya Total			32	24	15	71
Total	130	68	130	95	92	500

Figure 9, Figure 10 and Figure 11 shows the various objectives for siting maize, rice and soya demos in the various regions.

Figure 9: Maize demonstration plots by region and demo objectives

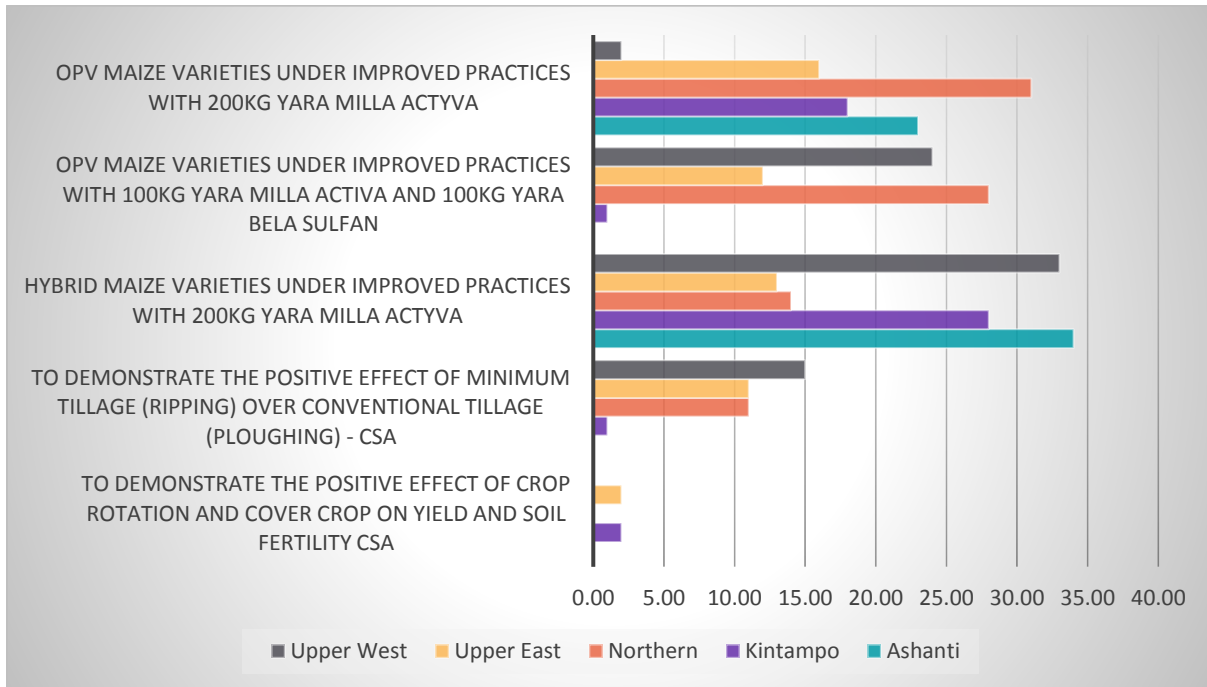


Figure 10: Rice demonstration plots by region and demo objectives

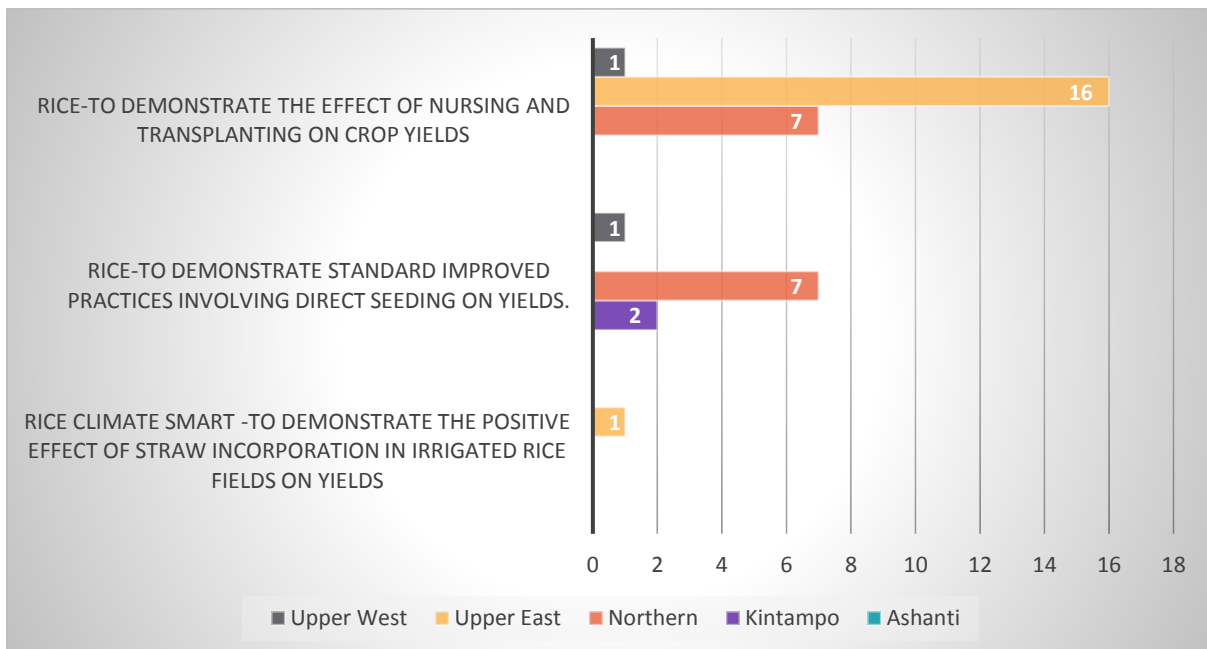
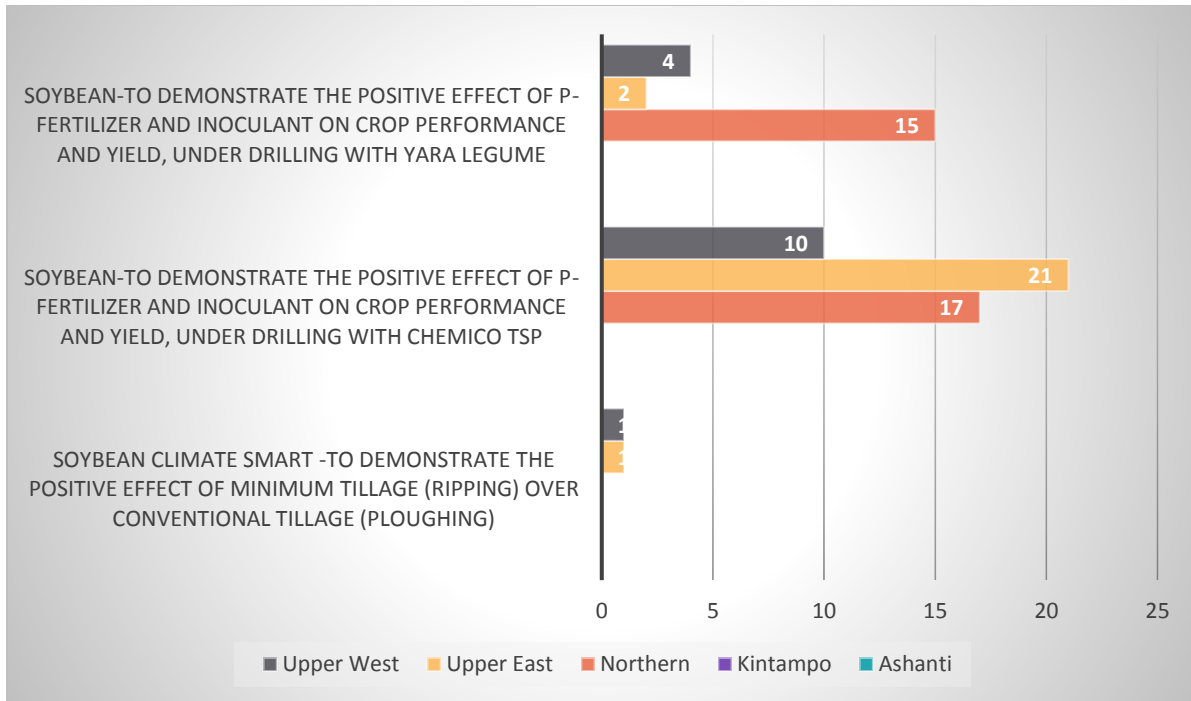


Figure 11: Soya demonstration plots by region and demo objectives



While the demo plots in ADVANCE-South have been harvested and analysed for yield, moisture content and other parameters, the ones in Northern, Upper East and Upper West Regions are at various stages of growth but are not ready for harvest. In addition, the containment measures have successfully addressed the serious Fall Army Worm (*Spodoptera* sp.) attack that affected large Maize growing areas in northern Ghana.



Vegetative stage growth of a maize demo plot at Denugu



Vegetative stage growth of a rice demo at Chuchuliga



Agricare supported maize farm of a smallholder in Janga community of the Northern Region



Vegetative stage growth of a soya demo plot at Shega

Demo sites offer a platform to create and reinforce linkages between farmers and input suppliers who donate 100% of the materials/inputs for the sites and use this platform to promote their products. The land and land preparation are provided by the farmers. The increasing commitment and ownership of the process by OBs, as well as linkages with input suppliers are positive signs of the sustainability of smallholders' current access to improved inputs. As part of the partnership, the large input supply firms collaborate with the project to train farmers on GAPs.

In the reporting year, 15 agro-input firms supported the project's demo sites (Table 19).

Table 19: Input supply firms supporting demonstrations and inputs provided

FIRM	INPUTS SPONSORED
SARI	Rice seeds (AGRA rice)
CRI	Rice seeds (AGRA rice)
M & B Seed	Maize seeds (Opeiburo)
Heritage Seeds	Maize seeds (Sanzal sima, Wang daata, Afayak)
RMG	Maize seeds (Pan 12, Pan 53 & Proseeds)
SKY 3	Maize seeds (Pan 53), herbicides
Dizengoff Ghana	Maize seeds (30Y87)
Timothy Agro	Fertilizers (N.P.K 23.10.5)
Yara	Fertilizers (Actyva, Unik 15, Yara Amidas, Sulphan, TSP, Yara Legume)
Chemico Ltd	Fertilizers (TSP)
N2Africa	Fertilizers (Inoculant)
LDC	Fertilizer (23-10-10-S), herbicides & insecticides
Ariku Farms	Maize Seed (Wang Data/MSI)
IITA	Inoculants
Antika	Maize Seed (Sanzal sima), herbicide
Effah Lawrence	Maize seeds (Omankwa)
OB/ Lead Farmers	Land

GAPs /PHH Training and Beneficiaries

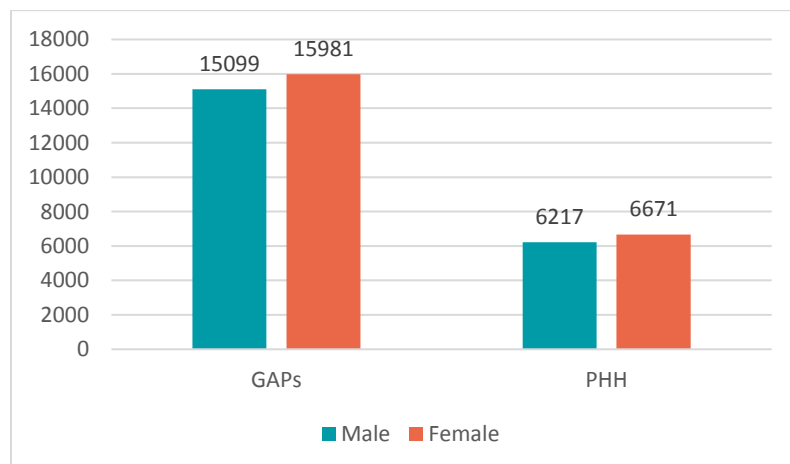
During the reporting year, ADVANCE conducted both off-site and on-site demonstration GAPs and PHH training for 31,080 (15,981 females, 15,099 males) and 12,888 (6,671 females, 6,217 males) smallholders respectively.

Topics treated included acquisition of appropriate agro-inputs, site selection, quality land preparation, use of improved seed, seed germination testing, row planting, fertilization at planting, types and rates of fertilizer application, crop spacing, safer use of agro-chemicals, fertilizer application, pest and disease management, weed control, correct use of inoculants by soybean farmers, harvesting, transporting and temporary storage, shelling/threshing, cleaning and treatment, bagging and warehousing. Additionally, the project trained the farmers on identification of FAW, monitoring and scouting for their presence, timely and effective control by applying the approved insecticides in the project's Pesticide Evaluation Report and Safe Use Action Plan (PERSUAP).



Farmers leaning how to use a dibbler at Jimbale in the Bunpkrugu Yunyoo District

Figure 12: 2017 GAPs and PHH training beneficiaries



Standard crop production protocols

A joint activity was undertaken with the Agricultural Technology Transfer (ATT) project to develop standard crop production protocols for maize, rice and soybean. The training manuals include: (i) lead farmer manuals (handbooks), (ii) A2-sized farmer posters (one per crop) and (iii) Trainer/extension flip charts, for training of farmers by ADVANCE Agricultural Productivity Officers (APOs), collaborating MoFA AEAs, and OBs' field agents.

These protocols serve as a guide in providing technical content for the dissemination of GAPs/PHH through collaborating radio stations as part of the project's ICT/outreach strategy.

6.2. PRE-SEASON AGRIBUSINESS FORUM

The ADVANCE project in collaboration with the National Seed Trade Association of Ghana (NASTAG) and the Agriculture Technology Transfer (ATT) organized the 7th Annual Northern Ghana Agricultural Pre-Season Planning and Networking Forum in Tamale in March 2017 under the theme “Northern Ghana – Open for Agricultural Investments”. This annual event brought together about 800 participants. Approximately 359 (41 females, 318 males) out of this number were ADVANCE actors along the maize, rice, soybean value chains across the four operational zones. Over 40 businesses in the value chain exhibited their goods and services at the event. The purpose of the event is to develop business linkages between value chain actors.

6.3. COMMUNITY INPUTS PROMOTION

Community Input promotions were organized in collaboration with Input Dealers, especially those who provided inputs for setting up the demonstration. The input promotions increase access to inputs by farmers in isolated communities. A total of \$64,298 (GHS265,425) worth of inputs (mostly seeds, herbicides and fertilizers) was purchased by farmers during the community inputs promotions, where agro-input dealers participate in field days and promote their products.

Table 20: Purchase resulting from Community Inputs Promotions

Inputs type	Quantity	Value (GHS)
Seeds	6,389.80 (Kg)	48,561.89
Fertilizers	4,569.73 (Kg)	188,339.23
Herbicides	1,961.85 (L)	28,568.95
Total		265,425.27

Input dealers and sponsors find the community input promotions as an opportunity not only to increase their sales, but also establish long term relations with OBs and communities which do not have easy access to input shops.

6.4. INPUT DEALER BUSINESS DEVELOPMENT PROGRAM

Forty-one (41) new input dealers were identified and profiled to work with the project. These input dealers were sensitized on strategies to, among others; improve accessibility to inputs during the cropping season, boost sales and expand community agents’ network. A Business Diagnostic Tool was administered to 22 input dealers to establish a baseline for developing their business plans while 13 were supported to develop business plans.

6.5. ICT OUTREACH AND PRODUCTION TECHNOLOGY DISSEMINATION

Radio Stations:

During the reporting period, the project continued to collaborate with 31 partner radio stations (2 new, Eagle in Walewale, Adwumapa in Sunyani and 29 old) to broadcast information on GAPs to beneficiary farmers. The project visited 18 out of the 31 partner stations in FY17. The project engaged 16 partner stations in the FAW radio campaign across the ADVANCE operational zones from May – September 2017. The campaign included broadcasting FAW awareness and preventive messages through radio jingles and Live Presenter Mentions (LPMs) in English and 10 different local Ghanaian languages.

Additionally, gender sensitization sessions were organized for radio partners and stakeholders across all operational regions to discuss the seasonal calendar, content and progress of the radio agricultural programs. The sessions were attended by 140 partners comprising of radio partners, MoFA officers, Environmental Protection Agency (EPA) officers, Ghana National Fire Service (GNFS), Input dealers, farmers and ADVANCE staff. Four agribusiness companies (Dizengoff, RMG, M&B seeds and Heritage Seeds) were contacted to sponsor for the radio programs, which they agreed to do with in-kind products.

“This is a very educative program, bringing all of us together on the same platform to deliberate on such important issues is very great. I have been enlightened by all that was discussed and want to use this opportunity to commend ADVANCE on all the good works they are doing for our farmers, especially their leading position on this Fall Army Worm outbreak. If all NGOs contribute like ADVANCE is doing, our country will be able to achieve a lot in the agric sector”.

~MoFA officer, Kintampo

"I listen to the campaign messages on ADARS FM almost 3 times every day. It has been so timely since and has prepared us towards the Warms as we have commenced our maize planting for the major in the Kintampo North. God bless ADVANCE”

Radio Listenership Groups

Radio listenership group activities continued meeting in their respective communities across the project operational areas. Farmers used this platform to educate themselves on good agronomic practices, available markets, prices for their produce and weather information among others. Farmers shared individual experiences in best practices to benefit other members during the radio listenership group meetings. They also participated in phone-in sessions of the agricultural programs to seek clarifications on issues they did not understand. 117 radio listenership groups were monitored in FY17. Members shared success stories from listenership activities during the monitoring. The group leader for “Nadari Kana” listenership group in Bussie, Upper West, Margaret had this to say about benefits of the listenership activities; *“it was through this meeting that we learnt about traditional and modern ways of storing produce. The modern ways help to store produce for at least 2 years. We also learnt about special sacks for packaging grains”.* Sensitization of at least 50% of Listenership groups is scheduled to take place in FY18.



Meeting with a listenership group in Bussie in the Upper West region



Meeting with the Suhyen Radio Listenership Group in Yinduri in Upper East

Voto Mobile

ADVANCE contracted Voto Mobile to disseminate agronomic tips and market price information to 20,000 project beneficiaries across the operational zones from June 2017 to March 2018. To date, 13,918 (including 7456 women) beneficiaries have received market information and 12,864 (including 6771 women) beneficiaries have received agronomic tips. The agronomic tips are disseminated through a Voice Messaging Service in 10 local languages while the market price information is shared through SMS. Voto Mobile successfully conducted the training of trainers (lead farmers, field agents, interns etc) to sensitize beneficiary farmers on the services, particularly on how to identify, access and use information sent through VMS & SMS on market and agronomic tips in all operational zones during the last quarter of the year under review.

The project is also working with AFGRI/JD and Voto Mobile to develop voice messages on basic tractor maintenance to be shared with OBs and their operators to improve on tractor operations and management. Furthermore, as mentioned in section B.2. ADVANCE and Voto Mobile are collaborating to support OBs to effectively communicate service provision and timeframes with their outgrowers through voice messages.

The project continued to partner with Grameen Foundation through a collaborative program aimed at providing extension services through Field Agents to OGs with the use of ICT tools such as Tablets, Portable Pico Projectors, Bluetooth speaker and SD Cards. Field Agents continued to deliver extension services to SHFs in their communities. During the period under review, two review meetings as well as the final refresher trainings for field agents were successfully completed in all regions. 127 (Females 5, Males 122) out of the 158 field agents participated in the first review meetings and the refresher trainings. Whereas, 74 (Females 5, Males 69) comprising of 26 OBs and 48 Field Agents participated in the second review meetings across three (Upper East and West, South) of ADVANCE's operational zones.

Additionally, 73 field agents were monitored and coached on the delivery of extension services to SHFs across all ADVANCE operational zones. Two new agents received training on weekly planning and reporting during the coaching session in Upper East Region. Some agents were tasked to mentor their colleague agents and to sensitize radio listenership groups under their OBs supervision. Remote technical assistance continued to be provided through the regional WhatsApp groups to field agents who needed assistance. All this support provided to field agents have contributed to over a thousand percent increase in the Agents' activities (from 608 at the end of December 2016 to about 7,649 (4,644 and 3,005 in ADVANCE North and South respectively) as at 30th of September 2017.



Field Agents being coached on their field activities in UER

Monitoring Field Agents' activities

Use of ICT tools to reduce risk through weather forecast

Esoko

ADVANCE continued to work with Esoko in the first quarter of the year under review, FY17. The seasonal forecasts and daily weather alerts from Esoko ended in December 2016, at the end of the crop season. During the year, 8,288 received the Esoko weather forecast messages. Weekly tips on GAP and PHH covering maize, rice, and soya uploaded to the Esoko platform were sent to beneficiaries during the period. Messages were sent to a total of 20,328 beneficiaries during the reporting period. The Agronomic tips from Esoko to beneficiaries continued until the end of March 2017. A survey to investigate how these messages impacted on the activities of beneficiaries was conducted in April.

"The Esoko text messages, we learnt a lot from them, all the farming activities, starting from ploughing, planting, applying fertilizer, spraying and rain patterns. We also learnt how to harvest, when to harvest and even storage, where and how to store our produce. Additionally, we were introduced to the right timing of inspecting our produce. They sometimes tell you, go and inspect your produce. We really benefit from the messages."

~ OB Suleman Ibn Alhassan, a beneficiary actor on the Esoko platform

Weather Alert by Farmerline

Climate change has influenced the window of the rainy season in the Savannah to be shorter and within the period, there were dry spells which caused reduction of the yield. Weather alerts helped farmers to make decisions on when to plant and when to apply pesticides effectively. The project started engaging with Farmerline Ltd. this year awarding the Ag. Service provider with a six months contract (July – December 2017) to provide Weather Forecast to 10,000 beneficiaries across all operational zones. Farmerline, together with USAID-ADVANCE successfully conducted the training of trainers (lead farmers, field agents, interns etc.) to sensitize beneficiary farmers on the service, particularly on how to identify, access and use Weather forecast sent through VMS in the farmers' preferred local dialects. A total of 238 actors (215 males, 23 females) were trained to go and train the 10,000 beneficiaries in their various communities. During the reporting period 7368 beneficiaries (including 2049 women) received weather forecast 5 times in a week.

6.6. INCREASED ACCESS TO INPUTS AND EQUIPMENT

During the year, ADVANCE facilitated 169 community inputs promotions with reported sales of GHS 265,425.27 (\$62,926.81). A total of 147 community inputs agents (all males) were supported by 52 input dealers. ADVANCE trained 19 of them (all males) and set them up on MTN mobile money to ease the transactions between them and the farmers.

Through these events, the project linked the OBs and their outgrowers to major input dealers and importers such as YARA, RMG, AFGRI Ghana, SOLANIKA, Sunshine, AFCOT, AMG, LDC, North Gate, Danaa Agro-Inputs and Best Foliar fertilizer. Farmers were also introduced to various agrochemical products and educated on safe and

"The community input promotion idea is very good, within two days I have made close to GHS 5,000 from the promotion and three people have already made a follow up to my shop to buy more agro-inputs, I am very happy and wish to thank ADVANCE for identifying me". Tang Gomda, a local input dealer in Karaga, Northern Region

effective use of these products. This empowered the OBs to make direct requests for all their future inputs requirements and equipment needs.

Furthermore, ADVANCE trained 17 input dealers on how to develop proper management systems including financial planning, records keeping, stock management, legal requirements to set up agro dealerships, costing and pricing, and marketing. The project also connected the participating input dealers to 138 community agents (all males) to serve as alternative sales channels to enhance the accessibility of inputs at the village level.

6.7. OUTGROWER BUSINESS MANAGEMENT

Outgrower Business Management Training

Outgrower businesses (OBs) are continuously trained on a seven module Out Grower Business Management curriculum aimed at supporting actors to operate efficiently and profitably by ADVANCE project's business services team. An eighth module is dedicated to female OBs and FBO leaders. The modules are;

1. Understanding value chain concepts, end market trends and how to operate and compete effectively.
2. Business planning and financial management
3. Outgrower management
4. Marketing, contracts and negotiating
5. Demonstration farm management and out grower extension services
6. Tractor operation and management
7. Post-harvest handling and storage
8. Women entrepreneurship and leadership

During the quarter under review, OBs were trained on 5 out of the 7 modules; 107 OBs were trained on Business and Financial Planning; 94 on outgrower management, 28 on demonstration farm management and outgrower extension; 236 trained on Tractor Operation and Management and 212 females OBs and FBO leaders trained on Women Entrepreneurship and Leadership.

To enable the BS team design better BDS support to OBs, ADVANCE continues to design and use a well thought out tool to rate and categorize the performance of these OBs and fill in gaps as they are identified, with one on one coaching, trainings and peer mentoring.

The parameters used for the categorization are;

- Access to end market linkage and development
- Service provision (inputs, ploughing, shelling, threshing)
- Records keeping system
- Accounting system
- Access to financial services
- Asset acquisition, utilization and management
- Hosting a demonstration plot.

This year 385 OBs (including 32 female OBs) were rated into respective categories;

- 85 were high performing

- 77 medium performing
- 223 low performing

Compared to 2016, 53 more OBs are have moved into the high performing category. This is as a result of the continuous training and peer mentoring programs especially in improved access to market linkages and development., records keeping and asset acquisition, utilization and management.

Field Management Program

As part of the field management program, ADVANCE trained 169 community field agents/lead farmers (160 males, 9 females) and 18 OBs (14 males, 4 females) on GAPs for maize, rice, and soya, including basic extension in Northern, Upper East, and Upper West Regions and in Kintampo.

OB Office Program

Following a process of professionalizing the image of Outgrower Business, the office program has been successfully used to achieve better management, keeping written records, which has improved repayment, and serves as a place to have meetings with their Field Agents, Buyers and business support. For that reason, new OBs were encouraged to set up small office units where they can manage their operations from. Thirty-three OBs set up small office units in their homes for this purpose. Nine outgrower businesses in ADVANCE South, who were granted laptops with a 3-in-1 printer/scanner/photocopier and power surges to enable them keep verifiable records that will help them make profitable business decisions were in the last quarter trained on how to use the sales tracker software.

A total of 72 student interns (including 18 females) from UDS, KNUST and UNER were trained and placed with 84 OBs in their communities, to support the OBs in records keeping on their service provision such as ploughing, tractor maintenance cost and tracking of inputs delivery to farmers. Also, these students will assist in tracking of service provision and delivery by trained Spraying Services Providers in these communities. The students who are mainly third year students also acquired skills and work experience on managing agribusinesses while gathering information to develop their final year dissertations.

An OB in the Northern Region has employed, full time, an intern placed with him during the 2016 production season. The student was engaged as his agent for supervising his outgrower operations in the communities.

Records keeping is a generalized weakness in OBs joining the program. With record keeping, a higher repayment is achieved as shown in previous years. As part of activities to continuously improve on the records keeping of their business, 107 OBs) were taken through records keeping systems to enable them put in-place good records keeping system. Some of the topics discussed during the training are:

- Type of records keeping system required for the successful operation of an Outgrower business.
- Type of records and information to be collected
- Identifying the possible users of these information
- The type of system to use in collecting, manage and process the information. (Computerized or manual).

6.8. BUSINESS DEVELOPMENT SERVICES

Farm Business Planning

Outgrower Businesses take time to develop. When ADVANCE starts working with a new OB, usually they just think of themselves as “farmers”, not business owners. Planning is not one of their annual activities, therefore the project teaches them how to plan their businesses on a yearly basis. In FY17, 29 new actors (including 2 females) had business plans developed with them while 17 (including 4 females) had their plans reviewed to reflect current business situations. The business plans guide the operations of the OBs to enhance their out-grower business management and to determine what financial services they will require through commercial credit or project grants. It also helps the project to allocate the best type of technical assistance to the OBs to achieve the various projections on different aspects of the OBs’ business operations. Another 46 OBs (36 males, 8 females) had the business diagnostic tool administered on them pending preparation of their four year strategic plans.

Again, 138 OBs (136 males, 2 females) had crop budgets developed with them to enable them plan and decide on how many acres to cultivate, number of outgrowers to support with available working capital, and the profitability of in-kind lending of inputs and tractor services to small holder farmers.

Outgrower Businesses (OBs) are continuously encouraged to register and legalise their operations with the Registrar General’s Department to enable them transact business with better established end markets and input suppliers.

Financial Services

With financial institutions

One of the biggest challenges faced by agriculture in many developing countries is access to finance. Ghana is not different and ADVANCE has worked with financial institutions (FIs) to provide funding to OBs’ to acquire production assets and inputs, which directly influence productivity.

A three-pronged approach has been adopted to improve access to finance:

- Encouraging OGs’ to make savings to invest in production inputs through the VSLA concept
- Promoting agricultural finance through tripartite arrangements involving buyers and Financial Institutions
- Linking OBs to FIs based on investment gaps

Village Savings and Loans Association (VSLA)

To strengthen relationships between the OBs and their outgrowers, outgrowers were encouraged to make their own savings to promptly pay for services and depend less on input credit, the project formed 500 new VSLAs in the period under review. The VSLAs have 12,425 outgrowers (3,935 males, 8,490 females) as members. The groups save between GHS1 (\$0.23) to GHS 10 (\$2.33) per share per week and a social fund contribution of GHS 0.20 (\$0.04) to GHS 0.50 (\$0.12) per person per week depending on the constitution adopted by the group.

With the new groups, the total number of VSLAs supported by the project increased to 826. All the groups were monitored during the share out of their savings this reporting period. The groups made total savings of GHS 2,223,324.50 (\$539,118.33) and 348 of them gave out loans amounting GHS 387,760 (\$90,587) to their members (Table 21).

Twelve of these groups made up of 875 members were linked to three financial institutions (Brong-Ahafo Catholic Co-operative Society for Development, Kintampo Rural Bank and GN Bank) to open group savings bank accounts. This will enable them save, earn interest on their savings (e.g. GN Bank is offering 9% on savings and a life insurance for each group member) and be financially included.



FBO VSLA share out

Farmer based organizations (FBOs) have also embraced the VSLA concept as a means of savings and getting loans for their farming activities. Through ADVANCE's facilitation, 80 FBOs were engaged in VSLAs across the intervention areas. They raised over GHS 200,000 (\$23,362) from which some of the FBOs purchased inputs for their members.

Table 21: Amount saved by VSLA groups per zone during the year:

Region	Number of groups	Amount saved GHS
Northern	412	1,065,645.50
Upper East	164	215,942
Upper West	150	581,353
ADV South	100	360,084
Total	826	2,223,324.50

Digital Finance

A total of 1658 actors (including 522 females): OBs/NFs, input dealers, aggregator and SHFs were sensitized by MTN and Vodafone officers on the benefits of digital financing. Nineteen were trained and signed on as MTN Merchants and six, as Vodafone Agents to provide Mobile Money Service to their outgrowers.

“The only way they could transact mobile money business was to send or receive it through the only Tamale bus which comes to our village once daily, which is risky, or you travel to Tamale just to give money to some body or receive money. With mobile money, we receive and send money and even service our neighboring communities. ADVANCE is great, Vodafone has even promised to improve upon our network. Thank you, ADVANCE,”

~Ibrahim Yakubu, Galwei in the Gushegu district

Additionally, 19 community input agents (all male) were set up on MTN Mobile Money to incorporate electronic money services into the business. Also, a total of 922 small holder farmers (including 336 females) were registered as mobile money subscribers on MTN and Vodafone. Actors continued to transact business using mobile money.



Figure 11: Vodafone cash and mobile phone sales promotion at Tamalgu in the Northern region



Figure 12: Staff of MTN registering some SHF at Agomo in the Bongo District

6.9. FARMER MENTORSHIP PROGRAM

The Farmer Mentorship Program was successful in previous years and continues to be an effective way to illustrate to “young” OBs on the proper way to manage an Outgrower Business. The mentor OBs coach emerging OBs on specific topics and practices. Twenty-two mentors coached 137 mentees (including 11 females) on the benefits of record keeping, keeping tractor records, maintaining and handling farm equipment and ensuring high repayment rates, among others.

Model Farms

There was significant increase in yield of OGs who applied technologies such as row planting, use of improve seeds, use of fertilizers, use of transplanting (for rice) and the use of mechanized land preparation disseminated through GAPs training taught by officials of the project during the 2015 production season. For maize farmers, application of improved seed, fertilizers, row planting and mechanical land preparation resulted in a 30%, 36%, 21% and 18% increase in yield respectively. However, there were concerns that some OBs themselves, who are not only commercial farmers but also leaders in the communities, did not adopt GAPs nor technology in adequate rates on their own farms to increase efficiency and productivity. Therefore, they could not be the role models to the OGs in championing the adoption of GAPs.

To tackle this, the concept of Model Farms was introduced during the 2016 cropping season. Several OBs bought into the idea, and made efforts in improving technology adoption in the following: good land preparation, appropriate plant density, planting mechanization, appropriate fertilizer rates and application.

In spite of their efforts, none of them used a full package to output a partial model farm and the final results fell below expectation. To ensure success in 2017, USAID-ADVANCE joined forces with John Deere, Afgri Ghana and Yara Ghana, to bring in the know-how these transnationals have acquired in other African countries. The target was to set up 12 Model Farms in five regions. Full mechanization and appropriate crop nutrition were put in place in these 12 locations with 120 acres in total. Ten out of the 12 model farms obtained the expected results with average yield of at least 5 MT/ha on a total of 42 ha despite challenges like the FAW.



Model farm in Sung, NR during Field Day organized to share results with 40 OBs



Model farm in Chuchuliga, in the Upper East Region

Policy field day- visiting Model Farms

ADVANCE organized a field day to introduce two model farms to the MoFA Regional technical teams in the Ashanti and Brong Ahafo regions. The MoFA teams comprised of the Regional Directors of Agriculture and their respective Regional officers for Agric. Engineering, Crops, Agric. Extension and Plant Protection & Regulatory services. The technical team observed that ADVANCE was promoting the value chain approach and climate smart agriculture – which were in line with

“I have had about 29 years in the Ministry and today I am impressed because for a long time I have felt the need for us to look at how our soils are managed and it is today I am seeing my desire come to fulfilment. I am happy to see an effort directed at the looking at what I have seen today. I will be following up on this. I urge ADVANCE to improve relationship with MoFA and to share with us the final results of what we have seen today

~ Regional Crops Officer for Ashanti



ADVANCE COP interacts with MoFA technical officers on the model farms

the Government of Ghana’s current policies. They were also happy with the project’s emphasis on ripping. The officers from MOFA observed the importance of ripping in soil moisture conservation to enhance crop growth and stated the need for Government’s support in the activity.

The MoFA team called for deepening of collaboration between the project and MoFA particularly at the Regional and District Departments of Agriculture.

6.10. CLIMATE SMART AGRICULTURE

The objective of the ADVANCE climate smart agriculture program is to increase awareness and adoption of climate smart practices among farmers and ultimately enhance productivity and income, make cropping systems more resilient to climate change and contribute to mitigating impact of climate change. The strategy has three focal areas: minimum tillage, cover crop systems and agroforestry. With two years of trials and demos, the terrain was prepared to scale up minimum-tillage significantly.

a. Minimum tillage

The project used demonstration plots, model farms, and planting basins to train farmers on the benefits of minimum tillage. The project also took records of farmers who adopted minimum tillage practices on their farms. Over 450 acres of farm land was prepared using minimum tillage technologies. Table 22 below provides a breakdown of the acreages of farmland that was prepared using minimum tillage technologies.

Table 22: Minimum tillage statistics for 2017

Type of field	Number of acres				Total acreages
	Northern	Upper East	Upper West	South	
Demonstration	2	3.46	1.875	5.75	9.625
Model Farm	30	25	31.2	18.7	79.9
OB Farms	61	122.5	90	106	257
OG Farms	26	36	9	68.5	103.5
No till farms	0	0	0	4.625	4.625
Planting basins	0	0	1.875	0	1.875
Cover crops	0	0.125	0	0	0
Grand Total	119	187.085	133.95	203.575	456.525

Planting basins are an alternative for SHF in isolated areas who do not get land preparation services. The technology, while manual, reduces the risk of climate change too and proved better than ploughing.

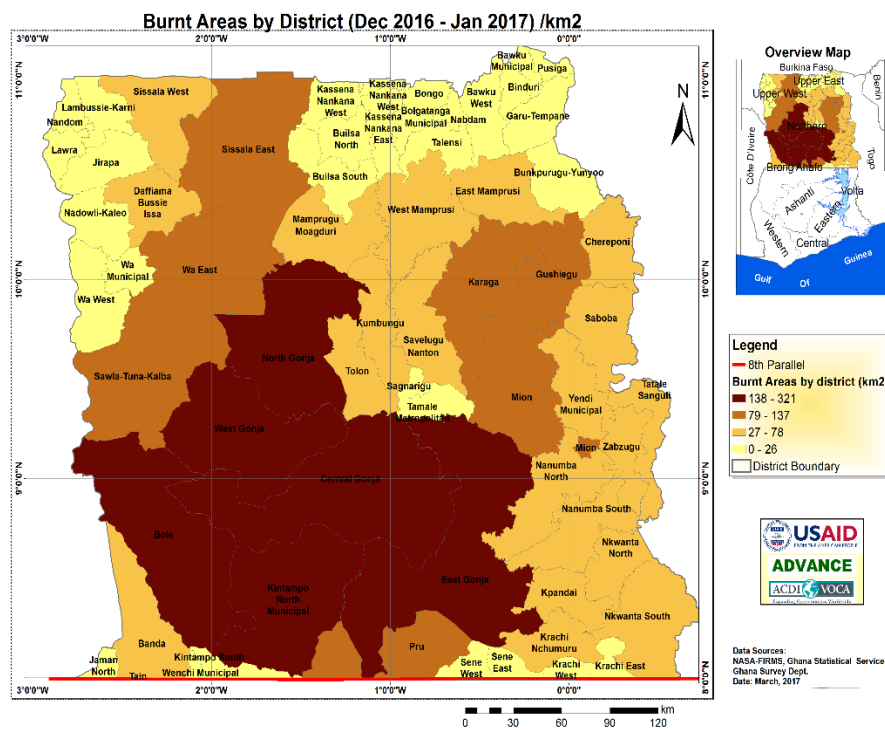
b. Rice systems

Rice farmers in irrigated areas produce large amounts of straw that is simply burnt away or just left to waste. The same happens to rice bran produced by rice mills. To change this practice, and to ensure that rice by-products are put to beneficial use, the project started working with two OBs (Enoch Akisiba and Sambay Enterprise) in the Upper East Region to turn rice by-products into compost and mushroom substrates. The use of compost should progressively improve soil structure with all consequent benefits on water retention, nutrient availability, enhanced root development and overall fertility potential, translating in increased production.

Mushroom production should convert in immediate increased cash availability for further investment in rice milling and household income, as well as in supporting more mushroom production. Seventy-five (51 females, 24 males) outgrowers in Chuchuliga, were trained on the use of rice by-products for composting and how to integrate it into rice fields.

c. Campaign against bushfires

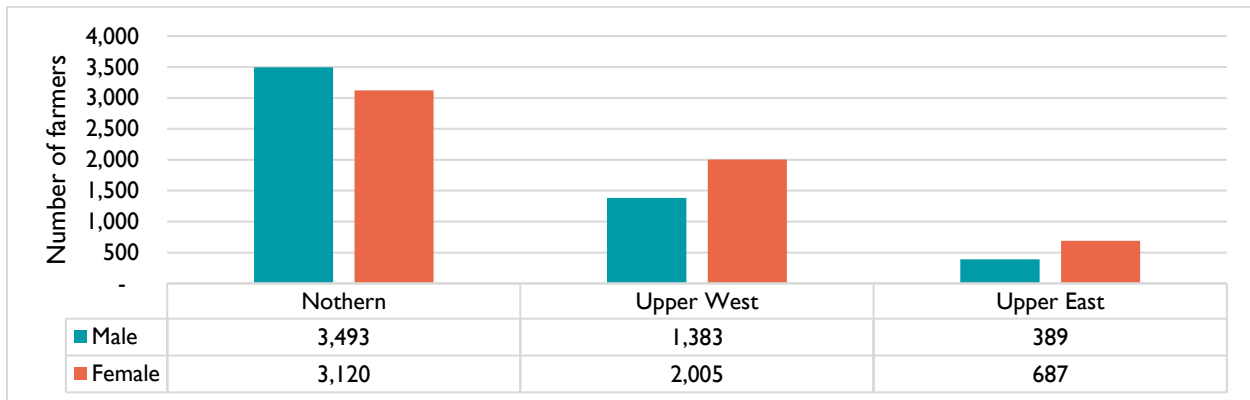
Annual bushfires that occur across the Savannah landscape are a threat to farms and farm produce, and negatively impact the soil and environment. Fires reduce the amount of biomass that return to the soil as organic matter, making soils progressively poorer. To overcome this challenge, the project embarked on an anti-bushfire campaign for a third year using radio jingles, field days, community durbars, and posters to educate farmers on the effects of bushfires on agriculture and soils in particular, and simple measures that farmers should employ to prevent or manage bushfires. These activities were carried out in collaboration with the EPA, MOFA, Ghana National Fire Service and the Information Services Department.



As part of efforts to implement climate smart agriculture strategies to help farmers adjust to the threat of climate change, anti-bushfire radio jingle campaigns were developed, and 11 radio partner stations were contracted to air the jingles in nine different local languages across the project’s operational zones. The selected radio stations for this campaign included North Star FM, Radio Gaakii and Zaa FM in Northern Region; URA Radio, Radio Builsa and Quality FM in Upper East Region; Radford Radio and W93.5 FM in Upper West Region; Radio BAR, ASTA FM and ADARS FM in the South. Some of the stations ended the campaign in December while others ended it in January 2017. The radio messages are intended to reach direct project beneficiaries as well as the general public. Radio jingles played on eight of the radio stations were estimated to have reached 3,190,000 listeners.

As part of the No-Burn campaign activities, the project conducted sensitization activities during the GAP training field days in Northern Ghana, reaching 11,077 farmers with regional and gender breakdown as shown in Figure 13.

Figure 13: Number of farmers reached during field day anti-bushfire campaigns



Furthermore, 16 large banners and 570 posters with “No Burn” messages were designed and deployed at vantage points in all four regional zones as part of the campaign to raise awareness.

Another piece of the campaign, community durbars, were also held in eight communities and reached approximately 1,600 community members directly. In attendance were SHFs, OBs, NFs, officials from MoFA, Ghana National Fire Service, World Vision, EPA, the Media, Chiefs, and opinion leaders who gathered in the various communities to join forces to raise awareness about the harmful nature of bushfires. Officials from these organizations delivered messages highlighting the causes, control and devastating effects of bushfires and the need to conserve the fertility of our soils to increase food production. Various media houses, including North Star Radio, ASTA FM, URA Radio and Radio Upper West covered these events.

“Today’s No Burn campaign has been an eye opener, since this is my first time of attending such an event. I will take this opportunity to thank ADVANCE for organizing such an event to educate my compatriots on the dangers and effects of bush burning. I personally have resolved not to burn a single grass and I will communicate this to my fellow Fulanis to say NO to bush burning”. Bussie Fulani Chief, Alamesa Santa



Anti-Bushfire Community Durbar at Gburiman in the Northern Region



Anti-Bushfire Community Durbar at Bussie in the Upper West Region

6.11. NUTRITION SENSITIVE AGRICULTURE

During the year under review, the project collaborated with the Directorate of Women in Agricultural Development (WIAD) at MoFA to undertake nutrition education and training on soybean utilization, especially to women. The aim was to improve the nutritional status and food security of their households. Outgrower businesses(OBs) and their smallholder farmers supported the project with soybeans and maize for the cooking demonstrations. In total, 8,182 smallholder farmers (7,463 female, 719 males) were trained across the three regions of the North.



The farmers were taught how to process soybean into quality and nutritious flour, and the ease with which it blended with different local recipes. They learned how to prepare four different dishes (Tubani, soy porridge, soy milk and Aprapansa). Smallholder farmers and OBs impressions on the training is captured in the box below:

" Now that we have been taught how to incorporate soybeans into our dishes, we will grow more soybeans" ~ Lydia Langa

"The soy bean utilization training will help reduce consumption of maize in my home. Previously, my family and I consume 1.2 MT of maize per annum. After this training, I know the consumption rate of maize will reduce as we are hence going to incorporate soy into our everyday diets. We are grateful to ADVANCE for the teaching us how to eat soybeans" ~ Abukari Shaibu with beaming smiles

" For what I have seen and observed with my small holder farmers, this training is not for women alone! I will be supporting 50 women this season to produce soybean on an acre each. I will start processing soy milk for sale in the local community to diverse my source of income" ~Ben Awuni

6.12. FALL ARMY WORM CONTROL

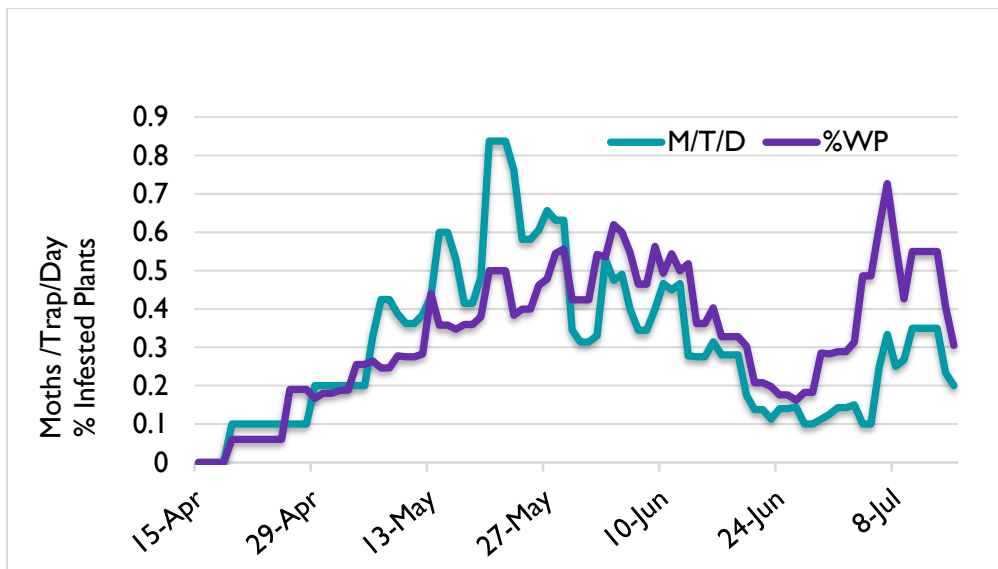
The Fall Army Worm (FAW) control was not captured in the work plan for FY17 but has become an important part of the FY17 activities due to an outbreak of FAW. When farmers encounter new or unfamiliar pest problems they need support. Such is the case with the outbreak of the fall armyworm in Ghana. To help farmers deal with this new phenomenon, the following activities were carried out:

a. Establishment of a surveillance at national level

Fifty-nine heliothids traps were mounted, with fall armyworm lures in 59 locations covering the entire country to monitor prevalence of fall armyworm. Data was compiled and analyzed from 27 locations covering the 5 operational Regions of the Project while we continue to collect data from 32 other locations. The monitoring system served as an early warning system to alert farmers to scout their farms for early signs of the worms and take appropriate actions when moths are detected in the traps. Moth counts from pheromone traps were complemented by standard field scouting to determined presence and levels of infestation.

Two model farms located in Adidwan and Ahyiem in the Ashanti and Brong-Ahafo Regions respectively were effectively saved from FAW infestations through this monitoring and scouting system which provided timely information for early action. We noticed a positive relation between number of moths captured and levels of field infestations using percentage of window panes (WP)⁶ as a measure of infestation. Figure 14 below shows the trend of moth counts and infestations for the major season in Ashanti and Brong-Ahafo Regions between April and July 2017.

Figure 14: Comparing moth counts and field infestations in ADVANCE South during the 2017 year



⁶ WP – Window Panes are small holes created at the edges of leaves by FAW during the early stages of infestation

b. Training of Agricultural Extension Professionals

In April 2017, a hundred and twenty (120) Agric Extension Professionals made of Extension Agents, Plant Protection Officers, MoFA Regional and District Directors, private sector players and NGOs were trained on the two important topics for FAW control.

1. Biology, Population Dynamics, and Armyworm Control
2. Monitoring with Pheromone Traps, Field Scouting, and Early Detection

Following these trainings, 102 Agric Extension Agents, 2 NADMO staff and 8 OBs benefited from practical field demonstration of standard field scouting for FAW and applying the data to decision making to control the FAW.

c. Education and awareness creation

As parts of efforts to prevent, monitor and control the infestation of the FAW outbreak in ADVANCE operational zones and the nation, ADVANCE in collaboration with Farmer to Farmer Program, media partners, MoFA, Farm Radio International, the FAW National Task Force and many other organizations created awareness to farmers and the general public about FAW. The ADVANCE project organized a two-day training on monitoring and scouting on FAW for stakeholders including MoFA officers and AEAs, Media houses, ADVANCE OBs and SHFs ADRA, AgNRM, CABI, FRI, ACDEP, etc in Tamale. A total of 170 partners (Male 148, Female 22) participated in the training. During the training, participants were taught how to set up and maintain traps with pheromone, how to scout maize fields for FAW infestation, and how to apply appropriate insecticides using FAW action thresholds and their rotation to avoid development of resistance.

Messages on the presence of Fall Army Worm were drafted, produced into jingles and aired on 16 partner stations in English and 10 local Ghanaian languages to create awareness and prevention of the FAW outbreak. The messages and jingles were shared with the FAW National Task Force to be used for the national awareness campaign across the 10 regions in Ghana. Pictorial FAW posters were distributed to both intended and unintended beneficiaries in all the 4 operational zones to help in the FAW awareness creation.

To increase FAW awareness among beneficiaries, the project set up mobile hotlines in June 2017 for both in-bound and out-bound calls and two interns were employed and trained by the environmental specialist to manage the center. The hotlines have recorded a total of 411 in-bound calls as of 30th September, with prevalence status of reported cases ranging from mild to very severe cases. All 411 callers had either received training or seen pictorial posters/head radio, however, only 68 out of the 411 has already acted as at the time of the call. The remaining 343 did not take any action but were advised on the appropriate actions to take. There was FAW sensitization in every ADVANCE training to farmers and stakeholders since the beginning of the FAW campaign in all operational zones. The table below shows the breakdown of prevalence by region.

Table 23: Phone calls to FAW call center to report cases

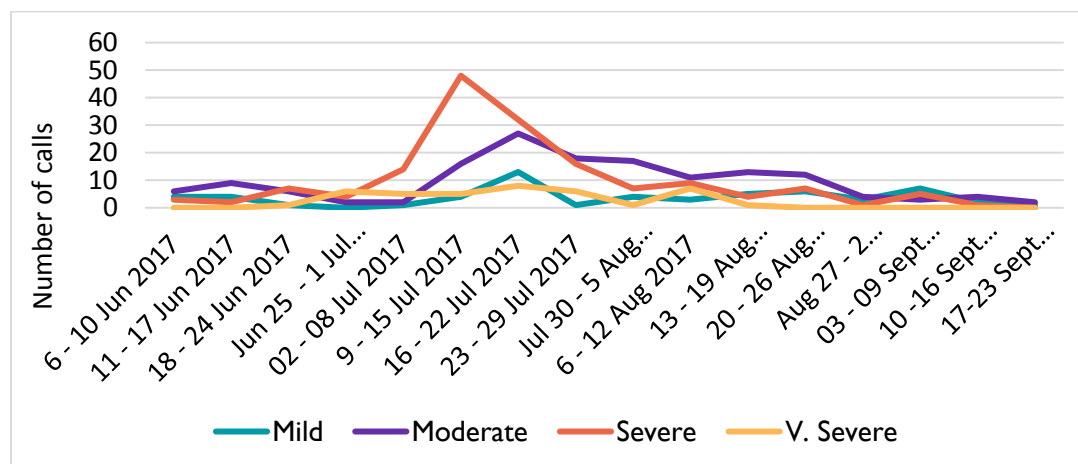
Region	Mild	Moderate	Severe	Very Severe	Total
Ashanti	2	1	2	0	5
Brong Ahafo	19	19	15	4	57
Eastern	1	0	0	0	1
Greater Accra	1	0	0	0	1
Northern	18	80	71	23	192
Upper East	8	22	28	4	62
Upper West	11	29	44	9	93
Total	60	151	160	40	411

d. Support to farmers through a Call Center

The three hotlines provided on FAW posters and FAW radio jingles for farmers to call in for technical advice on FAW control, between June 6th and September 23rd, 2017 registered 411 calls from 393 male farmers and 18 female farmers. The team provided technical advice to farmers and collected important data from the callers to inform planning. This included location of the farmer, stage of crop at time of call, size of farm and severity of infestation, and whether the caller has seen the posters. Below are some of the trends from the call center information that will inform planning for the future.

Trend: The data showed that July recorded the highest number of call. Most of the cases were moderate to severe.

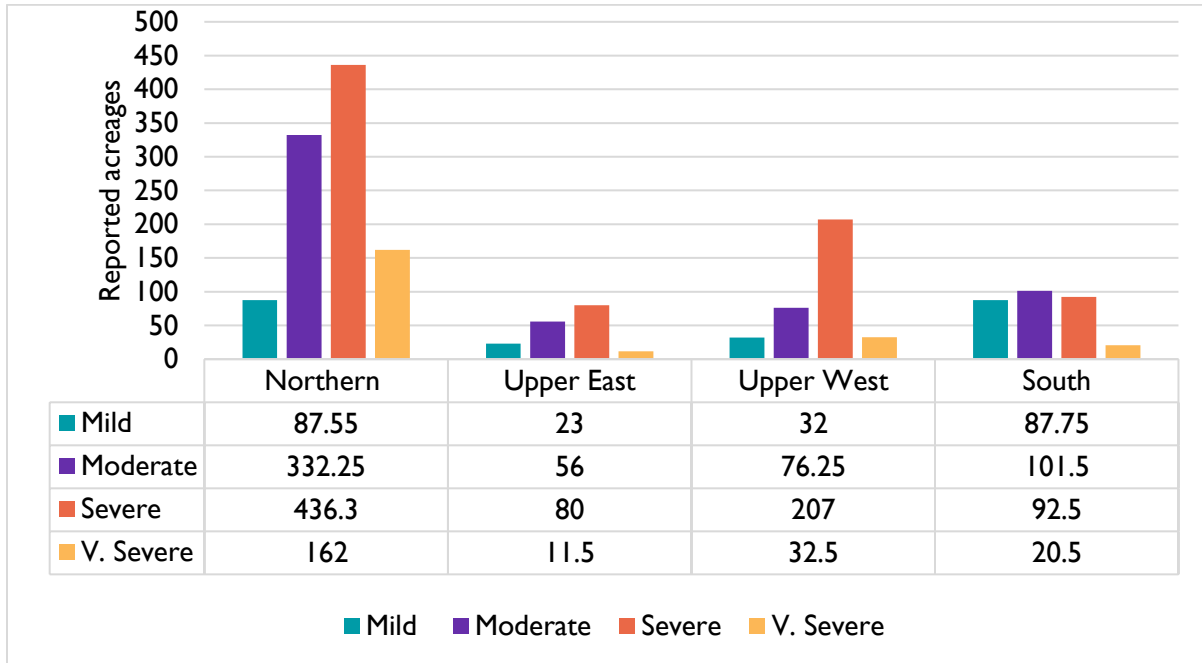
Figure 15: Chart showing severity of FAW cases reported between June and September 2017



Reported acreages:

From the phone call data, Northern and Upper West Regions reported the highest infestation with FAW while the Upper East Region reported the least.

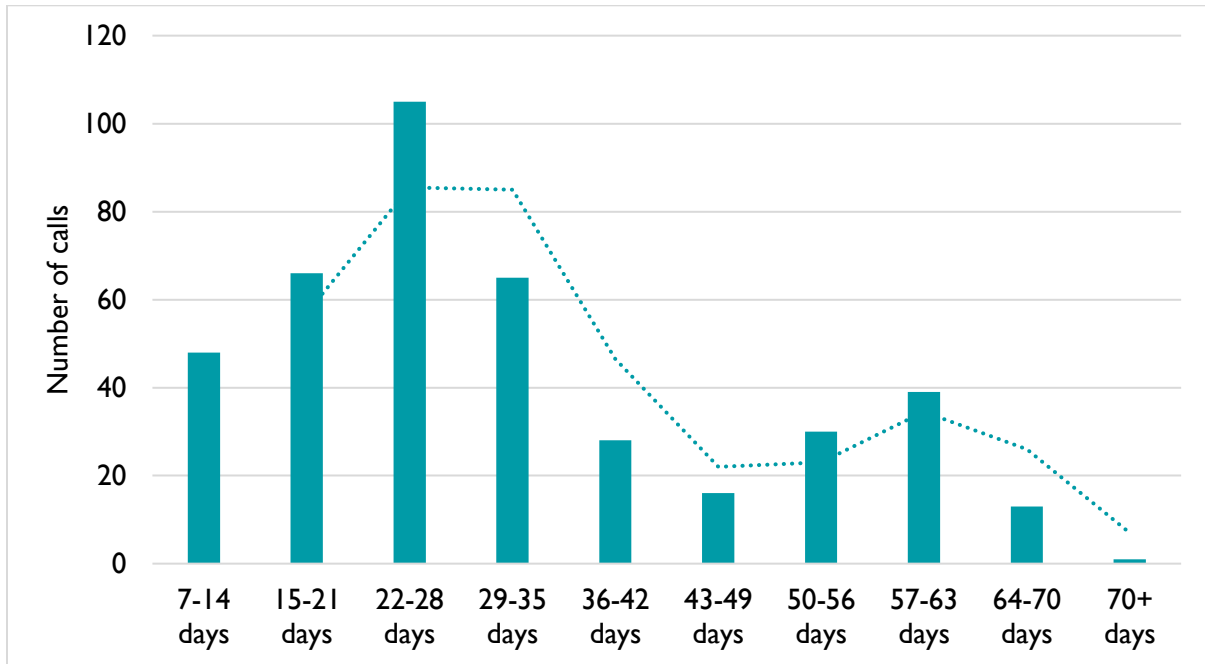
Figure 16: Reported acreages affected with FAW by zones and severity



Stage of crop at time of call

Most cases were reported by farmers when crops were between the 2nd week to 5th week after planting. The number of reported cases gradually decreased when crop growth was between the 5th to the 7th week before it started to rise again. The rise in reported cases again from the 8th week is likely due to a single application of insecticides without a follow-up application.

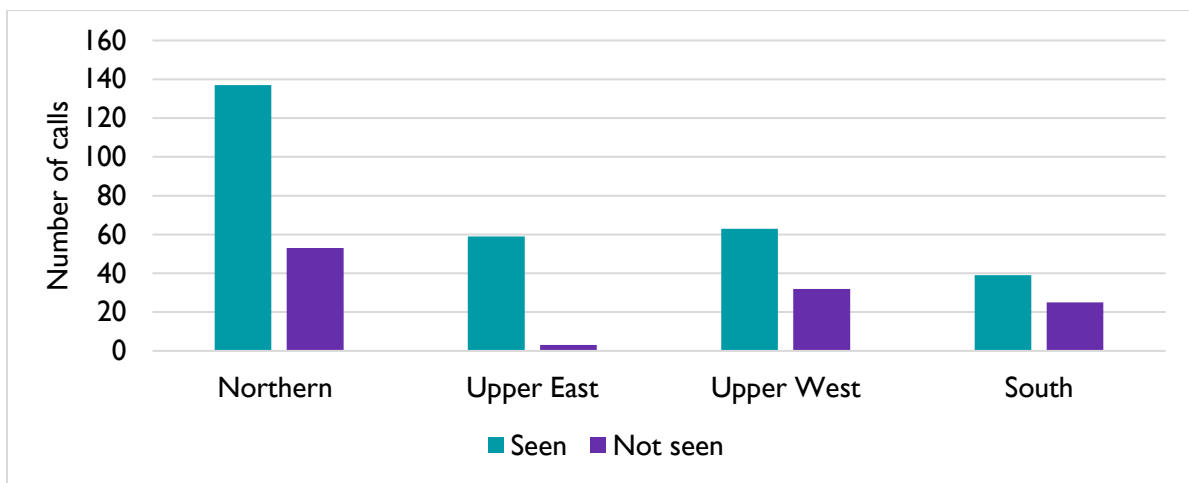
Figure 17: Number of reported FAW cases according to crop growth



Poster visibility:

More farmers reported having seen the posters on FAW than farmers who reported haven't seen. Poster visibility was highest in Upper East Region and lowest in the South comparatively.

Figure 18: Poster visibility per zone



7.0. Sub-purpose 2: Increased Market Access and Trade of Targeted Commodities

This reporting year, under sub-purpose 2, the project continued with the following strategies

- Developing market linkages between OBs and large buyers (mainly large aggregators and processors)
- Reinforcing lead firms' competitiveness
- Supporting trade associations
- Strengthening community based marketing

7.1. MARKET LINKAGE DEVELOPMENT

New buyers identified

With the increase of productivity achieved in the first three years of the project, which the T&M team had anticipated, new buyers had to be identified to ensure the additional production had a market for it. Without the new market linkages, the achievements in production would not catalysed improvements in the livelihoods of farmers. Eleven new buyers were identified during the year.

Their annual purchase requirement for 2017 is 38,100 MT of maize; 27,800 MT of paddy; and 14,000 MT of soybean. All the buyers, except Agrocenta and Naason Agro, already have relationships with farmers in the ADVANCE area of operation. They are however interested in working with the ADVANCE program to deepen these relationships as well as build new ones.

Table 24: New Buyers identified in 2017

Firm Name	Region of Buyer	Firm Type	Purchase Requirement for 2017 (MT)		
			Maize	Paddy Rice	Soy
Agrocenta	Greater Accra	Aggregator	3,600		
Agrisolve Co.	Greater Accra	Aggregator	10,000		10,000
Amfani Royal Co.	Northern	Aggregator	500	1,700	1,000
Tampuri Grains Co.	Northern	Aggregator	20,000	25,000	2,000
Oseboba	Greater Accra	Processor – Foods	1,000		
U3 AgriNet	Northern	Aggregator	500	200	100
Savanna Foods Empire	Upper West	Processor Soy Mill			800
H. Rukaya Enterprise	Northern	Aggregator		600	
Naason Agro	Greater Accra	Aggregator	2000		
Abiba Mohammed	Northern	Aggregator	400	300	
Dream Consult and Supplies	Northern	Food Processor	100		100
Annual Purchase Requirement for 2017			38,100	27,800	14,000

Two-way trade missions

To strengthen market linkages, ADVANCE facilitated visits for interested buyers to meet OBs. Within the reporting year, the project supported visits from Buyers to OBs in the north, and facilitated OBs visit to buyers to understand requirements of the buyer and processors. The visits proved very positive in promoting long term relations as both parties have agreement on quality expectations. Twenty – four trade missions were facilitated for 14 buyers and 195 OBs (including 2 females) during the year.

Table 25: Trade Missions Facilitated

Buyer Name	Location of Buyer	No. of Trade Missions	No. of Participating OBs	Regional Coverage of OBs	Commodity
Agricare	Kumasi	5	94	South and North Ghana	Maize
Agrisolve	Accra	1	7	Northern Region	Maize and Soy
Agrocenta	Accra	1	2	South	Maize
AVNASH / Shinkafa Buni	Tamale	3	46	Northern, Upper East, Upper West	Paddy
E-GABS GH	Sunyani	2	5	Northern and Upper East	Soy
Ejura -Aframso Rice Millers Group	Aframso	1	1	Northern	Paddy
Naasons Agro Company	Accra	1	1	Upper West	Maize
Nestle	Accra	3	21	Northern and Upper East	Maize
Premium Foods	Kumasi	1	4	Northern	Maize
Regis Commodities	Accra	1	2	South	Maize
Rosemary Atindema	Kumasi	1	1	Upper East	Paddy
Royal Danemarc	Kumasi	1	5	Northern	Soy
Sahel Grain	Techiman	2	2	Upper West	Maize
Sumaila A. Zakaria	Kumasi	1	4	Upper East	Paddy
Grand Total		24	195		

- Agricare Ltd hosted two farmers from the Upper West region on two different occasions at its premises in Kumasi in January 2017. It subsequently held three meetings with different groups of farmers in Techiman, Tamale and Bolga to discuss the details of their outgrower support for 2017 and related issues.
- AVNASH Industries hosted farmers from the Northern, Upper East and Upper West regions at their factory in Nyankpala to discuss their purchasing requirements and details of their farmer outgrower scheme. This trade mission was a follow up on two other trade missions facilitated for the firm to meet ADVANCE farmers in the Northern and Upper East regions.
- Sahel Grains of Techiman visited the Upper West region twice in October 2016 to meet with two different OBs. It provided a sheller and tractor to OB Yahaya Moro on a one-month lease; and tractor and plough to OB John Mulnye on a one-year lease basis.
- E-GABS met with five farmers, two from the Upper East region and three from the Northern region, to understand their challenges and ascertain opportunities to build a sustainable relationship for the supply of soy. The firm provided financing to an OB to hire ploughing services to be paid back in soy at harvest.
- Naasons Agro Company visited the Upper West region and agreed to purchase 100MT of maize per month from the Sissala West FBO and Mekeballey Enterprise, an OB.

- The Procurement Manager and Agricultural Raw Materials of Nestle Central and West Africa (CWA) visited the Northern and Upper East regions in November 2016 to meet with 5 OBs to discuss maize supplies, quality requirements and indicative contracting terms. Nestle also used the trip to assess the storage facilities of the OBs. Three of the OBs from the Northern region were eventually selected to participate in Nestle’s grain supplier development program.



Nestle Procurement Manager inspecting the newly constructed warehouse¹ of Kha-ma Farms in Karaga in the Northern Region



ADVANCE OBs touring AVNASH rice mill in Nyankpala

Contract Facilitation

Two hundred and forty-one contracts covering 15,795 MT of maize, paddy and soy valued at \$4,385,359.84 (GHS 18,694,789) was facilitated directly by the project between 28 buyers and 171 OBs and farmer groups during the period.

Table 26: Contracts Facilitated

Type of Contract	Number of Contracts	Contract Volume (Mt)	Contract Value (GHS)
Closed Contracts	27	4,147	5,453,622
Closed Sale without Formal Contract	37	3,061	3,875,891
Outgrower Contract	140	6,133	6,765,956
Purchase and Supply Agreements	37	2,454	2,599,320
Grand Total	241	15,795	18,694,789

The above contracts arose out of new business relationships between OBs and buyers. Beyond the ADVANCE facilitated contracts, OBs and buyers in existing relationships are entering into contracts and executing trades on their own using the skills and experience gained from previous market linkage facilitation and training provided by the project. The significant ones are listed below:

Table 27: OB initiated contracts

Name of OB	Name of Buyer	Volume of Goods (Mt)	Contract Value (GHS)
Biu Cooperative	AVNASH / Shinkafa Buni	72	91,440
Amachaaba FBO	AVNASH / Shinkafa Buni	60	76,680
Asatichaaba	CCH Commodities	43	55,510
Total		175	223,630

Collaboration with Nestle Ghana on Supply Chain Development and Food Safety Improvement

The following intermediate results were accomplished under the collaboration started with Nestle Ghana in December 2016 to develop its maize supply chain to Northern Ghana, and expand access for ADVANCE OBs to high end food processors.

- Three OBs (Kha-ma Farms in Karaga, Kukobila Nasia Farms in and Gundaa Produce Company in Tamale) were selected by Nestle to participate in the program and subsequently registered as certified suppliers
- 1,729 smallholder maize farmers (including 954 females) linked to the three selected OBs were trained on mycotoxin control and management using training material provided by Nestle
- The OBs and their agents visited the factory of Nestle in Tema to understand the company's production, quality and food safety requirements
- Two of the OBs were issued with purchase orders of 180MT by Nestle at a premium price. They have applied the quality control measures required by Nestle, and have since shown a marked improvement in maize quality from laboratory tests⁷.



Nestle Agricultural project team inspecting maize of Kukobila Nasia Farms in the warehouse in Kukobila

⁷ Kha-ma Farms passed Nestle's requirements for Aflatoxin B/G (max 4 ppb), Aluminium (max 15 ppm) and Ochratoxin A (max 0.5 ppb). However it could not attain the requirement of Fumonisin of 500ppb.

Transport linkages

ADVANCE collaborated with the cargo branches of GPRTU and PROTOA in various districts of its operational area to publish and update cargo transport fares from various market centres to buyer destinations, to assist farmers and buyers requiring transport.

Representatives of the two transport unions were sponsored to attend the 6th Annual Pre-harvest Event organized in Sunyani in October 2016. They met and established relationship with actors who required transport services within their operational areas.

Training of farmers in produce quality requirements and standards

The project trained 38,889 smallholder farmers (Females 19,015, Males 19,874) on grain quality requirements and standards. This training was based on the Ghana national standards on quality and grading for maize⁸ and soybean⁹. During the training sessions farmers identified acts and circumstances that lead to bad quality produce; and agreed actions to improve quality to meet market requirements.

Table 28: Number of Smallholders Trained on Grain Quality Standards

Operational Area	Number
Northern Region	16,390
Kintampo North	1,895
Upper West Region	14,740
Upper East Region	957
South (Ashanti, Brong-Ahafo)	4,907
Total	38,889

6th Annual Pre-Harvest Agribusiness Event, 2016

The Sixth Annual Pre-Harvest Agribusiness Event was held for the first time in Sunyani on Thursday, October 20, 2016 under the theme “Profiting Together”. The event was hosted by the Ghana Grains Council (GGC) with support from ADVANCE.

“Though my first time of participating in the program, I got the opportunity to build relationships with farmers in the Northern region and processors in the South, who intend to do business with us. I told them to contact ADVANCE for our transport fare charts which I wish next time is printed and carried to the program to share with actors”

~Ibrahim Jafaru – Cargo and Articulator Branch of GPRTU, Tamale

⁸ Ghana Standards Authority GSS 211: 2013: Specification for Maize

⁹ Ghana Standards Authority GSS 1039: 2013: Specification for Soybeans



Opening ceremony of 2016 Pre-harvest event

The event attracted 779 registered participants (including 152 women farmers) including farmers, buyers, processors, transporters, input dealers, farm machinery dealers and financial institutions. It provided a platform for farmers to establish business relationships and discuss contracts for the 2016 harvest of maize, rice and soybean.

The event was used to begin a collaboration with the School of Agriculture and Technology of the University of Energy and Natural



Exhibition grounds of 2016 Pre-harvest event

Resources (UENR) based in Sunyani and Dormaa Ahenkora. The school provided 15 students to assist organize the event.

Highlights of an evaluation conducted by a joint team from UDS and UENR involving a random sample of 159 participants and 21 exhibitors indicated that:

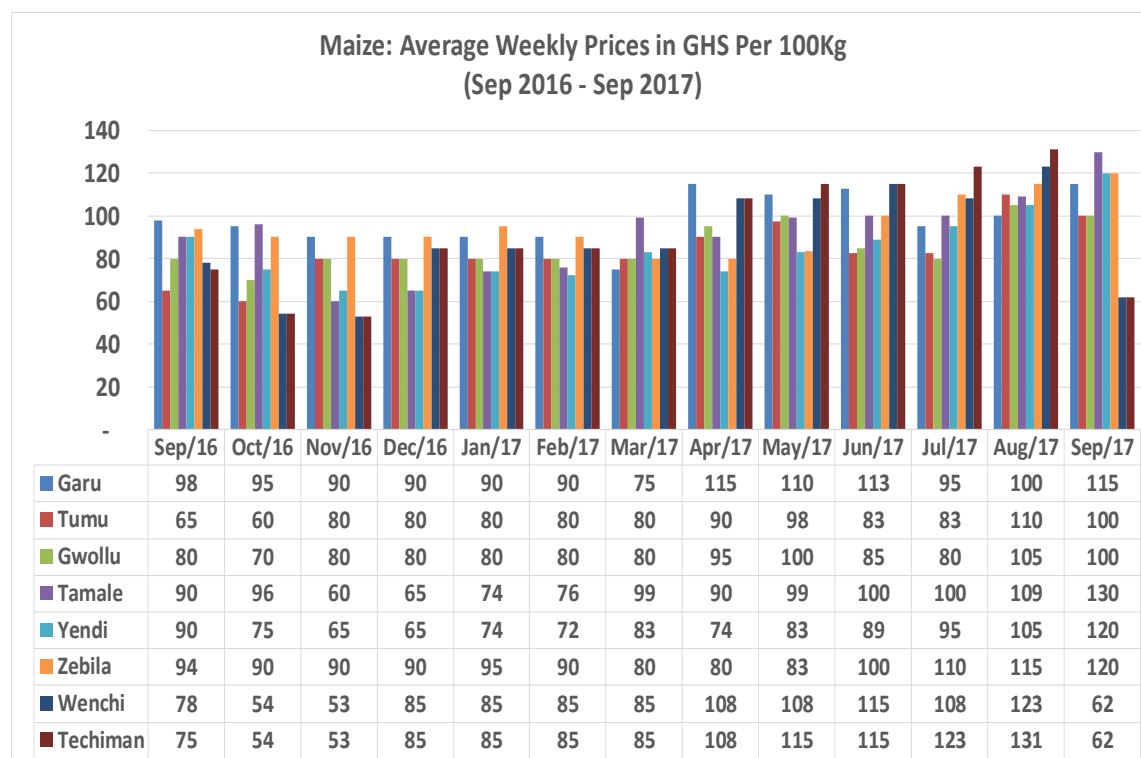
- 40% of participants were first time attendees, and 19% had participated in four or more previous events
- 9 out of 21 exhibitors (43%) had participated in a previous event
- 23% of participants rated the event as excellent and 55% rated it as good
- 21% of exhibitors rated the event as excellent and 68% rated it as good
- The most useful activity for participants was the market place (40%), followed by networking (35%), and the exhibition (23%)
- 76% of participants and 86% of exhibitors want the event to be organized again next year
- 79 out of 98 participants (81%) and 8 out of 9 exhibitors (89%) who attended either the October 2015 event in Tamale and March 2016 event in Kumasi made business deals from those events

In this section, we report developments from the key markets monitored by ADVANCE.

Maize

On average, year on year maize prices increased by 21% using September 2016 as a base year.

Figure 19: Average Weekly Maize Prices from Selected Markets



Source: ADVANCE market monitoring

In the South, prices of maize were quite stable around October/November 2016. However, farmers' low harvest due to the fall army worm infestation pushed prices up in December as stocks decreased. Prices further increased from April 2017 to August 2017 as demand for well dried maize outweighed available supplies. Prices declined sharply in September 2017 with new maize from the major season harvest entering the market, and the stock out of old maize.

In general, Northern prices continue their upward trend from February 2017 to September 2017 due to the lower volumes of produce available for sale and the purchasing by caterers for school feeding activities creating an increase in demand in most markets.

The severe Fall Army Worm (FAW) infestation in Southern Ghana in the 2016 production season affected the supply of maize in the maize belt and shifted the attention of maize buyers including poultry farmers to source from the North, resulting in a rise in demand and prices in Northern markets.

Due to the FAW infestation of farms in the Northern region this 2017 farming season, buyers and aggregators in the region anticipating a poor harvest for the 2017/18 season increased buying of maize

leading to price rises. The perennial preference for maize from the North because of its dryness also accounted for the rise in prices between July and September 2017.

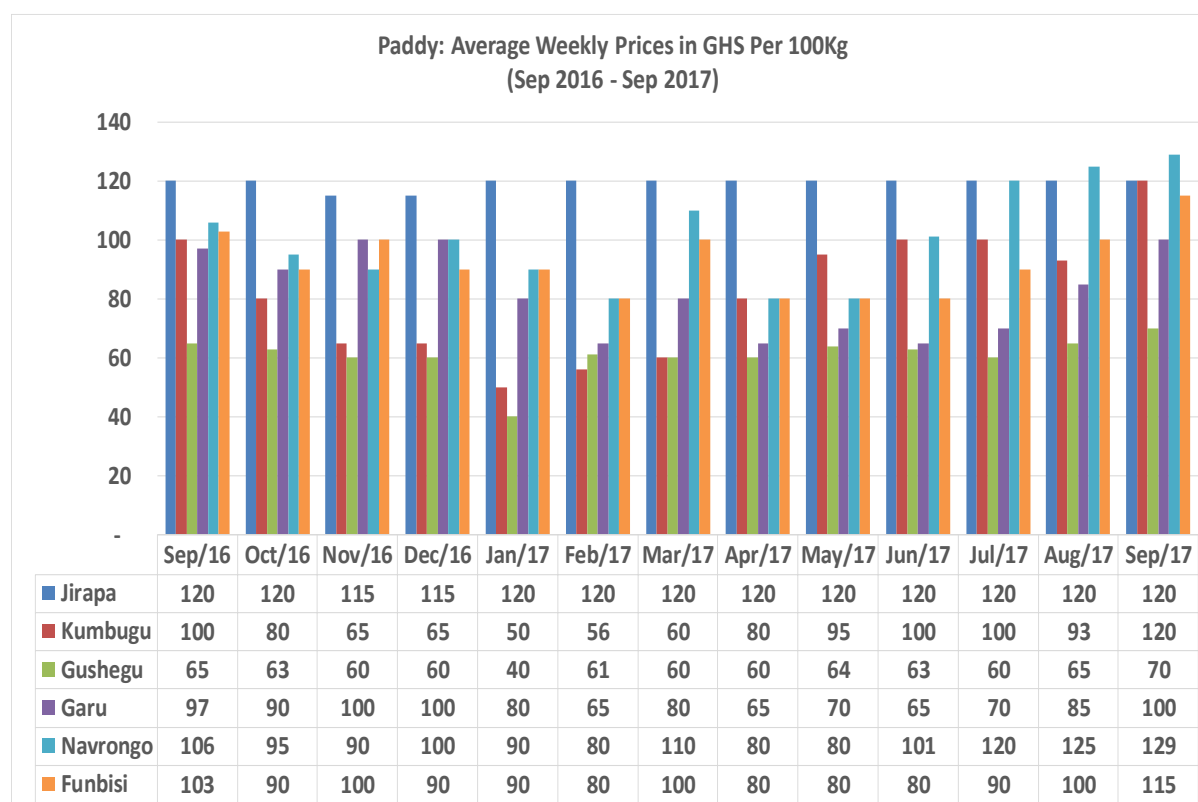
In the Upper West region, the key markets of Gwollu and Tumu experienced price declines in June/July 2017 as farmers offloaded their stocks increasing supply over demand. This response was in anticipation of new maize from Southern Ghana reducing the influx of buyers from the South and leading to a fall in prices in the North.

Paddy Rice

Paddy prices averaged a year on year increase of 11% between September 2016 and September 2017.

Prices declined between September 2016 and February 2017 towards the harvest period, and began recording upward movement afterwards when stocks reduced.

Figure 20: Average Weekly Paddy Prices from Selected Markets



Source: ADVANCE market monitoring

Demand by AVNASH for aromatic rice varieties, mainly Jasmine and Agra, coupled with the rush for fresh paddy with high moisture content by southern millers, is the reason for the ascending prices experienced in the Northern and Upper East regions in June 2017 for the dry season harvest from irrigated fields.

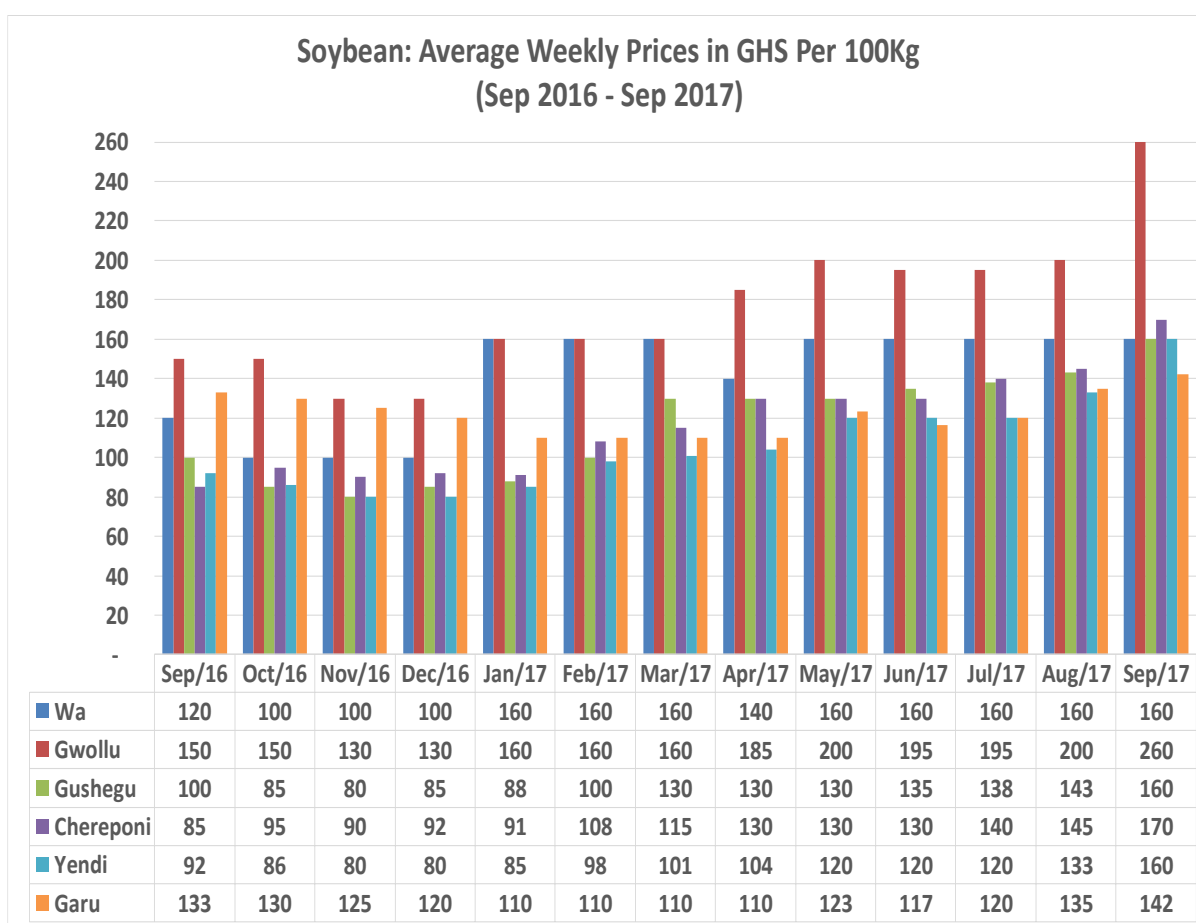
In the Northern region, paddy prices followed the traditional cycle of decline, as moisture levels of stocks increase and rise as the new harvest begins. Prices in the Kumbungu area were particularly high as a result of high demand caused by the activities of southern buyers competing with aggregators procuring paddy for AVNASH.

The Jirapa market in the Upper West recorded the highest prices of paddy compared to all the rice markets monitored. This situation is so because the market has an excess of demand over supply because of purchases from caterers of the school feeding program as the variety of rice cultivated here is what they prefer. Rice producers within the Jirapa area have in recent times reduced the volumes they cultivate, resulting in inadequate supply of paddy to meet active demand.

Soybean

Soybean average prices between October 2016 and September 2017 was stable and comparable to the average price between October 2015 and September 2016. Prices declined between October and December 2016 at harvest time when stocks were available. They began increasing in January 2017, and continued the upward trend afterwards as stocks dwindled.

Figure 21: Average Weekly Soybean Prices from Selected Markets



Source: ADVANCE market monitoring

Farmers and aggregators had depleted stocks at the end of September 2017. Buyers were holding money and chasing for the beans, which was the opposite case at the same time in 2016. This occurrence is partly attributed to the low harvest in 2016 due to reduced area of production of farmers arising from the low patronage and low prices recorded in 2015 and 2016.

Also, buyers like Vester Oils Mills and Royal Danemac increased their demand for soybean to in response to increased sales of soy cake due to their entry into new markets in Ghana and Cote d' Ivoire.

Agrisolve, an aggregator, was active in the Northern region buying soybeans for export to Turkey.

In the Upper West region demand was bolstered with the commencement of operations of Savannah Foods Empire, a soybean processor based in Wa in December 2016.

7.2. LEAD FIRM COMPETITIVENESS

Support for Buyer Outgrower Development

Development of buyer outgrower schemes is where the buyer provides inputs (typically seed, fertilizer and weedicides) and mechanization services (typically ploughing) to the farmer; and the latter pays back with a specified quantity of produce at the time of harvest. These represent mini-value chains within the large maize, rice and soybean chains.

Support for recovery on Buyer Outgrower Scheme for 2017 Farming Season

Buyer Name	Crop	Type of Support	No. of Participating OBs	Value of Support (GHS)	Status at September 2017
Agricare (North Ghana)	Maize	Seed, fertilizer and crop insurance	70	2,624,952	Crops are still on the field. Recovery is set for January 2018
Agricare (South Major Season)	Maize	Seed, fertilizer and crop insurance	21	446,952	Recovery is underway. 6 OBs have requested for extra financing for shelling and drying
Agricare (South Minor Season)	Maize	Seed, fertilizer and crop insurance	17	316,936	All farmers have received full consignment of seed supplies and have planted. Fertilizer supply delayed. NPK 15:15:15 was supplied instead of NPK 20:10:10. A meeting will be arranged between Agricare and the OBs to re-negotiate recovery terms given the change in fertilizer and delayed supply
Akate Farms	Maize	Seed, fertilizer, weedicides	1	2,868,750	OB in the Upper West region were in the process of mobilizing grain from their OGs to repay the input support
Premium Foods	Maize	Seed, fertilizer	4	93,880	Crops are still on the field. Recovery is set for January 2018
Royal Danemac	Soy	Seed, fertilizer	1	9,000	Crops are still on the field. Recovery is set for January 2018
E-GABS	Soy	Cash for mechanization services	1	2,400	Crops are still on the field. Recovery is set for January 2018
Vester Oil Mills	Soy	Cash	2	110,000	OBs obtained tractor services and other inputs to cultivate soybean in the Chereponi area of the Northern region. Recovery is set for January 2018

Shinkafa Buni (AVNASH)	Paddy	Seed, Fertilizer and Herbicide	15	275,888	Crops are still on the field. Recovery is expected to begin in early November 2017
Sahel Grains	Maize	Ploughing Services	6	12,000	Crops are still on the field. Recovery is set for January 2018
Duna Farms	Maize	Fertilizer and Ploughing Services	1	5,200	Crops are still on the field. Recovery is set for January 2018
Total			139	6,765,958	

The project supported five buyer outgrower schemes to monitor crop performance and recover payments for the 2016 farming season.

Table 29: Status of Recovery of Buyer Outgrower Schemes for 2016 Farming Season

Buyer Name	Number of OBs/Groups Supported	Crop	Type of Support	Status of Recovery at September 2017
Agricare (North)	8	Maize	Seed, fertilizer	Full Recovery
Agricare (South)	18	Maize	Seed, fertilizer	78%. Lower than expected recovery
Addicents Foods	2	Paddy	Seed, fertilizer, pesticide	Full Recovery
Timothy Dassah, Poultry Farmer, Techiman	1	Maize	Fertilizer, weedicides	Full Recovery
Akate Farms	1	Maize	Seed, fertilizer	Full Recovery

In addition to the above, OBs who defaulted on the Premium Foods input credit for the 2015 farming season, and whose repayment obligation was extended to the harvest from the 2016 crop, began mobilizing grain to repay their outstanding liability.

BDS Support to buyers

Various levels of BDS support was provided to 16 buyer firms during the period, as described below. Two firms – BM Unity Farms and Techiman Maize Traders Association – were also supported to prepare and submit proposals to the DFID funded West Africa Foods Markets Programme. However, the applications were unsuccessful.

The following business development services was provided to buyers outside the development of outgrower schemes.

Table 30: BDS to Grain Buyers and Market Lead Firms

Name of Firm/ Organization	Home Region of Firm	Source of Technical Assistance	Type of Technical Assistance	Status of Engagement
Royal Danemac, soybean Processor	Ashanti	ADVANCE	<p>Refinancing of an existing loan with Roots Capital with more favorable conditions (lower interest rate, quarterly repayment)</p> <p>Financial management advice to help improve firm's cashflow.</p> <p>Facilitation of contract to supply 100Mt of soymeal a week for a fish feed processor in Accra</p> <p>Preparation of grant application for the installation of an edible oil bottling line</p>	<p>Complete</p> <p>Completed</p> <p>Completed</p> <p>Pending review of ADVANCE Grant Committee</p>
Agricare, processor feed mill	Ashanti	ADVANCE	<p>Provided inputs for projections for working capital financing application</p> <p>Assisted firm secure credit on fertilizer supplies from Chemico to support its outgrower scheme</p> <p>Grant application and concept note for a tractor and accessories to support farmer outgrower scheme</p>	<p>Completed</p> <p>Completed</p> <p>Pending review of ADVANCE Grant Committee</p>
Vester Oil Mills, soybean processor	Ashanti	ADVANCE	<p>Advice for the acquisition of a franchise to produce Zeigler¹⁰ animal feed products in Ghana</p> <p>Assisted firm to develop a sales channel to the Ivory Coast, through the Unity Farms Group</p> <p>Facilitate contract to supply 150Mt of soymeal per week for a fish feed processor in Accra</p>	<p>Completed</p> <p>Completed</p> <p>Completed</p> <p>Completed</p>

¹⁰ Zeigler <http://www.zeiglerfeed.com/> is an American company, and a major producer of poultry and livestock feeds

Name of Firm/ Organization	Home Region of Firm	Source of Technical Assistance	Type of Technical Assistance	Status of Engagement
			<p>Provided input into firm's brand design for its edible oil</p> <p>Preparation of grant application for equipment to establish quality control laboratory</p>	Pending review of ADVANCE grant Committee
Soybean Processors (Royal Danemarc. Vester Oil, Inter-Grow, G. Bosomtwe, E-GABS)	Various	STTA Consultant	Product quality audit of local soymeal using imported soymeal as a benchmark	Draft report under review following stakeholder validation of initial report and further scientific tests
E-GABS, soybean processor	Brong Ahafo	ADVANCE	<p>Assistance to apply for a business improvement grant from the UKAID. Firm successfully won an award of GB£3,000.00 for business improvement</p> <p>Preparation of grant application for acquisition and installation of soybean de-stoner</p>	<p>Completed</p> <p>Pending review of ADVANCE Grant Committee</p>
G. Bosomtwe Ventures, soybean processor	Ashanti	STTA Consultant	Development of soy based 5% poultry concentrate	Ongoing
ANS Mills, rice miller	Ashanti	ADVANCE	<p>Development of milled rice distribution network in the Ashanti region</p> <p>Assistance with finding an appropriate channel to transfer funds to service debt with Root Capital</p>	Ongoing
Ejura & Aframso Women Rice Milling Group	Ashanti	ADVANCE	Grant application for improved rice parboiling systems	Pending review of ADVANCE Grant Committee
Naawin Enterprise, rice miller	Ashanti	ADVANCE	Advise to resolve internal management challenges	Completed

7.3. TRADE ASSOCIATION SUPPORT

The project supported three trade Association during the reporting year. They are the Ghana Grains Council (GGC), the Ghana Rice Inter-Professional Body (GRIB) and the maize traders' association in the major maize trading areas in the Brogn Ahafo Region.

Ghana Grains Council

The Ghana Grains Council (GGC) completed implementation of activities under the 3rd year grant agreement for US\$200,000 for the period September 1, 2016 to August 31, 2017.

The primary objective of this grant is to establish a Manual Warehouse Receipt System (Tier 2) targeted particularly at farmers, aggregators, traders, and rural and community banks.

Grains Market Development and Tier 2 Warehouse Receipts Program

The following was accomplished during the period.

- The upgrading of the Central Depository (CD) software system was completed to include community based warehouses in the WRS under Tier 2 and also improve the validation process for grains receipted at the certified warehouses.
- Thirty-two community warehouse managers and assistants in the Brong-Ahafo region were trained on warehouse and stock management, warehouse platform usage and stock record keeping including the use of bin cards and issuance of Goods Receipt Note (GRN) in preparation for their participation in Tier 2.
- Thirty warehouse managers, financial institutions (FIs) and aggregators from the Northern sector were trained on Tier 2 receipting protocols.
- A refresher training was conducted for 22 warehouse operators on warehouse management, inventory record keeping, and storage management under Tier 2 receipting protocols. No new community warehouses were approved during the year.
- Ninety-six persons used the GGC warehouse platform for trading.

Policy influencing through Advocacy on Grains Standards

Ghana Grain Council (GG)C collaborated with other value chain actors to get the pictorial illustrations for the national standards on paddy, milled rice and soy beans approved by the Technical Committee on Agricultural Produce of GSA. The handbooks on the interpretation of the national standards for maize, soy, paddy and milled rice were also approved by the committee.

Members Benefits and Diversified Service Delivery

Expanding Market Access & Visibility

A Facebook page for GGC warehouses <https://www.facebook.com/ggcwarehouses/> was created to reach out to more actors via social media.

During the period GGC facilitated the sale of paddy rice by farmers to two (2) rice millers, AVNASH in Tamale and Jay Rice in Kumasi; and the sale of yellow maize to Asitech Company, an aggregator.

Through the collaboration between GGC and Image-Ad the functionality of the platform i.e. www.ggcwarehouse.mfarms.org, was enhanced. Currently, all the 22 community warehouses and inventories in the northern zone are posted on the platform. For the southern zone, 17 out of the 30 community warehouse locations are posted on the platform.

Trade worth \$295,448 was facilitated through MIS, use of bids and offers platforms, business to business linkages during the period. Total metric tonnage of grains deposited and receipted was 2,878mt out of which 2,215 MT was traded through the WRS.

Membership Care Visits

The secretariat staff conducted 50 care visits to members during the period. Some of the issues raised include poor prices of grains at the community level and the lack of storage facilities among others. Strategies adopted to mitigate these include engagement of partner projects to expand storage facilities to members, linking of members through bids and offers on the Esoko platform, and the use of the warehouse platform as well as improving the dissemination of market prices to members.

GGC New Membership & Annual Subscription Collection

The period saw an increase of the Council's membership from 110 to 118 with the admission of eight new members made up of three and five in the northern and southern zones respectively.

6th Annual Pre-harvest Agribusiness Event

The Council hosted and assisted ADVANCE organize the Sixth Annual Pre-Harvest Agribusiness Event in October 2016. It generated total revenue of GHS 98,320 from the event.

Ghana Rice Inter-Professional Body (GRIB)

ADVANCE provided technical and financial support to GRIB to organize the 3rd Ghana Rice Festival in Accra on 7th and October 8, 2016 under the theme "Eat Quality Ghana Rice for a Healthy Life".



Local rice on display at 3rd Ghana Rice Festival

Feedback from GRIB indicates the following participated at the event.

Category	Number
Rice Farmers	117
Rice Processors	5
Marketers	14
Service Providers	6
Media Houses	18
Public Sector	32
Consumers	Over 1,800

GRIB launched a branding and certification logo for Ghana rice at the event.



Ghana Rice Brand and Certification Logo

Promotion of Structured Trade with Southern Maize Traders

In June 2017, ADVANCE designed an activity to promote structured trade, particularly the use of weights and measures, and contracts in maize markets in the maize belt of the south.

The project profiled 11 trade associations in nine major recognized maize markets in the south with a total membership of 2,592 traders, 1653 males and 939 females. These include Techiman, Badu, Wenchi, Ejura, Kintampo, Nkoranza, Atebubu, Awuah Odumase and Odumase no. 1 maize markets.



Interim executives of Southern Maize Traders Network

A trade association network for the nine maize markets was formed under the name “Southern Maize Traders Network” with a five-member interim executive elected to lead the network and develop a written constitution for the association by the end of October 2017.



Traders at Odumase No 1 market displaying maize quality posters after a training session

A training module on structured trade comprising maize quality standards, use of weights and measures, and adoption of contracts have been developed and delivered to the executives of the 11 trade associations. Training of the general membership has commenced with 100 traders trained to date out of the 2,500 targeted by December 2017.

Four of the traders associations in Techiman, Ejura, Badu and Wenchi markets will be supported to undertake advocacy to influence their respective Metropolitan, Municipal and District Assemblies

(MMDAs) to improved infrastructure in the markets and also involve the traders associations in fixing levies.

7.4. NORTH GHANA PROCESSING UPGRADE

Below is an update of progress of work on the three rice mills targeted in the Northern region for expansion and upgrade.

Table 31: North Ghana MSME Agro Processors Identified for Milling Expansion and Upgrade

Firm	Location	Existing Processing Capacity (Mt) per Hour	Milling Upgrade Needs	Status of Engagement as at the end of September 2017
Tiyumba Rice Centre	Women's Processing Tamale, Northern region	0.13	Completion of storage rooms, fence wall and drying platform	Procured and supplied all the building materials needed under an in-kind grant awarded to the enterprise The enterprise hired artisans to begin the works
AMSIG Resources	Worebuoggu (near Nyankpala), Northern region	0.5	Replacement of specific components of the mill, and provision of grader	An in-kind grant has been awarded with NXP approval secured; procurement will begin in the next quarter
Neybu Biyoona Rice Processing Centre	Nyerizi, Northern region	0.13	New rice mill upgrade	An in-kind grant has been awarded with NXP approval secured; procurement will begin in the next quarter

7.5. COMMUNITY BASED MARKET SYSTEMS STRENGTHENED

The strengthening of FBOs continued throughout the year as a process of transforming them into FBEs. A supplementary Sell More for More (SMFM) training was organized for 5 FBOs in the Kpandai District in Northern Region. Because of the SMFM training organized for FBOs, coupled with the regular visits, mentoring and coaching by the Capacity Team, a total of 17 FBOs were engaged in collective sales totaling \$ 139,235.05 (GHS 593,559) to various end buyers as shown below.

Table 32: Collective sales for FBOs per operational area

REGION	NAME OF FBO	COMMODITY	END BUYER	QUANTITY (MT)	VALUE (GHS)
Upper West	Sissala West Cooperative	Maize	Gold Coast Grains Ltd	50	55,000
	Tiehisung Farmers Coop	Maize	Yahaya Iddrisu	5	5,000
	Nutaa Suntaa	Maize	Yahaya Iddrisu	16	16,000

REGION	NAME OF FBO	COMMODITY	END BUYER	QUANTITY (MT)	VALUE (GHS)
Upper East	Biu Cooperative Farmers	Paddy Rice	Accra Aggregators	89.5	134,250
	Amaachaaba Farmers	Paddy Rice	Accra Aggregators	75	112,500
	Asiatechaaba Farmers	Paddy Rice	Accra Aggregators	80	120,000
	Bonia Yuoniwoba Coop Farmers	Paddy Rice	Asutware Aggregators	71.5	107,250
Northern	Akpebe Farmers	Rice	Ejura women Rice Processing group, Afranso Women Processing and Alima Issaka	67.14	60,780
	Anzansi Farmers	Maize	TB Zakis enterprise	12.2	12,200
	Tilikpokpo Farmers	Soya	Savanna Farmers Marketing Company	22.3	17,419
	Suglo Farmers	Maize	Tamale Aggregators	16.9	20,600
	Suglo Farmers	Soya	Tamale Aggregators	2.2	1,980
	Puakaba Farmers	Soya	Sky 3- Kintampo	10.4	10,400
	Kroye Farmers	Maize	Open Market	5.2	6,760
	Nkabom Farmers	Maize	Adjoa Frewaa-Kumasi	4.6	5,720
	Nyame Bekyere Farmers	Maize	Kwabena Ayapemso-Kintampo	4.4	5,720
	Yonkodo Farmers	Maize	Dora Opoku-Kintampo	7.1	9,230
Total					593,559

Moreover, FBOs were engaged in collective input purchases. Some of the input dealers that engaged the FBOs included Simple Prince and Regional Marketing Group in the Upper East; Crop Research Institute and 18th April in Upper West and Timothy Agrochemicals, Hadiola and Wumpini in Northern Region. They purchased certified seed, fertilizers and agrochemicals from the input dealers. A total of 37 FBOs were engaged in purchasing inputs collectively; two in Upper East, 15 in Northern and 20 in Upper West. A total value of GHS 76,784 was involved in these purchases. Upper West region FBOs alone spent GHS 57,600 with 18th April who went into contract with some of the FBOs paying 50% before delivery while the other 50% will be paid after harvesting. In Northern region, In-Community Input Promotion was carried out in 10 communities in collaboration with Timothy Agrochemicals, Hadiola and Wumpini to promote the sale of inputs to SHFs. Out of this promotion, nine in-community agents were identified to link up with these input firms.

8.0. Sub-purpose 3: Strengthened Capacity for Advocacy and Activity Implementation

Under sub-purpose three, the project focused on

- (i) Development of advocacy groups
- (ii) Development of district agricultural investment plans
- (iii) Capacity development for program implementation, and
- (iv) Capacity development for farmer based enterprises

8.1. ADVOCACY CAPACITY BUILDING

Identify and address specific enabling environment constraints

In order to address the challenge of women's low access to land, an issue which not only reduces women's agriculture productivity but has broad impacts on female social and economic empowerment,



NORTHCODE Project Coordinator explaining a point at a Dialogue Meeting at Kabampe.

ADVANCE has been working with communities and advocacy groups to raise awareness on this issue and increase functional access to land for women. Significant progress was made by the Coalition for the Development of Western Corridor of Northern Region (NORTHCODE) in the implementation of an advocacy action on women access to productive land with grants support from ADVANCE. The project seeks to influence Traditional Authorities and Land Owners in 16 communities within West Gonja, Sawla/Tuna/Kalba, Mion and West Mamprusi Districts to set aside 1,600 acres of land for demarcation into "Land Banks" for use by 1000 women. As a result of advocacy research conducted by the organization

and stakeholders' workshop and community and district level dialogue meetings, all the 16 traditional leaders have indicated their readiness to release productive lands for demarcation into the land banks. The traditional authorities demonstrated their commitment by agreeing to a draft Memorandum of Understanding (MoU) which commits them to release a total of 1,600 acres of land for use by women over a 10-year freehold lease period. NORTHCODE in the next quarter will facilitate the MoU signing ceremony in each of the four districts following the release of lands by the traditional authorities. Demarcation of the land banks and linkage of the women beneficiaries to input dealers will commence at the next stage. The successful implementation of this project will contribute to breaking traditional barriers that inhibit women's sustained access to productive lands and other inputs thus enhancing their crop(s) production levels.

In addition, three local NGOs (Youth Harvest Foundation Ghana, URBANET and Community Development Alliance) advocacy proposals were shortlisted from a list of nine applicants through a competitive process and recommended for grant support to enable them undertake advocacy actions. The advocacy actions will address three enabling environment constraints namely; limited access to government subsidized fertilizer due to smuggling, inadequate support for Agriculture Extension Agents

by MMDAs and inappropriate handling of agro-chemical containers in 10 districts in the Northern, Upper East and Upper West Regions.

Also, ADVANCE supported four Community Resource Management Areas (CREMAs) to undertake advocacy actions. The advocacy actions will influence four District Assemblies to pass, gazette and enforce CREMA bye laws to control bush fires and other negative environmental practices affecting agricultural activities. The CREMA Societies include Kunlog, Chakali Sumaalu, Moagduri Wuntamluri Kouwomsaasi and Builsa Yenning CREMA Societies located in the Sawla/Tuna/Kalba, Wa East, Mamprugu Moagduri and Builsa South Districts. Two Advocacy Consultants and Video Documentary Experts were contracted to build the capacity of the four CREMA Societies on the concept and practice of advocacy. They will also support them to document in audio-visual form negative environmental practices within the CREMA communities and engage with District Assemblies and other duty bearers to pass, gazette and enforce the CREMA bye laws. The gazetting and effective enforcement of the CREMA bye laws is expected to contribute to reduction in incidence of bush fires and other negative practices that affect the environment and agriculture production. This will benefit 27 ADVANCE supported OBs and 9,766 ADVANCE supported out growers who carry out their farming activities in the four CREMA areas.

During the year, ADVANCE participated in and shared experiences at the Stage II Multi-Stakeholder Dialogue on Farmer-Fulani Pastoralist Relationships in Northern Ghana. The conference which was on the theme ***“Towards a new agenda for managing peaceful farmer-Fulani pastoralist relations in Northern Ghana”*** was part of efforts to galvanize support from like-minded projects towards engaging with government institutions at the national, regional and district levels to put in place sustainable mechanisms, policies and strategies to manage farmers-Fulani pastoralist relations. This initiative is expected to minimise the destruction of farmlands, water bodies and other resources caused by the activities of Fulani herdsmen, ensure better methods of animals husbandry and peaceful co-existence between farmers and Fulanis for mutual benefits. ADVANCE through engagements with farmers has identified some communities such as Dawadawa, Yagba and Kalbeo where incidence of Fulanis-Farmers conflicts is pronounced and affecting crops production. The program was organized by CARE International and other consortium partners (Actionaid, WANEP and SEND Ghana) under the USAID funded Northern Ghana Governance Activity (NGGA).

Build capacity of OBs and FBOs on policy advocacy

Sustained efforts were put into the capacity development and formation of FBEs networks in the Kintampo South District, Kintampo North District and Northern Region. ADVANCE and the Agriculture Policy Support Project (APSP) collaborated to conduct two training sessions for FBOs being transitioned into FBEs in the Northern Region. ADVANCE also conducted training and sensitization sessions for FBOs in the Kintampo North and Kintampo South Districts. Overall, a total of 281 farmers from 56 FBOs were trained on the concept of advocacy, steps in the advocacy process, how to identify advocacy issues, forming FBOs networks and the components of the “Planting for Food and Jobs” program. The training also touched on the role of government and private entities in provision of goods and services and social amenities (local governance system). As a result of the training, two District level FBEs networks were formed in Kintampo North and Kintampo South Districts with elected executives.

The FBE networks also identified destruction of farm lands by cattle herdsmen and the non-utilization of weights and measures in agriculture commodity trade as the pertinent advocacy issues that they are committed to addressing with technical support from ADVANCE. In addition, the beneficiary FBOs from

the Northern Region expressed interest in forming five zonal FBO networks in the Northern Region to enable them initiate and implement advocacy actions in the future, undertake collective sales and bulk purchases of inputs and produce and share experiences and knowledge. During the first quarter of FY18, follow up visits will be made to facilitate the formation and strengthening of zonal FBOs networks among the beneficiary FBOs in the Northern Region while efforts will be made to build the internal structures of the FBEs networks in Kintampo North and South to make them functionally relevant.

Also, ADVANCE carried out an assessment of the Upper West Regional FBOs Network. The exercise was part of a process to strengthen the FBOs' Network to function effectively. The assessment focused on previous work carried out by ACDEP and ADVANCE towards the formation of the Regional Network, progress made since the formation and launch of the network, strengths and challenges and the way forward. The findings showed that the regional FBOs network had all internal structures required for their effective functioning but they were confronted with challenges such as limited recognition, inadequate funding, irregular meetings, and dispersed locations of the executives. As a way forward, the network planned to hold one general meeting before the end of 2017 to address some of their challenges, identify and establish linkages with development partners in the region and districts and start a process of developing funding proposals on identified issues that affect majority of members.

OBs Network Formation

ADVANCE assessed the internal structures of 11 Zonal OBs Networks initiated in 2016 (bank account, constitution, leadership, registration, contribution etc.) to ascertain their current respective strengths and weaknesses following the project support. A total of 94 OBs (88 males and 6 females) participated in the exercise at their various zonal levels. Findings shows that some of the OBs networks (e.g. Bawku and Wa Zonal OBs Networks) were progressing steadily with establishing and strengthening of their internal structures as well as engagement meetings with Regional and District level policy makers. However, other networks lacked some of the building blocks required for effective functioning as networks. Based on the assessment, the project supported the OBs Networks to develop action plans to address the lapses identified. Some of the zonal networks have drafted constitutions to ensure smooth operation and opened Bank Accounts as well. Follow up visits will be carried out during the second quarter of FY18 to assess the progress of implementation of the action plans and provide technical backstopping in areas such as advocacy and engagement with decentralized government agencies in the districts.

8.2. CAPACITY BUILDING OF ORGANIZATIONS

A capacity development program was organized for 10 (three each from Upper East and West and four from NR) selected local Non-governmental organizations (LNGOs) based in the Northern, Upper west and upper east regions on ACDI/VOCA Grant Management and Procurement. The objective was to build the capacity of the LNGOs, Civil Society Organizations, FBOs so that they would be capable of:

- Partnering with other higher organization in the future,
- Implementing some activities on behalf of ADVANCE

The program was facilitated by the Vice President for Global support and award management practices at ACDI/VOCA headquarters and supported by the award manager at ACDI/VOCA Headquarters, Washington.

Because of this, eight Local Institutions applied for grants to implement various activities that would enhance the attainment of ADVANCE overall goal. Out of this, three (Youth Harvest in Upper East,

Community Development Alliance in Upper West and URBANET in Northern Regions) have been shortlisted to benefit from grants from ADVANCE. Plans are far advance in the award of these grants.

Aside this, as mentioned previously, one Local institution, NORTH CODE, was awarded a grant to implement an activity that would ensure the access of land (1,000 acres) by women in 16 communities which is on-going.

Enterprises identified as high potential for future awards

A total of 10 local institutions have been identified as high potential for future awards in the current year. These were identified after an Organizational Capacity Assessment (OCA) was conducted on them. They were also trained in how to design marketable proposals. Eight out of the ten presented proposals on advocacy issues. Three have been selected as very good proposals. NORTHCODE, is one of such institutions that were trained and awarded a grant to implement an activity that would promote the access of 1,600 acres of farm lands for women in 16 communities.

Organizations receiving capacity building support

The number of organizations that received capacity building support in the reporting year are 10. They received capacity building on Finance and Administration and proposal writing skills. A step-down training would be organized for some selected organizations that did not benefit from the above trainings at the regional level.

8.3. SMALLHOLDER CAPACITY BUILDING

For program implementation to succeed, there is the need to develop capacities of farmers. This would assist to improve the adoption of new technologies that ADVANCE is disseminating to farmers. The year 2017 saw the training of 12,698 Smallholder Farmers (SHFs) in Numeracy with 5,109 being males and 7,589 being females. Before the training, 50 trainers were identified in various communities with the help of FBO executives and Outgrower Business to train outgrowers who are members of these two categories. These were mainly the youth who attained some appreciable level of education. This exposed the youth to skills that would prepare them for the job market and to help them make career choices. The exposure ended up creating interest in some of the trainers to take up teaching as a profession.

One other community level capacity building training that was carried out during the reporting year to enhance program implementation was Farming as a Business (FaaB). A total of 15,959 SHFs made up of 7,591 males and 8,368 females were trained by 52 trainers.

Numeracy Training

Numeracy training in the communities ended in April 2017 with a total of 13,199 SHFs benefiting as against the targeted number of 12,000 i.e. an excess of 10% above the target. Out of this 7,751 representing 59.8% were females whilst 5,368 representing 40.2% were males as indicated below.

Table 33: Numeracy training beneficiaries per region per gender

Region	Trainers	Target	Males	Females	Total
Northern	20	5,200	2,594	3,364	5968
South	3	500	288	155	443
Kintampo North &South	4	800	636	672	1308
Upper East	15	3,000	1,077	1,885	2,962
Upper West	11	3,000	773	1,675	2,448
Total	50	12,000	5,368	7,751	13,113

“The numeracy activity has helped me to be able to identify my VSLA number on my passbook, I can also help my children in lower primary to write some numerals, thanks to the ADVANCE Project.” - Memunatu of Zawara in the Upper East Region~

The direct and indirect impact of the numeracy activities on the SHF is immeasurable as indicated below:

- Being able to identify expiring dates on inputs such as chemicals and medication. Ayishetu Mahama narrated how she ended up by destroying her crops by using expired chemical, by then she could not identify numbers. This has boosted productivity among farmers because they now use viable chemicals on their farms.
- Numeracy enable beneficiaries to know weights of their produce when they are weighed by Aggregators, farmers are no longer cheated because of not knowing numerals.
- Beneficiaries can now identify the different Ghanaian currencies and can make change when the opportunity arises, this has resulted in higher earnings of farmers.
- Beneficiaries now have self-fulfillment being able to identify and write numerals
- Female beneficiaries can monitor the performance of their children when they are sent to the clinics for weighing, when the weights are reduced, they ask the nurses for support as to how to improve the weights of their children. This has led to healthier children that would spare their parents productive time to engage in farming activities hence increase in production.
- Beneficiaries can now support their children who are learning how to write numerals and the knowledge of knowing numerals would empower them to monitor the performance of their wards in school. This has improved the performance of their wards in school because of the close monitoring.
- Numeracy has empowered beneficiaries to know how to identify and take other actors' phone numbers to engage them in businesses which has led to an increase in their earnings.



Learners being drilled on how to identify Expiring dates on Chemicals containers



A section of Numeracy Beneficiaries in Gnan in the Upper West Region

FaaB Training

Farming as a Business (FaaB) ended the same time with Numeracy ie April. All regions except Brong Ahafo recorded a higher female participation during the training period. The targeted beneficiaries were 13,000 SHFs but at the close of training the total went up to 15,959 representing an excess of 22.8%. The female participants were 8,368 representing 52.4% whilst the males were 7,591 representing 47.6% as indicated

in the table below. Beneficiaries were also extracted from the project's data base and approved by the OBs. In all, beneficiaries covered 4 sessions and the figures attained are indicated below.

According to Damata Musah, she used her own seed in planting and her yield was not more than 6 maxi bags on her two-acre plot but after the training, she now uses certified seed on her farm which she hopes to increase the yield despite the existence of the Fall Army worm.

Table 34: FaaB training beneficiaries per region per gender

Region	Trainers	Target	Males	Females	Total
Northern	20	4,200	3,205	3,468	6,673
Upper East	11	3,000	1,267	1,616	2,883
Upper West	11	3,000	1,835	2,184	4,019
Brong Ahafo	10	1,800	1,284	1,100	2,384
Total	52	13,000	7,591	8,368	15,959

" The Training on Farming as a Business made me to understand that sowing with improved seed increases one's yield. This made me to buy improved soya seed (Janguma) from MoFA at the cost of GHS 100.00. I also learned in the training that it is good to document all the cost that is incurred in our farming so I have made my husband to write down all the activities and cost of activities so that after harvest I will be able to determine whether what I have invested in the farm compared to the harvested produce whether I have made profit or loss."

As part of the team's activities within FY17, we tried to assess the impact of the previous FaaB trainings with beneficiaries. Some of the impact mentioned include:

- Beneficiaries now keep records of their farming activities which enable them to know whether they make profits or losses.
- The training exposed beneficiaries to planning their farm activities before the season, which they use not to do.
- The pictorial story of Azara and Sumaya presented during the training, exposed them to the use of certified seed, which is yielding results as their yields have improved.
- Beneficiaries now draw up crop budgets before the season to project their expenditure in the coming season.
- Before the FaaB trainings, farmers were not seeking extension services from MoFA, but now they invite AEAs to support them in their site selection, type of seed to use and other inputs and when they are to be used. This has led to an increase in productivity.
- The training inculcated the spirit of collectiveness in farming activities especially FBO beneficiaries.



FaaB community Training in Kintampo South

8.4. CAPACITY DEVELOPMENT FOR FBEs

To ensure that Farmer Based Organizations (FBOs) operate as business entities there is the need to mentor, coach, sensitize, trained and monitor these FBOs over a period time to transform them from FBOs level to Farmer Based Enterprises (FBEs). As a project, we identified some existing FBOs in our operational area then they were assessed and categorized into different levels i.e. Formative stage, Early Transition, Mid-transition and finally Model FBE. A capacity Building tool was established to assist in assessing these groups every three months. An initial 135 FBOs were considered for the transformation, then 20 more from ADVANCE South was added totaling of 155 FBOs. The third assessment which was conducted in August 2017 had the following:

Table 35: Third Assessment of FBEs across operational areas

Region	Formative Stage (0-10)	Early-Transition (11-30)	Mid- Transition (31-69)	Model (70+)	FBE
ADVANCE South	0	6	10	4	
Upper East	0	1	11	13	
Kintampo	0	11	21	5	
Northern	0	6	27	15	
Upper West	0	10	15	0	
TOTAL	0	34	84	37	

The average score per region for the three assessment is as below:

Table 36: Average FBE scores per Assessment per operational area

REGION	# FBOs	Assessment 1	Assessment 2	Assessment 3
ADVANCE South	20	40.0	36.7	56.1
Upper East	25	60.4	64.5	66.8
Upper West	25	49.8	58.3	64.7
Northern	48	52.0	58.8	63.1
Kintampo	37	40.9	48.3	59.7

Most of the FBOs are engaged in some sort of record keeping of their activities; provision of bulk services such as ploughing, purchase of inputs and marketing; regular payment of dues; adherence to the provisions of the constitution; acquisition of small grant equipment such as tarpaulin, dibblers etc. to ease work on their farms. Two groups in the Upper West acquired tractors ie St. Cecilia Cooperative Farmers and Marketing Union based in Tuna and Mwinikuubu-Babaaha Farmers and Marketing Cooperative

Mentorship Program for FBOs

For FBEs to be transformed from FBOs to FBEs, there is the need to mentor, coach, sensitize, train and monitor them on regular bases to ensure a quick transition. This is done at two levels; 1. at the Capacity Development Officers' (CDOs) level and 2. at their peer level. FBOs that are doing so well are considered as mentors and those that are less performing as mentees. Mentorship visits were organized for mentee FBOs to visit mentor FBOs to learn at first hand the good practices that are being observed. They were mentored on Record keeping, sources of raising revenue, collective activities such as mechanization services, input purchase and sales; access to financial credit, leadership and adherence to the constitution and maintenance of equipment etc. Peace and Love Cooperative Farmers in Pamdu in the Kintampo South district, which attained model FBE status, mentored 30 FBO leaders in the above-mentioned areas. Ntrim Farmers' Group in Northern Region also hosted Anzansi Farmers' and Kimoban farmers' group executives. The main learning areas include Agronomic practices during farming activities; Marketing of produce, rendering services for members and documentation.

"My knowledge has been enhanced on income generation (dues, rendering services for a fee, group farms, VSLA etc) and assets acquisition, your FBO have a strong leadership and that explains your success. I will also strengthen the leadership in my FBO and aim at doing a profitable business."

Issifu Sulemana, Kintampo North

Jahifo Farmers' Group in Nanumba North also hosted 4 FBOs namely: Kinyoban Cooperative, Mbamom Coop, Puak-Mba Coop and Suglo Farmers Group. The learning areas include: Record keeping, rendering services to members eg mechanization services, collective activities e.g. collective sales and buying of inputs, agronomic practices etc.

The exchange visits were very fruitful and assisted some of the mentees to move to the next stage of the FBO assessment.

Demo site & Group Farms

Demo sites, group farms model farms were hosted by some FBO groups as a means of learning new technology of farming and replicating the practices to their own farms. In all, 24 demo sites were established for maize, 3 rice and 5 soy beans. In addition to the demo sites, 8 FBOs established group farms as a means of mobilizing funds for the group and learning the good practices of farming. Two groups established model farms with the motive of learning new practices and as a source of revenue for the groups.

One unique thing that was done with the demo sites was that at every stage of any good practice, members were challenged to replicate same on their own farms. This resulted in the adoption of the practices that were used on the demo fields. Some demo sites were partly sponsored by the groups from their VSLA contribution, aside the provision of land and labour but the group farms were fully sponsored by the groups mainly through their VSLA contributions.

8.5. STRENGTHEN CAPACITY OF VSLA GROUPS

In addition to the VSLA activities mentioned in section D.1.-3.8., at the FBO level, a total of 2,601 FBO members were trained to form 190 VSLA groups (belonging to FBOs). Topics treated included formation of VSLA and group dynamics, leadership and election of leaders drafting and adopting group constitution, record keeping & Share purchases and developing of policies and rules for social fund.

Within the course of the year, ADVANCE continued to monitor the operations of the 190 VSLA groups formed from FBO members, out of this, 107 VSLA groups were established by ADVANCE and 83 VSLA groups were adopted from world vision and concern universal. These groups were sensitized and trained on ADVANCE VSLA concept. Monitoring of the VSLA group operations revealed that averagely, the groups saved between GHS 1.00 to GHS 5.00 per share during meeting per their constitutions. Also, the groups contributed between GHS 0.20 and GHS 0.50 as social fund contributions. As at September FY17, the 190 VSLA groups had a total contribution of GHS **747,096.40**, a social fund contribution of **GHS 52,763.90** and had loaned out GHS **142,800.00** as loans to members as investment capital into their production season.



VSLA meeting training at Badukrom in the Kintampo South District



VSLA Meeting at Kpanashee in the Gushegu District

E. PROGRAM SUPPORT

9.0. Gender Program

During the year, the project continued mainstreaming gender and integrate it in all activities. Specific interventions included:

- Building women's business, leadership, and entrepreneurship skills
- Increasing women's access to land for production
- Increasing women's access to ICT, financial services, and improved technologies

In addition, ADVANCE celebrated the International Day of Rural Women and the International Women's Day.

9.1. BUILDING WOMEN'S BUSINESS, LEADERSHIP AND ENTREPRENEURSHIP SKILLS

During the year under review, the project trained 303 female value chain leaders on gender equality and leadership and entrepreneurship. The main objective was to build the capacity of female value chain actors to manage their outgrower schemes and farms as businesses enterprises. Using a participatory adult learning approach, the following topics were discussed: gender sensitization, gender and female leadership (self-awareness, acts of leadership, communication, public speaking, conflict management, planning, time management, and participatory decision making) and entrepreneurship.

As immediate result, 20 of the 150 women trained in the Kintampo zone have taken up new leadership positions in their respective farmer-based organizations which include men and women members. The lesson through these training is that, it contributes greatly to women's empowerment as measured through the Women Empowerment in Agriculture Index (WEAI).

9.2. ACCESS TO LAND FOR PRODUCTIVE WOMEN

During the quarter, 263 OBs (231 males, 32 females) and their outgrowers, traditional authorities, husbands and MoFA staff took part in three meetings that ADVANCE held in three communities in the Upper East and Upper West Regions. The meetings raised participants' awareness on the need to improve women's access to production resources, especially land, to enable them to expand their farms and increase production by having access to fertile lands.

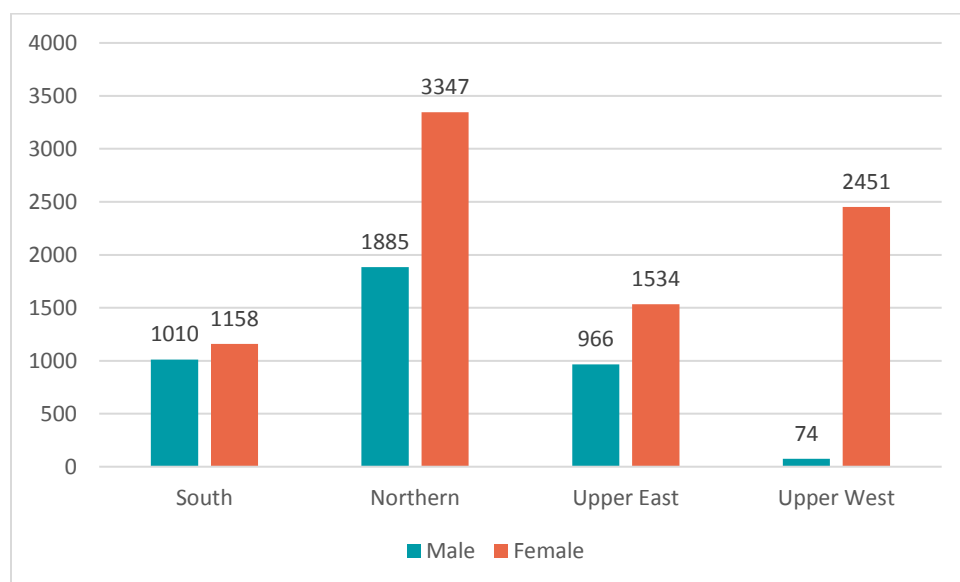
As a result, Nicholas Lambini, OB in the Chereponi District, successfully negotiated with traditional authorities and husbands to secure 500 acres of fertile land for 500 women for production during the 2017 production season. He further provided Triple Superphosphate fertilizer on credit for the women to produce soya and improve their yields and income. In another development, Opportunity International Savings and Loans, through an outgrower scheme with OB Yakubu Hussein in the Gushegu district, supported 23 women small holder farmers to acquire one acre of land each, in addition to ploughing and input support to cultivate soybean.

Furthermore, as previously mentioned, NORTHCODE received a grant from the project to conduct advocacy activities that will increase access to land for 1,000 women.

9.3. WOMEN'S VSLAS AND ACCESS TO FINANCIAL AND PRODUCTION OPPORTUNITIES

To reduce the dependence from OBs support year after year and to further increase women's access to finance and credit for production inputs and small equipment, the project scaled up the VSLA concept to reach an additional 8,490 females across the project zone of operation. This represents about 89% of total beneficiaries of VSLA. The establishment of VSLAs in the project's zones of operation has opened the opportunity towards an improvement in women's access to finance. About 3,935 men smallholder farmers were also targeted for this initiative, thereby closing the gender gap for access to credit by both men and women. See Figure 22 below for graphical representation of regional gender disaggregated data.

Figure 22: Number of Beneficiaries assessing finance through VSLA in 2017 by region and gender



9.4. WOMEN'S ACCESS TO INFORMATION AND COMMUNICATION TECHNOLOGIES

A concept paper has been submitted to the Grants team for consideration to acquire 1,000 low end mobile phones with mobile lines for women to access mobile based extension services provided by Esoko, Voto Mobile etc. These phones come with in-built radios and can be used by the women to access agricultural radio programs aired by partner station, as well as serve as a tool for mobile money activities. Additionally, the project is linking both women and men to mobile phone companies to supply them with low-end moderate handsets and 58 women acquired phones with connected mobile lines in Northern region during the reporting period. 78 women were trained and signed up to the Vodafone Cash platform. Women listenership groups are constantly being encouraged and sensitized on the importance to continue their listenership activities.

Every week between February and March 2017, a soya nutrition message was sent to 2,366 women for a total of 16,828 messages. This comprises of all women who benefited from the weather forecast contract and an extra forty from the price contract. This number is expected to increase in the future with the phone sales promotion being targeted at women to increase the mobile phone/number ownership among women beneficiaries.

9.5. WOMEN'S ACCESS TO IMPROVED TECHNOLOGIES

During the year under review, the project promoted and made available laborsaving technology enhancing equipment such as motorized tricycles, tarpaulins, dibblers, weighing scales, bullock ploughs, harrows, and tractor and its accessories to over 200 women and women FBO groups, and will impact approximately 10,000 women beneficiaries. Some of the equipment was showcased through nine demonstrations and trainings by four local vendors, and made available through the project matching grants program. To further enhance affordability for women, the matching grants for dibblers were reduced to 15% from the usual 30% for women.

Some notable beneficiary groups are the Tuna Cooperative Women who received in addition, a tractor and accessories, Collaborative Mothers Group from Nakolo in the Kasena Nankana District, Bowku Women Association in the East Mamprusi, and Binaba Women Group in the Bawku West District. Each received motorized tricycles. This equipment serves as a means of transport, reduction in drudgery and time spent on the field, yield increase, and above all income generation for the groups.

“ADVANCE has relieved us from a heavy burden which we have endured for years. We shall ever be grateful”. ~Janet Ali, Collaborative Mothers Group FBO leader

“With the acquisition of this implement we can now expand our farms as we can transport ourselves and produce, to and from our farm”. ~Victoria Asaaro of Binaba Women’s group

9.6. INTERNATIONAL DAY OF RURAL WOMEN

The United Nations’ (UN) International Day of Rural Women (IDRW) recognizes and honors the role of rural women on October 15th each year. It recognizes “the critical role and contribution of rural women, including indigenous women, in enhancing agricultural and rural development, improving food security and eradicating rural poverty.” This day was established by the General Assembly in its resolution 62/136 of 18 December 2007.



Awardees of 2016 International Day for Rural Women

As an agricultural enhancement project working to improve the lives of women in both urban and rural environments, ADVANCE sees IDRW as a platform to showcase its contribution to rural food security, and the empowerment of women along the three value chains. The project celebrates contributions made by distinguished women value chain actors in enhancing rural life, and encourages many other women to aspire to such positions by increasing their productivity and that of their fellow women.

During the reporting quarter, the project honoured four distinguished women from Upper East, Upper West, Northern and Brong Ahafo Regions. They were Mary Anabiga, Fulera Adamu, Constance Ankomah, and Mary Azongo. Each was presented with a citation and a token present for their contribution to improving the livelihoods of smallholder women farmers by supporting them to adopt productivity enhancing technologies that increased their yields and incomes

9.7. INTERNATIONAL WOMEN'S DAY CELEBRATION

ADVANCE joined thousands around the world on March 8 to celebrate this year's International Women's Day with the theme "Women in the Changing World of Sustainable Agribusiness" at the Nkoranza District in the Brong Ahafo Region. This year's event was jointly celebrated with the USDA funded Ghana Poultry Project (GPP) implemented by ACDI/VOCA. It recognized and celebrated women, especially women farmers, in speeches, role plays, solidarity messages and awards.

The event was hosted by ADVANCE's OB beneficiaries, Mary Alamisi Azongo, Margarete Asabea, and Kandida Subertahiru, and brought together about 350 women and men in and around Brong-Ahafo and Ashanti Regions. In attendance were the Chiefs from the Nkoranza traditional council and representatives from the Ministry of Food and Agriculture, the District Assembly and the District Health Directorate.

Smallholder farmers linked to Mary Azongo and GPP staged a drama highlighting technology adoption, good agronomic practices and benefits of a smallholder farmer working with an OB scheme in the ADVANCE model. The GPP's skit highlighted an educational health message and benefits of egg consumption to pregnant mothers and children under the age of five.

ADVANCE awarded three distinguished individuals and a group for their outstanding performance in appropriate use of inputs, support in setting up demonstrations, application of improved technologies and management practices, timely repayment of credit and regular attendance to meetings. They each received a manual dibbler as their award. The Donkro Nkwanta Farmers group was adjudged the best group, Mary Alamisi Azongo, the best OB, and Baffouaa Appiah, as the best smallholder farmer.

A smaller celebration took place at Fielmua, in the Sissala West District of the Upper West Region. The event was hosted by OB Hajia Maria Kobzie. It highlighted the important contributions women were making especially in agriculture, to sustain their families and the nation. A total of 130 farmers attended, including 93 females and 37 males from six selected farming communities under her operation.

9.8. ADVANCE BENEFICIARY RECEIVES 'STOP HUNGER AWARD'

On March 8th, Lucilla Dayuori, OB owner and leader of the Tuna women Development Project, received the Sodexo Women Stop Hunger Award in Paris, France. The award came along with a €10,000 prize.

An additional fund-raising activity was initiated following her appeal to support the Tuna women's group to the organizers and attendees and this resulted in raising an additional amount of almost €9,000. The immediate impact of award money, was investing in the procurement of a tractor and its accessories and manual dibblers through the project grant.



Lucilla (center), proudly holding her Award

10.0. Environment Support

In addition to the climate smart initiatives mentioned in section D.1.-3.10, ADVANCE environment support efforts are twofold:

- Ensuring compliance with Title 22 of the Code of Federal Regulation, section 216
- Improving agrochemical management among project actors

10.1. GENERAL ENVIRONMENTAL COMPLIANCE

PERSUAP

This year, ADVANCE secured approval for a second amendment to the PERSUAP. This amendment specifically sought to the approval of insecticides for the control of Fall Armyworm.

The total number of approved active ingredients are now based on the Ghana ADVANCE II PERSUAP, 2016. Amendment #1. Approved 5/11/2017 ([ECD Link](#)), ADVANCE II PERSUAP Amendment 2: Additional Insecticides for Fall Armyworm (FAW) Management. Approved 5/25/2017, and the Bureau for Food Security Programmatic PERSUAP for Fall Armyworm Management in Africa ([ECD Link](#)), Ghana_ADVANCE_PERSUAP_071812 ([DOCX](#)) ([PDF](#)), approved 07/18/2012.

A total of 39 active ingredients are approved. They are made up of 20 insecticides, three fungicides and 16 herbicides. A total of 94 commercial products with these active ingredients are available on the market and approved for use by the Ghana EPA. They are made up of 40 insecticides, six fungicides, and 48 herbicides.

Environmental Screening of sub- grant applications

Two rice mills (AMSIG Resources Ltd and Nyebu Bi Yoona Processing Centre) were screened for sub awards to upgrade their facilities. Environmental concerns were minimal and related to the following:

- Inadequate fire safety and first aid plans.
- Occupational health and safety.

Recommended mitigation actions were as follows:

- Workers receive fire safety instruction from the Ghana National Fire Service.
- Fire safety procedures are put in place with guidance from the Ghana National Fire Service.
- Enough and appropriate number of fire extinguishers are planted at appropriate places in the premises and workers are instructed on their proper use.
- First Aid kit is on-site, as well as someone familiar with its use and trained in basic first aid.
- All workers receive a safety and health induction that explains safe work practices, the proper use of personal protective equipment, and their safety and health protections under law.
- A written policy in place regarding worker health and safety and commitment to compliance with the Labour Act.

Twenty tractor grant applications were screened for potential environmental impacts in line with §216.3 (a) (7) (i) of Title 22 of the Code of Federal Regulation. The screening was done along the potential uses of the tractor including land preparation, threshing/shelling, carting of goods, pesticide applications by boom sprayer, and tractor maintenance. Each activity was measured against the potential to impact soils, water, air, flora, fauna, human health, climate, and the socioeconomics of people. The following potential concerns were identified after analysis:

- Potential erosion and agrochemical drift from farms into rivers and streams.
- Challenges with disposal of spent engine oil.
- Potential soil erosion for farms located on hills.
- Lack of/or inadequate tractor operator's license.
- Inadequate protective gear for tractor operators.

Environmental review reports detailing mitigation actions to be carried out were completed for each applicant. The proposed mitigation actions included the following:

- Ploughing should be done only for farms that meet the requirements of the Riparian buffer zone Policy 2011 which require farms to be at least 10m away from the banks of rivers.
- Farms that are near water bodies should maintain a grass strip of at least 1m in-between plots.
- Tractor Grant Applicants whose Operators are not properly licensed should at a minimum started the process of the process of licensing at the time of taking delivery of the tractor.
- Acquisition of basic protective gear including hand gloves, nose masks, eye protection gear by applicants.

The project will work with each applicant to put in place systems and structures that allow for the mitigation of the potential environmental concerns peculiar to them.

Pesticide use monitoring

During the reporting period data from pesticide use monitoring on demos was compiled and analyzed for 278 demos in the three Regions of northern Ghana covering the 2016 crop season. This activity was to monitor progress of implementation of the Safer Use Actions of the PERSUAP. The summary of the findings was as follows:

Pests and diseases: Nine different insect pests were recorded on demos. Maize demos were the most affected while rice demos were the least affected. Armyworms affected 79 maize demos most of which (62 demos) were in the Northern Region. Black ants affected 38 maize demos and 28 soya demos. Upper East did not record black ant infestation on demos. Other insects recorded were aphids, beetles, brown stink bug, hoppers, locusts, leaf miners and termites.

Bacterial and viral diseases affected 52 demos: 26 in Northern Region, 20 in Upper West and six in Upper East. The diseases were dwarf mosaic, leaf mosaic and maize streak virus disease.

Striga affected 18 demos: eight in Northern Region and 10 in Upper East Region. Upper West did not record striga on any demo. This is a significantly higher incidence than previous years. Crop rotation is one of the topics that will be emphasized during GAP trainings in 2017 crop season, given the increased incidence of striga.

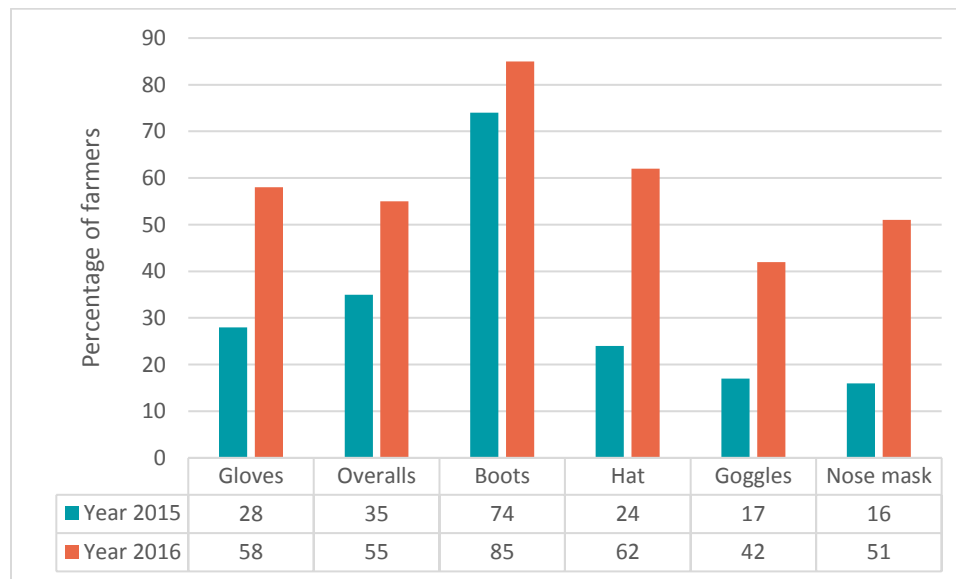
As many as 104 demos were affected by animal pests (domestic and wild animals), fairly distributed across the regions, with the highest in Upper West (48) and the lowest in Northern Region (28). Goats were the biggest culprits, affecting 39 demos, mostly in the Upper East Region.

Pesticides used: Ten active ingredients made of six herbicides and four insecticides were used in 373 instances on demos. Glyphosate was used in 272 instances while Lambda-cyhalothrin was used in 76 instances.

Personal Protective Equipment (PPEs): Generally, there was an increase in the number of PPEs owned by farmers. Particularly, there is a significant increase in the proportion of farmers who now have nose masks and goggles compared to last year from 16% and 17% to 51% and 42% respectively Figure 23 below shows the margins of increase for various PPEs among farmers.

Pesticide application: A greater proportion (98%) of farmers applied pesticides either in the morning or evening. Only 2% of farmers applied pesticides in the afternoon. Except for one boom sprayer all other applications were by a back-pack sprayer. Patronage of SSP services on demos and by famers who hosted demos increased. Thirty-nine (39) demos patronized the services of SSPs while 38 farmers who hosted demos patronized the services of SSPs for their own farms.

Figure 23: Comparing farmer ownership of PPEs in 2015 and 2016



10.2. IMPROVING AGROCHEMICAL MANAGEMENT

Formation and training of Spray Service Providers (SSPs)

A total of 575 persons linked to 204 Outgrower Businesses were trained as Spraying Providers and supported with equipment as follows:

Table 37: Number of Spraying Service Providers supported in 2017

Region	Number persons trained	Number of persons supported with equipment	Number of Outgrower Businesses involved
Northern Region	194	194	97
Upper West	123	94	43
Upper East	123	123	30
South	85	85	24
Kintampo	50	50	10
Totals	575	546	204

In collaboration with the Plant Protection and Regulatory Services Directorate of MoFA, the SSPs were trained in the following topics.

- Definition of Pesticides
- Classification of Pesticides
- Understanding of product label
- Pesticide Poisoning and First Aid
- Personal Protection Equipment (PPEs)
- Use of Knapsack and Calibration
- Disposal of Empty containers and Obsolete Pesticides
- Practical demonstration on rinsing of empty containers
- Record Keeping
- Practical demonstration herbicide application

Four hundred and ninety-six individuals were supported with a 16 L Knapsack sprayer, an overall coat, and a pair of chemical resistant hand gloves (representing 70% of total cost of equipment and PPEs). The beneficiaries provided a leverage of wellington boots, goggles, respirators and a set of large plastic bags for retrieving empty pesticide containers after spraying (representing 30% of total cost). Twenty-nine individuals were not able to raise their part of the leverage to receive the equipment support.

a. Impact of Spray Service Providers

Records were compiled from 364 individuals over an average period of one month. They generated a total revenue of GHS 169,555.50. The total investment in cost of spray equipment and PPEs per person was GHS 357.00; thus, the total investment for 364 persons was GHS 129,948.

Therefore, the total gross revenue generated in a month was GHS 39,000.00 (i.e 169,555.50 – 129,948). This represents a return on investment of GHS 1.30 for every GHS 1.00 invested in only one month.

Table 38 below provides a summary of the number of acres covered, number of empty pesticide containers safely disposed of and the number of smallholder farmers served.



A sprayer at work

Table 38: Summary records of SSPs for one month

Region	Total acres sprayed	Number of bottles used	Number of farmers served			Amount Realized	Number of Persons	Wage per person
			Male	Female	Total			
Northern	7,310	6,168	2,275	2,021	4,284	49,833.00	110	453.03
Upper East	3,875	2,140	346	188	1,151	22,123.00	71	311.59
Upper West	2,123	2,067	538	129	667	24,012.50	43	558.43
South	4,669	3,357	1,126	612	1,738	62,753.00	96	653.68
Kintampo	1,143	2,013	421	336	757	10,834.00	44	246.23
Totals	19,120	15,745	4,706	3,286	8,597	169,555.50	364	465.81

11.0. Grants Program

11.1. INNOVATION AND INVESTMENT INCENTIVE GRANTS (I-3)

The Small Equipment Grants (SEG) scheme continues to be the most effective, simple and affordable equipment grant strategy used by ADVANCE to reach out to most of the farmers to promote the adoption of modern technology in production post-harvest handling and processing of Agricultural produce. In the reporting year, about 933 pieces of small agricultural equipment valued at \$197,732.58 (GHS 842,934) were awarded to farmers working with the project zone.

The equipment includes tarpaulins, weighing scales, moisture meters reapers for postharvest handling and manual planters, dibblers, bullock ploughs and harrows to aid production. To encourage an uptake of dibblers by women farmers, leverage for these was reduced to 15%. Sixty-six motorbikes and tri-cycles were also approved by USAID to support out grower.

Table 39: Granted equipment by type and region

TYPE OF EQUIPMENT	NORTHERN REGION	UPPER EAST REGION	UPPER WEST REGION	ADVANCE SOUTH	Total
Tarpaulins	177	98	97	121	493
Weighing Scales	23	9	9	11	52
Dibblers	38	100	188		326
Manual Planters	13	-	4	-	17
Moisture Meters	6	1	1	1	9
Bullock Ploughs	-	29	-	-	29
Harrows	-	3	-	-	3
Reapers		2			2
Donkey Carts	-	2	-	-	2
Motor Bikes	12	6	5	6	29
Tri-Cycles	20	14	3		37
TOTAL	289	264	307	139	999

Tractor Grants

Reliable and timely land preparation has always been major hindrances to production for out grower businesses and their outgrowers due to limited availability of tractors during the planting season. The northern sector has a single cropping season each year and delays in ploughing often lead to reduced yield for farmers. The ADVANCE project targets the mitigation of such risks of untimely land preparation through the award of tractor grants to out grower businesses who will in turn provide ploughing services to their out growers. This has brought about some dramatic results in the areas of increased land size and yields by these OGs.

Twenty tractors and accessories purchased from two vendors were delivered to out grower businesses in the project's coverage area in 2017. In recognition of the need to embrace the concept of climate smart agriculture, all beneficiaries were awarded rippers in place of the usual ploughs. Many other farmers who were trained on the benefits of ripping were awarded rippers through the grants program to sustain the effort of smart agriculture.

A total of eighty-seven shellers/threshers valued at GHS 1,760,141.25 was approved for award to farmers for support in post-harvest handling and processing. The adoption of the use of simple tools such as tarpaulins and shellers/threshers has proven to be extremely valuable in reducing post-harvest losses and obtaining good market value for produce. A priority of the grants program is the award of post-harvest equipment to farmers to support the availability of good quality produce on the market, and increase farmers' incomes.

"I have been managing with my old Farmtrac tractor for the past nineteen years which used to give me problems during the land preparation. I did complete overhauling, changed several parts all to no avail. This rendered me unable to satisfy my out growers. My inability to duly serve my OGs gave me lots of sleepless nights until I was awarded a brand-new John Deere tractor and its accessories from USAID ADVANCE. Since then I have doubled the acreages ploughed for my out growers to 302 acres this year as compared to last year's 150 acres ploughed. I am very grateful to ADVANCE for this massive support".

~Iddrisu Tia, Gushegu District

11.2. LOCAL PARTNERSHIP GRANTS (LPG)

Achievements and progress so far of the below grantees are presented in Section D of this document.

Ghana Agricultural Insurance Pool GAIP: Support for the Ghana Agricultural Insurance Pool (GAIP) was continued in FY17, with the total amount of \$60,000 being disbursed for operational and other field activities. Currently, GAIP has three products namely Drought Index Insurance (targeting smallholder farmers through aggregators), Multi-Peril Crop Insurance (targeting medium to large scale farmers) and Poultry Insurance (targeting the Poultry farmers).

Ghana Grains Council: The Ghana Grains Council (GGC) was provided over \$100,000 of grant funds during the reporting period.

NORTHCODE: Coalition for Development of Western Corridor of Northern Region (NORTHCODE) a local NGO in the Northern Region has been awarded a fixed amount grant of GHS 126,800 to undertake an advocacy survey on "Enhancing Women's Output of Maize, Rice and Soya Value Chains through fostering their access to improved seeds and productive land in Northern Region of Ghana". As previously mentioned, this local partnership grant is aimed at providing close to a thousand women farmers adequate, timely and easy access to, control over and utilization of productive agricultural lands for use in improving their outputs of maize, soya rice value chains by the end of the project.

12.0. Monitoring and Evaluation and Learning

12.1. MONITORING AND EVALUATION

During the reporting period, ADVANCE continued its routine data collection on activities such as profiling, GAP and PHH trainings, and updating its databases and data collection forms. Also, the project focused on completing the second phase of the 2016 annual gross margin survey where data was gathered on production, technology application and farmers' storage systems. The M&E review meetings were held for all M&E staff to update them on new developments in M&E, data verification at regional level and project wide. ADVANCE also undertook an internal data quality assessment during the reporting period.

Data Quality Assessment and Data Verification

ADVANCE performed monthly data verification exercises at the sub-office level to authenticate the data submitted by the technical team during the period. Challenges were highlighted and discussed with all staff involved in the data collection, analysis and filing. Also, the Accra team conducted an internal data quality assessment on the M&E systems and procedures implemented at each sub-office. Findings were shared with the staff and action plans put in place to further strengthen the system.

Database and data collection forms

ADVANCE continues to improve its database. In FY17, the electronic forms in Sharepoint were moved to Access Web App to provide more stable connection as well as offline options to the field team during data entry.

All data collection tools have also been reviewed based on challenges and requests in FY16 and following the recent changes to Feed the Future Indicators. To answer additional data needs, new forms were developed, such as the Village Savings and Loans Schemes monitoring tool, Spraying Services Providers monitoring tool and radio listenership club monitoring tools.

Gross margin data collection

ADVANCE implements its gross margin surveys in three phases. The first phase, conducted right after planting, collects inputs costs, technology applications and sets the demarcation area. The second phase, at harvest, collects the remaining inputs costs and technology application practices, and to estimate yields. The third phase, in April and July is for the collection of sales data of the produce harvested. The second phase of the 2016 crop season gross margin survey ended in December 2016 for the Northern Ghana regions, gathering data from 2,282 beneficiaries. The third phase took place in April-May and July-August 2016.

The first phase of the 2017 gross margin data collection was implemented in May 2017 for ADVANCE North. Due to a different crop calendar, the South zone was able to conduct both first and second phase surveys, the second one ending in September 2016 period. A total of 2,270 farmers were surveyed.

Table 40: Beneficiaries surveyed in 2016 by sub-office and gender

Region	Male*			Female*			Total
	Maize	Soya	Rice	Maize	Soya	Rice	
Northern	217	229	207	95	82	26	856
South	240	0	0	62	0	0	302
Upper East	186	112	278	104	23	72	775
Upper West	177	19	25	99	5	12	337
Grand Total	820	360	510	360	110	110	2,270

Capacity Development

All 58 technical staffs received a two-day training, conducted in each regional office, on the indicator definitions, collection and calculation, report writing as well as navigation through the project dashboard that provides live access to the indicator values. The APOs and the field M&E team were also taken through the Demosys database. UDS interns were trained on the Sales Tracker software and the OBs' data management to support the latter in their record keeping activities.

ADVANCE also held three quarterly M&E review meetings during which achievement and shortfalls were reviewed and specific trainings were provided to help the team better collect and analyze data. For example, the team was introduced to statistical tests and design of mobile based data collection questionnaires.

M&E Review Meeting and Capacity Building

During the reporting period, ADVANCE M&E staff met to review progress with achievements of the project's indicators, data collection, data processing, data analysis and data reporting processes. During the three-day workshop, project achievement and shortfalls for FY17 were reviewed and specific trainings on how to conduct sampling, quantitative and qualitative data analysis, data visualization, were provided to help the team better collect and analyze data.

12.2. LEARNING ACTIVITIES AND KNOWLEDGE FORUM

Annual work planning

The project held its annual workplan review meeting in Sunyani in June 2017. Attended by all projects staff, the event aimed at presenting the previous years' achievements, shortfalls and lessons learned and designing the strategies and activities for FY18.

Technical Review Meeting

In January 2017, the project's team leaders had a three-day workshop in Tamale to review progress and develop strategies to scale impact and sustainability for the FY. During the sessions, FY16 indicators achievement and shortfalls as well as FY17 targets were shared. Findings from five learning studies

implemented in FY16 were discussed and learning topics for FY17 studies identified. FY17 activities and approaches were reshaped accordingly.

Technical Summit

The Technical Summit was held in Accra on 1st and 2nd March 2017 under the theme “Scaling Up Impact and Sustainability”. The objective was to share lessons on ADVANCE and elicit ideas and strategies for scaling up agricultural and economic growth interventions. The two day event brought together over 140 participants including, the Minister of Food and Agriculture Dr. Owusu Akoto Afriyie, the Deputy USAID Missions Director Steven Hendrix, the Executive Vice President of ACDI/VOCA Gevorg Adamyan, officials from the Ministry of Food and Agriculture, Ministry of Trade and Industry, District Assemblies, Government regulators (GSA and FDA), Government Investment Promotion Centre, Other donors: GIZ, USDA, Key Feed the Future Implementing Partners (ATT, Ring, Fingap, IITA, Africa Lead AgNRM, etc), private sector developers and some farmers within the Zone of Influence ZOI. The event was covered by 11 media organizations.

Learning studies

During the reporting period, the FY16 gross margin report which itemized technologies employed and the resulting margins was completed and shared with the technical team. In addition, three studies on three learning topics which employed both qualitative and quantitative study approaches were completed and shared:

- Women beneficiary empowerment: the analysis highlighted the relationship between improved technology adoption, yields, and women empowerment
- OB service provision to OGs: analyzing the number and gender of OGs served by the OBs as well as the number and types of services provided. It showed the level of satisfaction as well of the OGs vis a vis the quality of these services
- Use of shellers and threshers among ADVANCE beneficiaries: assessing the utilization of shellers and threshers among the rice and soybean farmers as well as the reasons of non-utilization

Also, during the reporting period, Research into 6 learning topics identified by the staff during the January Technical Quarterly meeting also commenced with consultants from the Department for Research, Innovation and Consultancy DRIC from the University of Cape Coast and team leaders from ADVANCE. The learning studies are:

- Abilities of Outgrower Businesses (OBs) to Engage Buyers
- Asset Utilization and Maintenance among Grant Recipients
- Economic Impact of Agents on OBs
- The Effect of Numeracy and FaaB on Yield and Income
- Which is More Profitable Ripping or Ploughing?
- Why training is high for women yet application is low?

12.3. GEOGRAPHIC INFORMATION SYSTEM (GIS) AND MAPPING

During the year under review, ADVANCE undertook several activities including, the mapping of, training for and supervision of the gross margin surveys. Maps were prepared to showcase some of ADVANCE's online spatial information through the USAID-METSS platform. The project collated data from NASA's Fire Information for Resource Management System (FIRMS) to produce a map of areas where there have been and the impact of bush fire activities through GIS and Remote sensing.

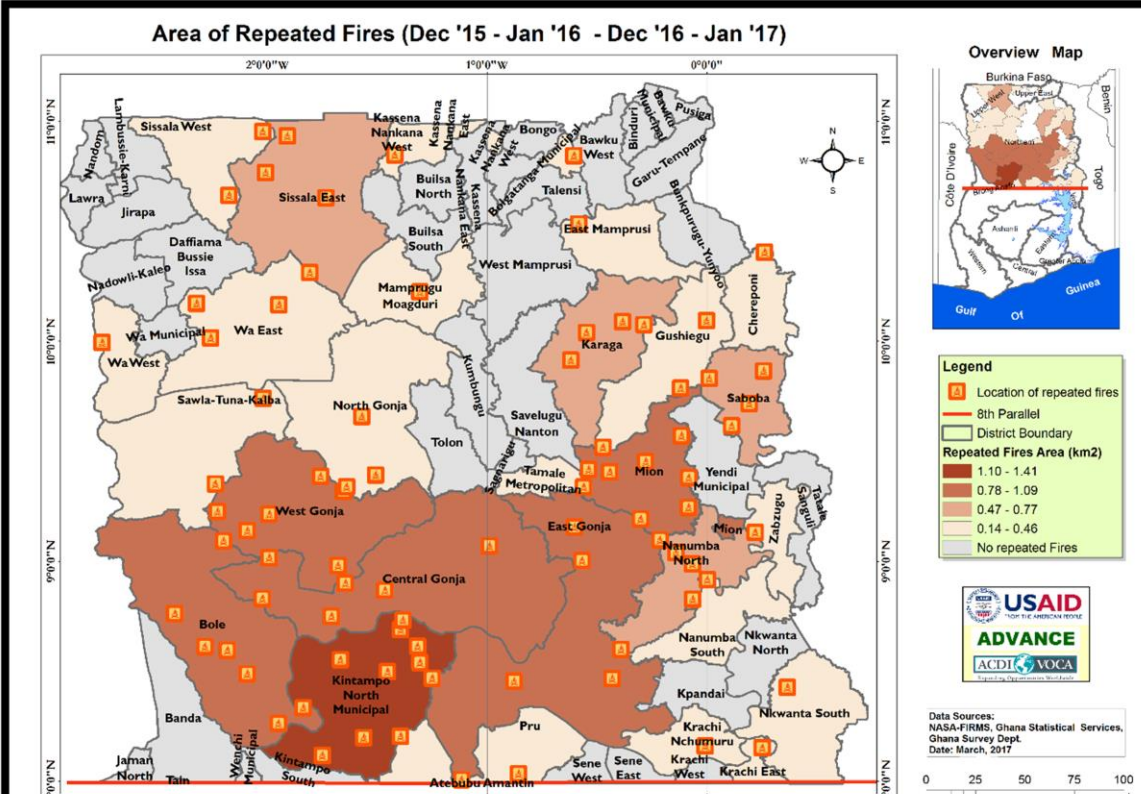
Data on FAW prevalence and variables were collected and mapped to obtain and share the weekly trends of damages being caused by these pests.

Key maps developed and shared with the field team and management include the following:

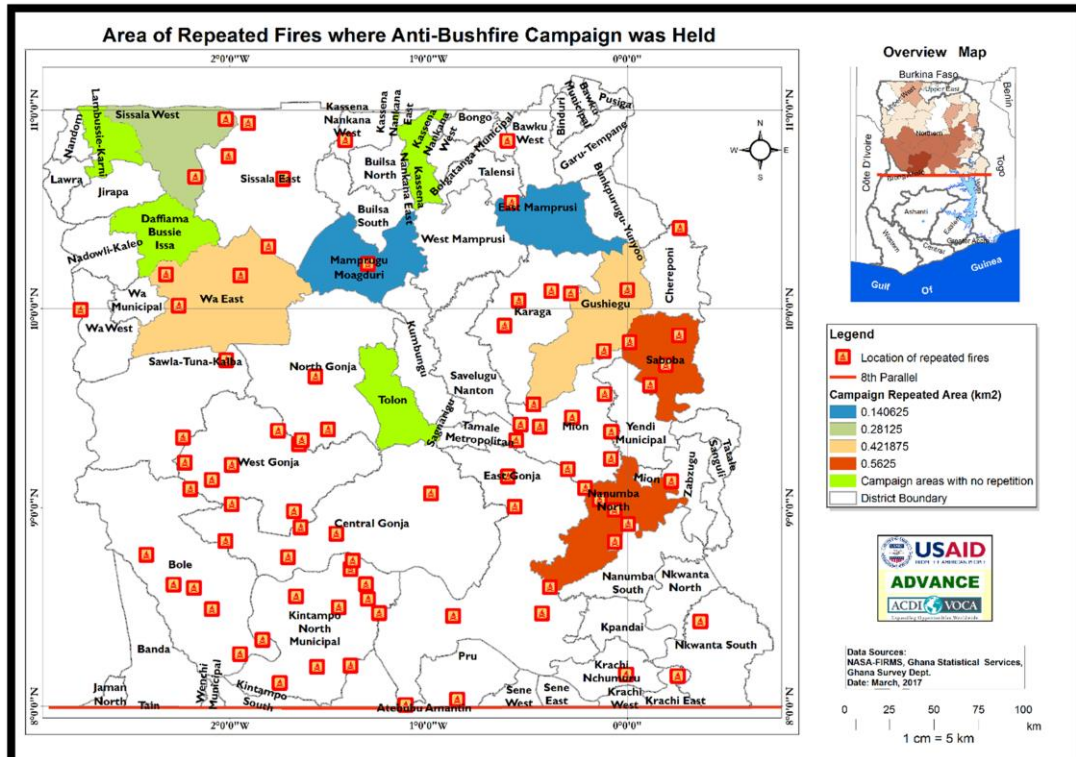
1. 2015 ADVANCE Yield of the three commodities (Maize, Rice, Soya) overlying a Poverty Prevalence Map for comparisons – (3 Maps)
2. 2015 Rice, Maize and Soya Yield Maps of the Statistics Research and Information Department (SRID) of MoFA compared with that of ADVANCE - (6 Maps)
3. Distance Maps between OBs and OGs (4 Maps)
4. Percentage of beneficiaries with phone – (4 Maps)
5. ADVANCE Sheller- OB Spread Map – (4 Maps)
6. Tractor Beneficiary Map for Northern Region
7. ADVANCE Rice Farmers by districts – (4 Maps)
8. Sheller-OB spread Maps – (4 Maps)
9. Commodity Maps in the three value chains – Maize, Rice and Soy - (3maps)
10. Demonstration location and Demonstration type maps - (8maps)
11. Anti-Bushfire campaign maps - (3maps)
12. Fall Army Worm Pheromone traps map – (4maps)
13. Community Agent location map for Northern Region – (1map)
14. Fall Army Worm Variable Maps – (10maps)
15. Fall Army Worm prevalence call maps – (5maps), amongst others.
16. Four maps for the three Northern regions and one for the ADVANCE South operational zones of “Distribution of Spray Services Providers (SSPs) overlaying farmer population”
17. Updates of actor information maps including aggregators, nucleus farmers and input dealers
18. Demonstration location comparison maps of the three commodities – Maize, rice and soya for the 2014, 2015 and 2016 planting seasons for the four operational zones of ADVANCE
19. 2016 Demonstration location maps for the three Northern regions
20. GGC Warehouse update maps

Access to the online maps are as shown below:

<https://metss.maps.arcgis.com/apps/View/index.html?appid=a79ee150fdc44f5b95d7d955e3d0469f>
<http://arcg.is/2gKL88x>



Map showing areas where bush fire activities were repeated between the period (Dec. 16-Jan.17) and (Dec.17-Jan.18.)



Map showing Areas where there were no repeated fires after anti-bushfire campaign

12.4. PUBLIC RELATIONS AND COMMUNICATIONS

ADVANCE continued to highlight the project’s activities, progress, impact and successes while ensuring visibility of the project and USAID.

Bi-Weekly bullets

During the reporting period, 27 informational bi-weekly bullets were submitted to USAID. The bullets outlined ADVANCE’s key activities, results and impact. The bullets highlighted major field activities such as: International Women’s Day Celebration; ADVANCE’S female Beneficiary winning 2017 Stop Hunger Project Award; mentorship program for outgrower businesses; radio listenership mentoring; demonstrations establishment, GAPs training and input access; spraying services program; digital financing; farmer based organizations management, and capacity building.

They also included how ADVANCE facilitates effective business services, rolls out interventions to combat the fall armyworm invasion, promotes climate smart agriculture, improves efficiency of farmers through grants incentive, expands access to market, and builds the capacity of farmer based organizations on advocacy and agriculture policies. In addition, the bullets also covered monitoring activities on the project’s model farms and joint visits with Regional Directors of the Ministry of Food and Agriculture (MoFA) to model farm sites.

Success stories

Sixteen “Telling our Story” and personal interest stories were submitted to USAID throughout this year. The project developed a success story journal (a compilation of major project success stories) which was added to the pool of existing promotional materials given to the USAID Mission Director during his visit to a model farm in the Brong Ahafo Region.

Quarterly Newsletter

Four “Quarterly Newsletter” illustrating ADVANCE’s continued support and impact were published and distributed to more than 1,000 recipients including partners, clients and actors involved in the project, in both electronic and printed form. The newsletters were also posted on the ACDI/VOCA ASPIREglobal community “Learning Champions” page.

Building up Project Photo database

USAID ADVANCE held its quarterly photo contest among its staff to help build up its photo library for use in various communications. Some of our photos are being used on ACDI/VOCA website. To motivate staff to continually participate in the photo contest, awards were given to the first to third place winners.

Videos

ADVANCE commenced the development of seven videos to showcase the project’s interventions. Two of the videos were completed during the reporting period, approved by USAID and are in circulation. The remaining five are at various stages of completion.

Table 4 | Videos and their completion status

	Title	Subject Area	Status	Remarks
1.	ADVANCE’s adoption of the Ripping Technology	Agriculture Productivity	Completed	Approved by USAID
2.	Demonstration of the steps and importance of Mechanization on farms	Agriculture Productivity	Completed	Approved by USAID
3.	ADVANCE’s market linkages of nucleus farmers to Nestle Ghana	Trade and Marketing	In progress	30% completion
4.	Gazettement of CREMA by-laws in Kunlog District	Advocacy/Environment	In progress	70% completion
5.	Gazettement of CREMA by-laws in Chakali District	Advocacy/Environment	In progress	70% completion
6.	Gazettement of CREMA by-laws in Builsa South_District	Advocacy/Environment	In progress	70% completion
7.	Gazettement of CREMA by-laws in Mamprugu Moagduri Districts	Advocacy/Environment	In progress	70% completion

Building public awareness

The project continued to enhance the visibility of its impact and increase public awareness of USAID's support by publicizing its activities in the media. Within the reporting period, both the electronic and print media covered two major project activities: International Women's Day Celebration, and Technical Summit.

- a. A radio story on the International Women's Day event in Nkoranza in the Brong Ahafo Region was aired on ACHAA FM and ASTA radio stations in Brong Ahafo Region
- b. News on our Technical Summit organized on March 1, 2017, went viral as over 25 news items – in print, online, on radio, and TV, were published by eleven media houses. Some of the news were published under the following themes in the links below:
 1. Ghana seeks to become food basket of Africa (By News Ghana) - <https://www.newsghana.com.gh/ghana-seeks-to-become-food-basket-of-africa/>
 2. Ghana seeks to become food basket of Africa (By China.org) - http://news.xinhuanet.com/english/2017-03/02/c_1136097479.htm
 3. USAID Intensifies Efforts to Boost Agricultural Opportunities (By EIN NEWS) - http://www.einnews.com/pr_news/369056152/usaids-intensifies-efforts-to-boost-agricultural-opportunities
 4. Agric Minister Pushes For More Private Sector Support (By News Ghana) - <https://www.newsghana.com.gh/agric-minister-pushes-for-more-private-sector-support/>
 5. ADVANCE, USAID support more than 100,000 farmers in Ghana to increase productivity (By GhanaWeb) <http://www.ghanaweb.com/GhanaHomePage/business/ADVANCE-USAID-support-more-than-100-000-farmers-in-Ghana-to-increase-productivity-514843>
 6. Ghana's reliance on imports because of uncompetitive Agriculture sector – USAID Chief of Party (Business News 2017, 03-03-17) <http://www.ghanaweb.com/GhanaHomePage/NewsArchive/Ghana-s-reliance-on-imports-because-of-uncompetitive-Agriculture-sector-USAID-Chief-of-Party-523475>
 7. Agric Minister lobbies for more private sector support (B&FT Newspaper, 01-03-17 2017) <http://thebftonline.com/business/agribusiness/23284/agric-minister-lobbies-for-more-private-sector-support.html>
 8. Improve infrastructure in farming communities---Grains Council (B&FT newspaper, March 10, 2017) <http://thebftonline.com/business/agribusiness/23341/improve-infrastructure-in-farming-communities-grains-council-.html>
 9. Ghana Planting for Food and Job policy to cost GH¢560m – Afriyie Akoto (Ghanabusiness news.com, 01-03-2017) <https://www.ghanabusinessnews.com/2017/03/01/ghana-planting-for-food-and-job-policy-to-cost-gh%2a560m-afriyie-akoto/>
 10. Government employs 1000 graduates as extension officers to improve agriculture-Minister/ (Ghanabusiness news.com, 01-03-2017) <https://www.ghanabusinessnews.com/2017/03/02/government-employs-1000-graduates-as-extension-officers-to-improve-agriculture-minister/>
 11. Business Live program-“Interview of the day” with Dr Emmanuel Dormon on low productivity and budget expectations (Joy News, 01-03-17) Video file attached: https://drive.google.com/file/d/0Bw3v0MdeM7_VdHVCa2tNWxNmaGc/view
 12. The USAID Feed the Future ADVANCE is holding a 2-day technical summit in Accra to discuss the future of agriculture inn Accra (GBC RADIO, 01-03-2017). Audio file attached: https://drive.google.com/file/d/0Bw3v0MdeM7_VRzjSb2hJNGFidXM/view

13. USAID Feed the Future ADVANCE has associated itself with government's policy on planting for food and jobs. (GBC RADIO, 02-03-2017). Audio file attached: https://drive.google.com/file/d/0Bw3v0MdeM7_VWEJVZIdfS2RWb0E/view
 14. Ghana rice farmers increase yield – Agriculture is key to Ghana's economy employing almost 50% of Ghanaians. Although it is vital to growth, its share of GDP has decreased in recent years. (West Africa Democracy Radio (WADR), March 5, 2017) Audio clip attached: https://drive.google.com/file/d/0Bw3v0MdeM7_Vc3VIT3RGR2U5TG8/view
 15. Agric Minister lobbies for more private support (B&FT, March 7, 2017)
- c. On April 20, 2017, the Daily Graphic published a story on how well farmers in Wa West District in the Upper West Region have received assistance from one of ADVANCE's outgrower business and a one-time Best Farmer in Wa West District in 2006, Alhaji Seidu Alhassan.
 - d. ADVANCE's fall armyworm training for key agribusiness actors on April 26-27, 2017, in Tamale, received media coverage.
<http://thebftonline.com/business/agribusiness/24404/usaid-advance-trains-key-agric-actors-to-arrest-fall-army-worm-invasion.html>
 - e. ADVANCE's efforts to control the FAW menace was acknowledged and reported by Ghanagogo
<https://ghanagogo.wordpress.com/2017/07/17/fall-armyworm-strikes-again/>
 - f. Other press publications included B&FT's news item on April 28, 2017, on how 140,000 farmers have benefited from USAID interventions are presented in the links below:



USAID ADVANCE trains key agric actors to arrest fall armyworm invasion (B&FT May 11, 2017).pdf



Armyworm invasion must be tackled before it brings hunger (B&FT May 11, 2017).pdf



Farmers receive assistance in WA (Daily Graphic Publication _April 21, 2017).pdf



140,000 farmers benefit from USAID interventions (B&FT April 28, 2017).pdf



Agric Minister
lobbies for more priv.

Communication strategies to support farmers deal with the fall armyworm infestation

To complement the interventions ADVANCE implemented to mitigate the fall armyworm menace in Ghana, the project adopted several communication strategies to reach out to farmers and other stakeholders to enhance farmers' awareness of the worm and the control measures that have been put in place. The strategies included the printing and wide distribution of posters (see samples below).



Fall Armyworm Poster_Community (with new picture_revised).pdf



FAW Poster_For AEAs and OBs.pdf

F. LESSONS LEARNED

An important strategy of the ADVANCE project is to use an adaptive management approach, where the project team consistently assesses the project strategies vis-à-vis the outputs, outcomes and impacts, and consequently adjusts the implementation strategies accordingly, where necessary, to ensure that the desired long-term results are attained in the most effective and efficient manner.

Recognizing the complexity of increasing productivity and incomes of smallholder farmers the project's Monitoring and Evaluation (M&E) system is structured around a data collection and analysis cycle that utilizes a knowledge management and learning environment. The cycle involves a planning, implementation, monitoring, studies and research to learn, and subsequent re-examination of actions. The process also involves a series of feedback loops that provide the project managers and decision-makers with information on the outcomes of their choices, results of past management decisions and on present conditions. Our learning agenda integrates with the project's standard indicator monitoring and effectiveness evaluation methodologies. Feedback and dialogue among beneficiaries is a central component and learning reviews are scheduled to ensure that everyone can continuously examine results and learn from the project's experiences.

One of ADVANCE's key intermediate goals is to improve smallholders' productivity. The project works to achieve this by working through Outgrower Businesses (OBs). ADVANCE has been implementing the OB model since 2011 as one of its key intervention models to build and strengthen a system that will sustainably and significantly increase the agricultural productivity of the project's smallholder beneficiaries and enhance their access to market.

In line with the project's adaptive management policy, knowledge management and learning (KM&L) constitutes an important part principle of managing the project. Therefore, the first step in our planning process is to reflect and assess the reach, depth, and elements of the OB model that should ensure its sustainability. For that purpose, the project team analyzed survey data, routine monitoring data, as well as case studies. Some data was also collected through the annual gross margin surveys, in-depth interviews of smallholders and outgrower businesses, as well as profiling and other data reported by beneficiaries as their experiences with the project. The findings, which are summarized in the rest of this section, has informed the strategies that have been adopted in developing the workplan for the coming year.

Reach of the OB service provision to the OGs

Presently, the project works with 370 Outgrower Business (OBs), 32 of them are owned and led by women. In 2016, on average, an OB was linked to 271 outgrowers (47% women) and directly supported about half of them with plowing services and production inputs on credit. Other support includes post-harvest handling, training, marketing, and transportation service. The most common service provided was plowing, followed by training (extension), then fertilizer and seed credit. The least common ones were shelling and threshing, harrowing, transportation, and warehousing.

The data showed that the provision of service by OBs was significantly influenced by gender ($p < 0.05$). Male maize farmers had 27 percent higher probability of being provided tractor services by an OB than their female counterpart. This percentage increased to 34 percent for the male rice farmers compared with the female ones, while it was 16 percent, for the male soy farmers. The plowing service, the most common service, is billed at 100kg per acre plowed, irrespective of crop. The preference for plowing for the men can be explained by the higher potential profit from serving them as they have larger farms and the tractors can be utilized on a contiguous piece of land rather than driving it to several small fields.

Service provision is also influenced by crop ($p < 0.0001$). Rice and soy farmers had 15 and 35 percent higher chance of being supported by an OB compared to the maize ones. The price per unit weight of soy and rice are higher than that for maize. The prices for soy, rice and maize per 100kg are at \$32.7, \$34.2, and \$23.2 respectively in 2017. Therefore, as the plowing fee does not change for the different crops, plowing a rice field is generally more profitable than plowing a maize farm.

Depth of OB service provision

One of the OB model's assumptions is that the higher the depth of service provision (i.e. the number of services provided to a farmer), the more their productivity will increase, and we have observed this to be true. Among those who received services, 72 percent of the women farmers and 69 percent of the men received only one service. About 18 percent of both gender received two services and between 8 and 9 percent of them received three services.

Table 42: Percentage of farmers by number of services received and by gender

Number of services	Female	Male
1	71.83%	69.41%
2	17.61%	18.44%
3	7.75%	8.94%
4	2.46%	3.77%
5	1.06%	0.84%
8	0.35%	0.00%
Grand Total	100.00%	100.00%

This trend of low depth was consistent across crops and gender (Table 43). However, a higher proportion of maize farmers received two or more services than the rice and soy ones. The exact reason for this is not known and we will follow up to understand this better.

Table 43: Percentage of farmers by number of services received by crop

Number of services	Maize	Rice	Soy
1	63.46%	76.50%	79.45%
2	20.32%	13.50%	17.39%
3	11.59%	7.50%	2.37%
4	4.81%	2.00%	1.19%
5	0.89%	1.00%	0.79%
8	0.00%	0.50%	0.00%
Grand Total	100.00%	100.00%	100.00%

The low depth is also illustrated by the average number of services per farmer at 1.47, varying from 1.3 for female soy farmers to 1.67 for female maize farmers (Table 44).

Table 44: Average number of services per farmer by crop and by gender

Crop	Female	Male	Grand Total
Maize	1.67	1.58	1.59
Rice	1.48	1.30	1.38
Soy	1.23	1.30	1.27
Grand Total	1.44	1.48	1.47

Quality of services

Although the OBs did not provide many services, but when they did, the quality was recognized by the smallholders. Most the farmers rated the services provided by their OBs as excellent or good, whether they were male or female (Table 45). However, more maize farmers than the rice and soy ones rated the OB services as being of average quality (Table 46).

Table 45: Percentage of farmers by reported rating of OB's service quality and gender

Service quality	Female	Male
Excellent	10.56%	12.22%
Good	82.04%	79.07%
Average	8.10%	8.99%
Bad	0.00%	0.00%
Very bad	0.00%	0.28%

Grand Total	100.00%	100.00%
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Table 46: Percentage of farmers by reported rating of OB's service quality and crop

Service quality	Maize	Rice	Soy
Excellent	13.98%	10.55%	8.70%
Good	75.45%	83.42%	84.98%
Average	10.39%	6.53%	6.72%
Bad	0%	0%	0%
Very bad	0.36%	0.00%	0.00%
Grand Total	100.00%	100.00%	100.00%

Payment for services

About 80 percent of the Outgrowers (OGs) reported having fully paid for the services they received. More female rice farmers reportedly paid compared with their male counterpart.

Table 47: Percentage of farmers who reportedly fully paid the services by gender and crop

Crop	Female	Male
Maize	76.11%	80.98%
Rice	84.72%	72.22%
Soy	78.57%	81.10%
Grand Total	78.96%	79.95%

Direct impact of the OB model on smallholders' productivity

The data shows that the smallholders who received services from their OBs had significantly higher probabilities of applying technologies that would increase their yields. For example, benefitting from OB services almost doubled the probability of maize and rice farmers, as well as female soy farmers to use certified seeds compared to those who did not receive services from OBs (Table 48).

Table 48: Percentage increase in the use of certified seeds by gender and crop

Crop	Female	Male
Maize	86%	95%
Rice	102%	91%
Soy	94%	37%

Female maize farmers had a 24 percent higher chance of applying fertilizers when they received services from OBs. This figure went up to 28 percent for the male maize farmers. However, the provision of services by the OBs did not seem to have a significant impact on the adoption of row planting for the maize and soy farmers, nor for the male rice farmers, as row planting doesn't involve much costs. On the contrary, female rice farmers had 103% chance of applying row planting when they were supported by their OBs, likely because they initially lacked the necessary knowledge without the extension services from the OBs.

Similarly, OB services did not influence the application of fertilizers for rice and soy, probably due to the Government's fertilizer subsidy program and the lack of knowledge on the necessity of fertilizers for these crops. Thus, benefitting from OBs' support increased the yield of female and male rice farmers by 23 percent and 52 percent respectively, and increased the female and male soy farmers by 54 percent and 38 percent respectively.

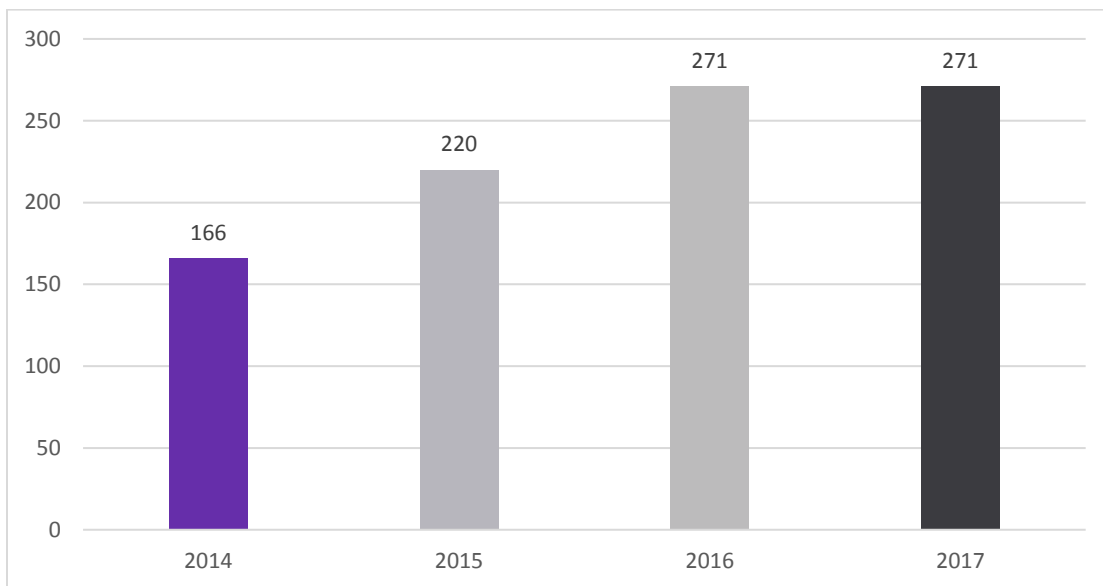
Signs of sustainability

In addition to the findings presented in the above sections, the project has observed signs of the sustainability for the OB model such as the increasing demand for OB services, the OB profitability, and the expansion of services by other actors, which are also key elements of the value chains.

a. Increasing demand for services

The OBs are facing increasing demand from the smallholders. Annually, the number of smallholders connected to each OB increased by 27% (Figure 24).

Figure 24: Average number of smallholders per OB



High demand for improved production inputs and services, including mechanized land preparation, and up-front financing among others. There is room to increase the application of improved technologies among the project beneficiaries as only 42 percent of the FY16 beneficiaries used certified seeds, and 56 percent used fertilizers.

Despite the two to three-fold increase in yields and gross margins across the three crops compared to the baseline figures, the farmers' productivity (at 3.34 MT/ha for maize, 2.84 MT/ha for rice, and 2.17 MT/ha for soy) remains lower than the potential yields. Also, the post-harvest management of the produce needs to be improved. As many as 48 percent of the rice and soy farmers are not using threshers and mentioned that they could not find any, while 41 percent reported they could not afford any. These two issues can be addressed if OBs can expand their provision of such service.

To meet the demand, many of the OBs have significantly expanded their services. Between 2014 and 2016, on average, tractor plowing services grew at 44 percent annually, input credit provision at 28 percent annually, and threshing service provision at 31 percent annually.

From our surveys, the OBs intend to expand even further as 80 percent of them planned to increase tractor services in 2017, 68 percent planned to increase input credit and 84 percent would increase threshing service provision. However, they reported facing challenges hindering their expansion capacity. The top three barriers cited included:

- Lack of finance (mentioned by 75 percent of OBs surveyed)
- Logistics and transport (45 percent)
- Outgrower loyalty (42 percent)
- Weather volatility (42 percent)
- Getting the best price (28 percent)
- Finding ways to grow business (20 percent)

Nevertheless, a certain level of retention of smallholders as customers by the OBs was noticed. Around 89 percent of the OBs reported that "all" or "most" of the farmers they served in 2015 were also served by them in 2016. As many as 92 percent of OBs reported that "all" or "most" of the farmers they supported in 2016 would continue receiving support in 2017. This finding indicates that the OB model has a good chance of being a sustainable model and the project will work to strengthen it further in the coming year.

b. Profitability of the OB

From the service provision alone (without accounting for the sales of the produce a OB sourced from the outgrowers he or she supported), an OB gains over \$1,200 per season. Moreover, OBs' annual revenues increased by 13 percent generally.

The outgrower business as promoted by the project, is a new and growing business model. The project has noticed an increasing number of businesses interested in becoming an OB or making their existing OB more organized, strengthened and professional. In 2016, the project had 125 of such businesses being mentored by 25 experienced OBs, while in 2015, 10 OBs mentored 78 of their new peers. The number

of OBs working with the project shot up from 156 in 2014 to 370 in 2017. About 86 percent of them have formally registered their business.

The number of end buyers involved in the outgrower scheme increased from one in 2014 to 11 in 2016, illustrating its economic interest and profitability. The end buyers invested over \$4.6 million to finance seeds and fertilizers for the smallholder farmers through the OB scheme.

c. Expansion of other actors' businesses

Per USAID ADS 201 Program Cycle Operational Policy, “sustainable development efforts should strengthen local systems inclusive of key local actors, to support their collective ability to produce results over time.” The project therefore pays close attention to all the other business actors operating in the maize, rice and soybean value chains to ensure that the system functions efficiently.

The other value chain actors are also key to the success, growth, and sustainability of the OB model and need to grow as the model reaches more people. Agro-inputs dealerships are growing and increasing the availability of improved inputs to smallholders, especially in remote areas. Yara, one of the largest international input firms which partnered with the project, reported an increase of about 5% of their revenues in 2016 compared with the 2015. Heritage Seeds, a much smaller seed dealer reported significant increase in sales (from 69MT to 98MT of certified seeds) from 2015 to 2016.

Another strategy used by the project to increase farmers' access to inputs through the OB model is community input promotions. Hadiola Agrochemical, one of the input dealers engaged during some of these events reported that their turnover increased almost fivefold, from \$10,870 to \$51,764 in 2016.

Agrochemical spraying service provision has taken off as well, providing valuable services smallholder farmers as well as off-farm incomes for the sprayers. In 2016, 171 young men were trained as spraying service providers and they generated a revenue of \$23,517. In addition to providing the young men an income, it also enabled more farmers to access safer and more efficient spraying services.

Furthermore, transport services are becoming more accessible after the project facilitated talks between the Ghana Private Road Transport Union on one hand, with OBs and buyers on the other, and the latter now benefit from discounted fares.

Other actors such as ICT service providers (e.g. Esoko, Voto Mobile etc.), financial institutions, radio stations among others, have seen an expansion of their businesses or at least more diversification of their products to suit the farmers and OBs' needs.

Applying the learning from these studies

Based on the above findings, the project will support the OBs to increase their reach and depth of their service provision to improve their impact. Examples of interventions will include:

- Sensitizing OBs further on the other potentially profitable and impactful services and strengthen their business management skills and tools

- Training the OBs and supporting them to keep and interpret records to enable them better assess, plan, and strategize on the type and number of farmers they should serve, and the types of services they should provide
- Promoting and facilitating the expansion of the end buyers' outgrower scheme to increase the availability of up front financing at the level of the OBs and the farmers
- Continuing gender sensitization activities with the OBs, the farmers, the communities at large and making the business case for working with women and supporting them grow their businesses.
- Continue supporting farmers to secure other sources of funding and knowledge that will reduce the pressure and the dependency on the OBs (through VSLA, extension services, etc.)
- Continuing the support to women to access land and financial resources

Annex I: Indicator Table

Indicator Source	Indicator Type	Indicator/Disaggregation	FY17 Target	FY17 Actuals	% FY17 Achievement	Comments
CI	OPI	Number of direct project beneficiaries	80,000	103,684	129.61%	The number of farmers supported by the OBs who needed trainings and support was higher than expected
		Male	44,000	53,347		
		Female	36,000	50,337		
FTF	OP2	Number of private enterprises (for profit), producers organizations, water users associations, women's groups, trade and business associations, and community-based organizations (CBOs) receiving USG assistance	450	1079	239.78%	More FBOs than expected requested support through the VSLA and the FaaB/numeracy trainings. More SSPs than planned were interested and thus formed and supported to provide services to smallholder farmers
FTF	OP3	Number of individuals who have received USG supported short-term agricultural sector productivity or food security trainings	60,000	85,384	142.31%	The number of farmers supported by the OBs who needed trainings and support was higher than expected
		Male	44,000	53,347		
		Female	36,000	50,337		
FTF	OP4	Value of agricultural and rural loans	\$1,000,000	\$284,071	28.41%	This year End-buyers and processors did not feel the need to access loans to support their operations, given the high interest rates and experience of the few who defaulted
		Male				
		Female				
FTF	OP5	Value of new private sector investment in agricultural sector or value chain (USD)	\$800,000	\$537,011.82	67.13%	OBs and other value chains invested in machineries such as tractors, rippers, motorbikes, tricycle. However, end-buyers

Indicator Source	Indicator Type	Indicator/Disaggregation	FY17 Target	FY17 Actuals	% FY17 Achievement	Comments
						and processors did little to no investment in installing new plants and machinery to support the operations
FTF	OP6	Number of MSME including farmers receiving USG assistance to access loans	40,000	28,711	71.78%	This is due to the success of the VSLA activities and sensitization, and the limited resources of the OBs as upfront financing by the buyers as well as OBs' access to loans were limited
FTF	OCI	Gross margins per hectare for selected crops US Dollar under marketing arrangements fostered by the activity (USD/ha)				The underachievement is due to lower yields for rice (primarily due to flooding) and maize (primarily due to FAW infestation) and lower selling prices for soya, rice and maize
		Maize	750	759.45	101.26%	
		Male	720	794.05	110.28%	
		Female	810	710.97	87.78%	
		Rice	1250	647.70	51.76%	
		Male	1300	692.35	53.25%	
		Female	1150	588.16	51.14%	
		Soy	600	531.01	88.50%	
		Male	650	571.55	87.93%	
Female	550	503.89	91.62%			
FTF	OC2	Number of hectares under improved technologies or management practices as a result of USG assistance	70,200	72,659.18	103.50%	

Indicator Source	Indicator Type	Indicator/Disaggregation	FY17 Target	FY17 Actuals	% FY17 Achievement	Comments
FTF	OC3	Number of farmers and others who have applied new technologies or management practices as a result of USG assistance	70,200	85,689	122.06%	The project overachieved its number of targeted beneficiaries. In addition, more farmers applied land based technologies such as row planting, the use of improved seeds, fertilizers, minimum tillage through ripping and other non-land based technologies as a result of the trainings and increased availability of the inputs
		Male	38,610	46,091		
		Female	31,590	39,091		
FTF	OC4	Number of private enterprises (for profit), producers organizations, water users associations, women's groups, trade and business associations, and community-based organizations (CBOs) that applied new technologies or management practices as a result of USG assistance	338	783	231.66%	Profitability survey revealed that many private enterprises were applying internal organizational management technique taught by the project to improve business operations
FTF	OC5	Value of incremental sales (collected at farm-level) attributed to FTF implementation	\$16,940,000	\$6,711,608.64	39.62%	Maize selling price and yield significantly decreased due to FAW. Rice farmers produced and sold less than at baseline: 1.49 MT against 1.93 MT on average and sold smaller quantities. In addition, average rice selling price in \$ was significantly reduced, from \$439/MT) at baseline to \$289.57/MT. Maize and Soy selling price decreased from \$350/MT to \$277.74/MT and from \$414/MT to \$288.47/MT and though yield increased, planted plot size decreased
		Maize	\$14,570,000	\$9,831,370.46	67.47%	
		Rice	\$1,780,000	(\$2,647,804.33)	-67.22%	
		Soy		(471,957.49)	-79.99%	

Indicator Source	Indicator Type	Indicator/Disaggregation	FY17 Target	FY17 Actuals	% FY17 Achievement	Comments
			\$590,000			
FTF	OC6	Number of firms (excluding farms) or Civil Society Organizations (CSOs) engaged in agricultural and food security-related manufacturing and services now operating more profitably (at or above cost) because of USG assistance	75	225	300%	More firms have been supported, thus more firms have been surveyed and found more profitable than the previous year
CI	OC8	Number of organizations/enterprises identified as high potential for future awards	5	8	160%	8 Local NGOs trained on grants and procurement regulations of USAID were shortlisted to apply for grants. This is to catch up with the underachievement of this indicator in the previous years
CI	OP8	Number of organizations/enterprises receiving capacity building support against key milestones	20	10	50%	This activity just took off. More organizations will be supported during FY17 to catch up with the delay
F	OP9	Number of awards made directly to local organizations by USAID	4	1	0.25	1 out of the 8 local NGOs NORTHCODE has been granted by ADVANCE to implement an activity
FTF	OP10	Number of Households benefiting directly from USG Assistance		96,850		Target for this indicator is yet to be agreed with USAID
FTF	OP13	Number of members of producer organizations and community based organizations receiving USG assistance	6,750	14,755	218.59%	More members from FBOs were interested in, needed, and received trainings on FaaB and Numeracy

Indicator Source	Indicator Type	Indicator/Disaggregation	FY17 Target	FY17 Actuals	% FY17 Achievement	Comments
FTF	OPI4	Number of MSMEs including farmers, receiving Business Development Services as result of USG assistance	32,000	73,131	228.53%	More farmers than expected needed and received training in Farming as a Business FaaB and Numeracy, grain quality standards checks
CI	OC9	Value chain actors accessing finance	225	155	69.33%	This year End-buyers and processors did not feel the need to access loans to support their operations, given the high interest rates and experience of the few who defaulted

Annex 2: Success stories



SUCCESS STORY

Strengthening Marketing Linkages for Increased Commodity Sales

ADVANCE's Facilitated Market Linkages Has Led to Expansion of Commodity Sales by Outgrower Businesses in the Northern Region of Ghana



Imoro Tiiani by the side of his stored grain in Gushegu

One of the main objectives of the USAID ADVANCE project is to increase market access and trade for maize, rice and soybean farmers in the project's zones of operation. The project's approach to achieving this objective is through a multi-facilitated market linkage approach including trade missions involving buyer and seller business exchange visit, pre-harvest events market or trade fairs and events, transport linkages and capacity development of the value chain actors to participate actively in the value chain.

ADVANCE had assisted 36 outgrower businesses (OBs) and 12 farmer based organizations (FBOs) who

As a result of these linkages, the OBs and FBOs have supplied and sold a total of 3,159.74 MT of maize, paddy rice and soybeans valued at GHS 3,329,314.40 within six months in 2017 commodity sales period compared to GHS 1,100,000.00 in 2016 during the same period.

In pursuit of this objective, since January 2017, are linked to more than 10,080 smallholders in the Northern Region of Ghana to expand trade and market opportunities with formal end market buyers as well as strengthening existing trade relationships. Majority of these end market buyers are in the southern part of Ghana especially Ashanti and Brong Ahafo Regions who need soy,

maize and paddy rice for processing. The end market buyers included Vester Oil Mills Limited, Royal Danemac limited (soymeal processors based in Kumasi), GhanaNuts, Yedent Agro Industries and EGABs Ghana Limited (soymeal and food processors based in Sunyani), Agricare Company, Premium Foods Limited and Agrisolve company (maize buyers and food processors based in Kumasi and Tema). AVNASH Industries Ghana Limited, Nyebu Biyoona, Tiyumba women rice processing centres based in Northern region and Wurawura Rice Company in Volta Region were the major rice buyer.

As a result of these linkages, the OBs and FBOs have supplied and sold a total of 3,159.74 MT of maize, paddy rice and soybeans valued at GHS 3,329,314.40 within six months in 2017 commodity sales period compared to GHS 1,100,000.00 in 2016 during the same period.

Imoro Tijani, for example, is one of the outgrower businesses who has benefited from similar project's intervention on market access. Imoro Tijani joined the project in 2015 with 64 outgrowers but now

expanded his reach to 250 outgrowers in the Gusheigu District of the Northern Region cultivating soya and rice. He was linked to Royal Danemac, one of the major soya processors in Kumasi, in 2015. Imoro supplied and sold 54 metric tons of soy to Royal Danemac in Kumasi for processing into soya cake and soymeal. Currently, Royal Danemac provides pre-financing arrangements to Imoro Tijani for aggregation with a total supply of 119.20 metric tons of Soya valued at GHS 140,935.





SUCCESS STORY

Facilitating Economic Development through Climate Smart Agriculture Practices

ADVANCE Spraying Services Provision Has Contributed to Improved Livelihoods of Youth in Northern Ghana



A spray service provider in his Personal Protection Equipment (PPE) spraying a farm land

The health and safety of farmers especially the vulnerable in farming communities has been one of the prime concerns of USAID ADVANCE. The vulnerable, who are mostly women and children, use crop protection and weed management products to reduce the cost of labor and drudgery involved in current production practices. In northern Ghana, most smallholder farmers now use pesticides without protecting themselves from the hazardous effect of these pesticides. Notwithstanding the economic benefits of using these products, they turn to pose environmental and health risk to users and other natural resources. The effect of the pesticides on the environment has a potential of reducing biodiversity and aquatic

life if not handled well. There have been evidence of food poisoning and many skin diseases attributed to inappropriate use and handling of agricultural pesticides by direct users in the country.

As a response to mitigate the harmful effect of pesticides on users and the environment at large, USAID ADVANCE in collaboration with Plant Protection Regulatory Services Departments (PPRSD) of the Ministry of Food and Agriculture (MoFA), set up and trained 151 young spraying services providers across Northern, Upper East and Upper West Regions of Ghana. These spray services providers were taken through the uses of various products, assembling and servicing of the knapsack. Training also included the importance of the use of personal protection equipment, customer care, and basic records keeping. This was to equip them with the knowledge and requisite skills to provide professional spraying services with a high level of professionalism and expediency.

In 2016, trained spraying service providers offered services for **2,953** smallholder farmers with a total service value of **GHC 64,675**. A total land area of **7,907.5** acres was covered during the same period. Additionally, **7,630 liters** of various assorted products ranging from pesticides and crop protection were used by these spray service providers trained by the project.

The service provision has provided seasonal jobs for the spray service providers who provided these services at a fee. It provided additional income which enabled service providers to increase their productivity through investment into production inputs. Women and children who previously applied these pesticides on their own, now depend on the spray service providers for their spraying needs and thus, reducing drastically their contact with these products. This would largely reduce the effect of the pesticides on their farms, families and the environment at large. The additional income obtained were also used in social activities such as funerals, payments of school fees among others.

Dauda Yakubu is a beneficiary from the Northern Region and he remarked: ***“I was able to generate GHC 2,544 from the 318 acres I sprayed last season. Through this, I was able to buy nine bags of fertilizers to apply on my four acre maize farm. This enabled me to increase my yield from 1.3 metric tons for four acres of maize to 3.9 metric tons. I give credit to USAID ADVANCE for exposing me to a business opportunity within my own neighborhood and providing me with enough food to feed my family”.***

Moving forward to make the spraying services more accessible and available to smallholder farmers, USAID ADVANCE is expanding its spraying services portfolio by training additional 536 sprayers across the three northern regions of Ghana in 2017. Sustainability which has always been the hallmark of the USAID ADVANCE program is not left out in this regard. The project has taken steps to develop dedicated supply chains for these spray service providers by linking them to private sector input firms, telecommunication networks, banks and outgrower businesses to establish business relationships that will inure to the benefit of parties involved in this kind of collaboration.





SUCCESS STORY

Expanding Farmers' Market Access to High End Food Processors

ADVANCE nucleus farmers visit Nestlé Ghana to strengthen business relationship and learn about food safety and product quality



ADVANCE Team and Nucleus farmers in their Personal Protection Equipment (PPE) after a tour to the production plants at Nestle factory

USAID ADVANCE is committed to developing mutually beneficial business relationships between commodity buyers and farmers as suppliers in the maize, rice and soy value chains, and create opportunities for the latter to sell to high end industrial markets profitably. In this regard, USAID ADVANCE executed a Memorandum of Understanding (MoU) with Nestle Ghana Limited, in December 2016, to collaborate and build the capacity of selected USAID ADVANCE maize farmers in the Northern Region to meet the quality and supply requirements of Nestle.

Further to this MoU, Nestle contracted two of three selected nucleus farmers to supply 80 metric tons of maize at GHS 1,400 per ton. To obtain firsthand understanding of Nestlé's production processes, food

safety and grain quality requirements, project's staff and the farmers visited the Nestle Factory at Tema on Friday, June 30, 2017. The three hour visit to the factory included presentations by Nestle on their history, organizational structure and operations, discussions in sourcing grains and other raw materials locally, and a tour of the production floor and measures taken by Nestle to avoid food contamination.

In a presentation by Nestlé's Public Affairs and Corporate Communications Manager, Ama Amoah stressed Nestlé's interest in improving quality and food safety in the maize supply chain and increasing farmers' access to high end industrial markets. She remarked, "Our number one priority is safety". To this end, she revealed Nestlé's excitement about their collaboration with USAID ADVANCE as this would enable farmers increase their yields and also produce to meet Nestlé's quality standards. She cited aflatoxin as the main reason they usually reject maize grains from farmers. Ama was however



Nestlé's Corporate Communications and Public Affairs manager, Ama Amoah, (standing left) making a presentation on Nestlé's organizational structure and operations to the visiting team

positive that through USAID ADVANCE, farmers will adopt agronomic and post-harvest practices to reduce aflatoxin contamination. "Our expectation is that farmers, through USAID ADVANCE's trainings and trade missions, will get the right produce. We buy quality grains. And if it is possible, we will source all raw materials locally", she enthusiastically affirmed. "Let's continue to take USAID ADVANCE trainings seriously so that we can have more aflatoxin free produce from you", she urged the farmers. The Public Affairs Manager also revealed that Nestle was in the process of acquiring Rapid Testing Machines for aflatoxins in Ghana. As part of Creating Shared Value (CSV), the Public Affairs manager elaborated on how Nestle views the well-being of farmers, rural communities and suppliers as vital to their long-term success. She expressed Nestlé's gratitude to USAID ADVANCE for the collaboration. The team toured the cereal, beverage and packaging plants.

The farmers were grateful to USAID ADVANCE for facilitating the visit and expressed optimism that they will adopt the best practices to sustain the relationship. The Managing Director of Kharma Farms, Alhaji Muhib Hussein, asserted: "The linkage with Nestle and the trip has opened business an opportunity which without USAID ADVANCE would not have been possible for me. I am looking forward to expanding my supply to include rice and millet beyond the maize supply to Nestle in future. Knowing from the factory visit that aflatoxin is a serious hindrance to Nestle purchase of maize locally, I am making myself an ambassador to promote the adoption of practices that will eliminate the poison from my grains and that of my smallholder farmers". He urged USAID ADVANCE to continue to build their capacity to enable them consolidate the business relationship with Nestle.

The nucleus farmers who participated in this visit included the Managing Director of Kharma Farms, Alhaji Muhib Hussein; the Operations Manager Kharma Farms, Amin Muhib Kharma; Operations Manager of Kukobila Nasia Farms, Hisham Seidu; Managing Director of Gundaa Produce Co., Alhaji Zakaria Alhassan; and Operations Manager, Gundaa Produce Co., Musah Alhassan. The ADVANCE team included the Trade and Marketing Team Leader, Northern Region Coordinator, Public Relations and Communications Specialist, and Trade and Marketing Officers. Nestle was represented by their Corporate Communications

and Public Affairs Manager, Agriculture Services Manager for Central and West Africa, and Tema Factory Performance Manager.



Community Input Promotion Contributes to Increased Patronage of Input and Sales Revenue

Tang Gomda Enterprise Increased Sales and Revenue through Community Input Promotions in Karaga District of the Northern Region



Fuseini Ziblim, an input dealer, in poses his shop containing inputs such as seed, herbicides and knapsack sprayers

Community inputs promotions are events organized by USAID ADVANCE to increase farmers' access to inputs through bringing input dealers in the communities when the farmers' Village Savings and Loans Associations are sharing out their savings.

The project worked with input dealership Tang Gomda Enterprise, operated by Fuseini Ziblim to implement the community inputs promotions in Karaga Town, Karaga District in 2017.

Until Fuseini Ziblim met USAID ADVANCE and was engaged on the community input promotion activities, he operated his inputs shop actively in Karaga market days where he competed with other input dealers. Tang Gomda Enterprise was introduced by the project to farmers in nine remote communities where the VSLA share out took place. Close to 400 smallholder farmers, mostly women, used part of their share value to purchase inputs comprising seed, herbicides and knapsack sprayers worth over GHS 20,000 during the period of the promotions. After the input promotion, his daily sales, which was an average of GHC 1,500 in 2016, has increased to an average of GHC 3,200 in 2017 and the shop is always busy. He now covers more than 10 extra communities in the districts serving over 1,000 farmers under the ADVANCE project with inputs including fertilizer, seeds, agrochemical and especially insecticides to control fall armyworm.

Fuseini Ziblim excitingly narrates **"The community input promotion facilitated by ADVANCE is very good. Within two days I made GHS 5,000 of profit from the promotion and since then, the**

community agents made a follow up to my shop to buy more inputs. My sales have increased with the number of people visiting my shop I am very happy and wish to thank ADVANCE for identifying me".

In the bid to further improve on his relationship with farmers and improve on sales, Tang Ngomda has gone ahead to support the establishment of 24 demonstrations on maize and donated 0.1 metric tons of NPK, K-Optimal and weedicides valued at GHS 1,500 to train smallholder farmers in Karaga District.

Project wide, during Q3FY17 only, ADVANCE facilitated 160 community inputs promotions with reported sales of GHS 320,616 (\$74,902) by 130 inputs agents.





SUCCESS STORY

Supporting Emerging Outgrower Businesses

Smallholder Farmer Capitalizes on ADVANCE's Business Management Training to Enhance His Outgrower Business Operations

Starting as an outgrower of Gundaa Produce Company where he plowed on credit, Subila, in 2012, set up his outgrower business (OB), bought a tractor, and became an associate outgrower business (OB) providing services to over 100 outgrowers. He christened his OB as Yong Dakpemayili Company Ltd.

The start of Subila's business was shaky. In the first year nearly 30 percent of his outgrowers defaulted. While he waited until the rains to find outgrowers, he also did not work to establish any relationship with them and so most of them did not honor their commitments to repay. According to Subila, he learned one of his most valuable lessons that, in order to be successful, he had to plan ahead and build trust with his outgrowers.



Subila Iddrisu (right) walking with some outgrowers on his farm

"I am looking to help other farmers become OBs, just as Gundaa did for me"

Through the support of ADVANCE in 2014, however, his field agents were trained in good agricultural practices. During planting, he and his agents ensured that farmers used the right seed, planted in rows and applied the correct fertilizer. With the support of ADVANCE, also, Subila accessed a loan facility from Sinapi Aba Trust in 2015 to purchase a new tractor. The farmers observed increased yields from the demonstrations conducted by ADVANCE and therefore heeded to the practices.

True to their anticipation, the benefits have been enormous. Currently, Yong Dakpemayili Company Ltd has over 400 outgrowers in eight different communities, with nearly 40 percent being women. Subila now has a default rate of less than 10 percent on services provided. The company employs two field agents and two part-time machinery operators. In each community he

has a lead farmer who coordinates on behalf of the outgrowers in that community. Yong Dakpemyili sells most of their produce to Gundaa Produce Company, a large aggregator, which in turn transacts with buyers such as World Food Program (WFP) and Nestle Ghana. Hence, Subila sells good number of bags

of maize at very competitive prices. In addition, Subila gets his maize cleaned and re-bagged at Gundaa's warehouse, which was constructed with the support of USAID ADVANCE.

Yong Dakpemyili Company Ltd is expanding in operation and its outgrowers are developing as well. Moving forward, Subila intends to provide some services such as extra plowing services for free. He would also like to grow his business to take on direct marketing.

Outgrower Business Management Training

In 2016 a total of 290 OBs were trained on the ADVANCE seven-module OBM curriculum aimed at educating OBs on proper business management practices with an eighth-module dedicated to female OBs and FBO leaders. The OBM modules were deliberately run along the cropping calendar, so that OBs can have a thorough understanding of how they can plan and operate their businesses efficiently, profitably and sustainably. Each module took two days and participants were given certificates of competency after post training monitoring and evaluation.

ADVANCE designed a tool to rate and categorize the OBs according to their performance along key metrics such as access to end market linkages, service provision, record keeping, accounting systems, access to financial services, outgrower management, asset acquisition and hosting demonstrations. Those who were rated as low performing are being mentored by the high performing OBs, through the OB mentorship program. ADVANCE continues to strengthen OBs with training, linkages and support they need to deliver services to farmers.





SUCCESS STORY

Promoting the Adoption of Climate Smart Practices

An Outgrower Business Demonstrates that Increased Access to Finance Contributes to the Adoption of Climate Smart Practices



Mary Azongo (left) with her husband

Mary Azongo, an outgrower business in Ahyiaem community, began maize trade in 1980 and is currently a teacher at Ahyiaem Junior High School (JHS). Mary has a knack for succeeding at whatever she sets her mind on, including her farming business. In 2010, she decided to return to farming. She cultivated about 10 acres on her own and supported two to five of her neighbors with fertilizers to cultivate their farms.

Mary started receiving ADVANCE's support in 2014. She benefitted from several trainings on Good Agronomic Practices (GAPs), attended maize demonstrations and was introduced to a new way of farming. Later that year, she attended the pre-harvest conference hosted by ADVANCE where she was introduced to Dizengoff, John Deere and Sinapi Aba Savings and Loans.

In 2014, she obtained a GHS 15,000 loan from Sinapi Aba Savings and Loans to support more than 50 of her OGs with pre-financing and was able to pay back in full. As of 2017, she has grown her outgrower network to 145 farmers, providing them with seeds, fertilizers and ploughing services on credit. She also continues her banking relationship with Sinapi Aba Savings and Loans.

*“The agreement
with Sinapi Aba
Trust gave me
confidence to invest*

the scheme is that Agricare was able to commit to a set price. As a trader, she knew one could never depend on price. The commitment from Agricare therefore gave her farmers the confidence to invest.

In the 2016 minor crop season, Agricare expanded the contract arrangement with Mary to more farmers. The rains in the minor season however caused significant losses and many farms were unable to repay. Rather than abandoning the scheme,

Agricare and Mary are planning to reinvest again in the outgrowers in 2017. This is a key sign of the trust which has developed and the resiliency of these commercial relationships to such shocks. It also signals that there is a win-win with both smallholder farmers and companies like Agricare.

Anchored on a good financial base, Mary, with three of her outgrowers, has adopted climate smart practices on a total of 44.5 acres the previous season through minimum tillage practices such as ripping. Now that her farmers are using the right seeds and inputs and are planting correctly, she sees ripping as the next big technology to indulge in. She plans to invest in a tractor and ripper this year. She affirms that such technologies are critical to addressing the impacts that climate change has on farming businesses. When Mary looks to the future she hopes to support other farmers to realize same benefits.

Climate-Smart Practices

The objective of the ADVANCE climate smart agriculture program is to increase awareness and adoption of climate smart practices among farmers and ultimately enhance their productivity and income, make cropping systems more resilient to climate change and contribute to mitigating climate change. The strategy has three focal areas: minimum tillage, cover crop systems and agroforestry. OBs ripped 296.3 acres in 2016 compared to only 9.6 acres in 2015. This year for the first time, OBs commercially offered ripping services to their OGs with the support of ADVANCE and AFGRI Ghana. Three cover crop species – *Mucuna*, *Cajanus*, and *Dolichos* – are being introduced to farmers, in succession and as intercrops with maize. ADVANCE launched No-burn campaigns which to date have reached over 8,970 farmers to highlight the dangers and negative consequences of bushfires. ADVANCE also supported a pilot initiative with Farmer-to-Farmer, Dr. Seth Asare, a volunteer, conducted an assessment of the Sandema Farm and designed a sustainable land development strategy, integrating 200 mahogany seedlings were integrated into the 60-acre farm.



Increasing Access to Finance Through VSLA

The Story of How Suglo Mbori Buni Leveraged VSLA to Secure the Services of a Tractor Operator

In 2015, USAID ADVANCE introduced the concept of Village Savings and Loan Associations (VSLAs) to the women of Kpanashe, a community in the Northern Region of Ghana, to self-mobilize savings towards production. More than 50 women saw an opportunity to work together as a group to save money to implement the farming practices they saw through demonstrations hosted by USAID ADVANCE.



Members of Suglo Mbori Buni VSLA Group

**“With our savings,
we bought**

The Sung Foundation, a local organization, received a grant from USAID ADVANCE to help set up the VSLA groups. The set-up process included training of the executives, establishment of by-laws, implementation of savings and credit procedures, and provision of a lock box to help secure resources contributed. The women divided into two groups, with their name in Dagbani as “Suglo Mbori Buni”, meaning *to seek wealth with patience*. They elected their leaders and began operation. Within the first year of operation, the groups accumulated a total savings of GHS 13,007.

During the share-out in 2016, the period where funds contributed are disbursed, USAID ADVANCE facilitated a community input promotion event whereby representatives from Yara and Heritage Seeds and Input Supplies promoted their products to the community members. Coupled with participation in previous USAID ADVANCE sponsored demonstrations, the women had an increased understanding of the importance of purchasing seeds such as Sanzal-Sima, a drought-tolerant seed produced by Savanna Agricultural Research Institute (SARI), instead of using grains.

Within that same year, 2016, when their outgrower business (OB) dispatched a tractor out to their community to plow their fields, the rains had not yet started in their area, although it was in neighboring communities. As the ground was too tough, the tractor was dispatched elsewhere and they were left without services. The women were concerned as they knew the importance of double-plowing to help retain moisture in the soil. They needed to secure another tractor. Incidentally, they were able to find another operator to plow their lands. The women had an appreciable amount of money saved in their VSLA boxes so they could pay the tractor operator in cash just after he completed work.

These bottlenecks are increasingly common with rainfall variability and the logistical challenges of planning plowing services across disparate communities. Adaptation measures such as building savings as a safety net for when services you depend on fail are important resiliency measures. Hence, ADVANCE is promoting VSLA and a wide range of climate

smart practices to help farmers mitigate the impact of climate change. Suglo Mbori Buni has benefited from this intervention and was therefore able to recover from the shocks. They also managed to earn enough to ensure that they could re-invest next year in improved farming practices.

Village Savings and Loans Support

In 2016, ADVANCE supported financial access and encouraged farmers' savings as a source of investment capital into production. A total of 214 VSLA groups were formed through local partners including Sung Foundation, Youth and Advocacy Rights Organization, Concern Universal and Community Resilience, benefiting 4,890 (1,420 males, 3,470 females) smallholders. The share out of the savings mobilized, was scheduled to coincide with Community Input Promotions, so that they were able to buy the required production inputs. Input dealers who took part in these promotions realized sales of GHS 78,936 (\$20,430). Five hundred more VSLA groups are being established and expected to benefit 12,500 farmers.





SUCCESS STORY

Improved Quality Services Contributes to Large Outgrower Base

USAID ADVANCE Facilitates an OB to Expand His Business by Over 600 Farmers Within Four Years

Enoch Akisiba started his outgrower business (OB) in 2012 with 14 farmers. He had 265 outgrowers in the year 2014 but the number grew to 637 by 2016 with more than 75 percent being women. The reason for such an exponential growth in the number of outgrowers, Enoch believes, is due to the provision of quality services.



Enoch Akisiba in his office

“The key to success is to deliver quality services that”

Enoch believes that customer service is one of the most important criteria to making a business successful. Enoch organizes quarterly meetings with all his outgrowers where he updates them on emerging trends and farming practices. Together with his outgrowers, he sponsors farm demonstrations. While he funds the cost of the demonstration (seeds, fertilizers and chemical input) the outgrowers offer the land and labor.

Through ADVANCE, Enoch learned how to manage his growing business, including how to keep record. He also participated in trainings on good agricultural practices, post-harvest handling, quality and standards, farming as a business, numeracy and the outgrower business management (OBM).

When his outgrowers complained about not being able to find certified rice seeds, Enoch became a seed grower. He receives foundation

seed from SARI and his farm is inspected by the Bolgatanga Seed Company at least three times during the year. He then provides seeds on credit to his outgrowers, with Agra and Jasmin 85 being the varieties

which are high in demand. Enoch plans to invest in a combine harvester to encourage Agra seed production by his smallholders.

Enoch also aggregates on behalf of his outgrowers to offer them a better market. Through a linkage by ADVANCE, he has a contract with AVNASH, a large rice mill, but he notes the standards can be challenging to achieve. Rice is graded based on purity and sometimes the process in agreeing on grades is complicated. In 2016, Enoch delivered 16 metric tons on contract to AVNASH. Enoch anticipates to continue his relationship with AVNASH but is also looking at other markets.

Enoch is optimistic about the future. He expects to further grow his outgrower business. One trend he has noticed is that some of his long term outgrowers are no longer seeking support. Instead they are coming to him to buy his seeds with cash. He sees this as a good development because his business is making a difference in people's lives in a sustainable way. Enoch is grateful to ADVANCE for helping him to improve the quality of his services and expanding his outgrower base.





SUCCESS STORY

Promoting Sustainable Land Preparation Technologies

USAID ADVANCE Adopts Planting Basin as an Alternate Method of Land Preparation for Smallholder Farmers in Northern Ghana



A smallholder farmer in the Upper West Region and his team marking out lines for laying out and digging for a hand dug precision Basin.

USAID ADVANCE has adopted planting basins as an alternative for smallholder farmers who are unable to obtain timely land preparation services such as ploughing and ripping. Hence, it is branded as “manual

What is remarkable is the uniformity of growth of the maize crop on the planting basins. Next year I plan to prepare my 5-acre maize farm using planting basins

Nasir-deen Mohammed (Lead Farmer, Banungoma Community in the Upper West Region)

ripping”. The advantages of basins are enormous. Basins enhance water retention from the first rains of the wet season and enable precise application of both organic and inorganic fertilizer (where available) as it is applied directly into the pit and not broadcasted. Basins help concentrate the fertilizer (manure or chemical) where the crop is planted. Also, maize under basins develop extensive

rooting system that makes them effective in tapping water and minerals required by the plants for growth and development. Incidents of lodging in maize is reduced due to the enhanced rooting system that aids in proper anchoring of the plants to the soil.

USAID ADVANCE has established ten basin demonstration sites in the Upper West Region since June 2017, which are all flourishing. The project's observation on the basin sites as of August 2017 (within two months of establishment) showed that plant growth on basin sites was more uniform in height and abundant than those on conventionally plowed plots. The plants under basin demos had extensive root development, thus making them efficient tappers of water and minerals relevant for plant growth and development, and resulting in healthier looking plants. During short periods of drought, the plants planted in basins thrived while the ones on the plowed field showed serious stress signs. The widespread root development of plants in basins made them more resistant to lodging than conventionally prepared plots.

The participating farmers made interesting observations during top dressing activities at three basin demonstration sites, namely: Bullu, Joleryiri, and Guo. At the three sites, farmers reported that most plants in the basin had new shoots sprouting (tillering) up into new plants with some almost the same size and height as the original plant. These encouraging results are attributable to the suitable conditions including moisture conservation, localized nature of fertilizers in the basin and loose soil created by the basins because the hard pan has been broken.

USAID ADVANCE will continue to promote this conservation agricultural technique in the coming crop season. Approximately 50 more planting basins demonstration fields will be set up in the next farming season, in locations not reached by mechanized land preparation services.



*This farm belongs to a smallholder farmer, Polee-na Mahame, in Joleryiri community in the Wa West District. There are two sets of maize plants shown in this photo. The one on the left is on a conventional plot while the other on the right is a demo prepared with basins. Maize seeds were planted on the same day but the results of plants on the basin demo have high and uniform growth compared to the ones planted on the conventional plot. The farmer, Polee-na, is touching the plant on the basin to show its height. Acknowledging the benefits of the basin, he has avowed: **“if God doesn’t take my life, I can assure everyone that I will adopt the basin technology on my 25-acre land next year. The basin shows good results and is easy to practice.”***





SUCCESS STORY

The Mystery of Slate and Chalk

Beneficiaries of USAID ADVANCE's Numeracy Training Share Perspective on How a Major Reading and Writing Barrier was Broken



Salifu Zalia, a smallholder farmer in West Mamprusi District of the Northern Region proudly displays her chalkboard after writing down her phone number.

One of USAID ADVANCE's main objectives is to increase farmers' productivity and one approach to achieve this goal is to train smallholder farmers to acquire numeracy skills. The numeracy trainings do not only educate individuals on how to count numbers and calculate their income, they also contribute to record keeping and improve the quality of decision making for farming, which in turn increase productivity and profitability. For example: as smallholder farmers are able to identify expiring dates of inputs and also the chemical composition of fertilizer, they are able to make informed decisions about what input to buy.

smallholder farmers in numeracy. As of August 2017,

In 2015, USAID ADVANCE began training the project had trained approximately 40,000 individuals across USAID ADVANCE's four zones of operation. It may be difficult to imagine, but most of these trainees had never learned to write all their lives.

I am able to read the weight of my baby on the weighing scale whenever I take her to the hospital for weighing.

Rebecca, a beneficiary of the numeracy training in Sombo community in the Upper West Region

Learning to hold the pen in their hand and move it to form a number was very challenging at the beginning but remained committed. Salifu Zalia, a smallholder farmer in the West Mamprusi District of the Northern Region, shared:

“It was so hard at first, I was sweating as I tried to write the numbers. But now it feels so easy”

After all the hard work and dedication to learning a new skill, the farmers are proud and grateful to USAID ADVANCE for supporting and facilitating the classes for them. They now attest to practical results of the training and their contribution to the enhancement of their agribusiness. Majority of them can now identify and write numbers, from one to thousand. They can also identify the various denominations of the Ghana Cedi.

Issa Colubu, a male beneficiary of the training in Loagri community in the Northern Region, said that during previous farming seasons, he did not know the total cost of the seeds, fertilizers, pesticides, etc. as he had no way of keeping track of them. This 2017 season however, he has been able to record how much he spends in order to determine whether or not he has made a profit or loss at the end of the season.

Amina Yakobo, another beneficiary of the numeracy training in the Northern Region explained how useful her new numeracy skills have been to her, especially when it comes to expiration dates on bottles of agrochemicals. She narrates that, in 2016, she purchased pesticides at a local shop and after using them on her crops, all the crops died. Apparently, she had purchased expired pesticides, but was not aware of this until after she took the numeracy training course in the latter part of the year. In early 2017, she purchased non-expired pesticides, which are helping her crops to flourish. She is expecting to have a good profit margin at the end of the season.



Issa Colubu displays his tablet, on which he wrote a volunteer's age, followed by his own

In Sombo community in the Upper West Region, one beneficiary, Rebecca Naa, excitedly remarked: “I am even able to read the weight of my baby on the weighing scale whenever I take her to the hospital for weighing”. Another beneficiary in the same community, Yaama, alluded that she now knows that “Mr.” refers to a man. This same beneficiary, after receiving training on how to identify the different denominations of the Ghana cedi, was able to determine that a GHC 50 note given to her by a vendor did not have the security features and hence, raised an alarm.

USAID ADVANCE will continue to follow up to measure the impact of the training and how numeracy skills is supporting beneficiaries to increase agriculture productivity. The project will also reach out to over 11,000 smallholder farmers with numeracy training in 2018.





SUCCESS STORY

Mitigating Fall Armyworm Infestation

USAID ADVANCE implements interventions to support farmers to deal with the fall armyworm infestation in zones of operation



Early scouting and detection of Fall Armyworm infestation of 20 acres of mixed cropping in Jawia in the Sissala West district by USAID ADVANCE team and an outgrower business, Fuseini Meke

Since mid-2016, the Fall Armyworm (FAW)-*Spodoptera frugiperda* infested maize farms in northern Ghana and threatens to impact negatively on the achievements made by the Feed the Future (FtF) initiative, including those by the USAID ADVANCE project. The pest, from the *noctuidae* family, is a menace and can reduce food security as it threatens to wipe out especially maize farms.

As part of the 2016 Farm Clinic activities, USAID ADVANCE recruited an international expert to help control black ants (*Messor galla*) but this coincided with the first observed incidence of the fall armyworm (*Spodoptera frugiperda*). Professor Dan Mc'Grath, an Entomologist was first

recruited as a Farmer to Farmer volunteer in November 2016, to support the USAID ADVANCE project. His support was in twofold: first, identifying the armyworm species and the black ant pest affecting farmers in the three regions of northern Ghana, and second, helping to design a mitigation plan for the 2017 crop season; one that USAID ADVANCE could fund and

USAID ADVANCE has trained and equipped 711 individuals to provide commercial spraying services to farmers. The Ministry of Food and Agriculture is leveraging on the services of these spray service providers to help farmers control FAW on their fields. USAID ADVANCE's Agriculture Production Officers (APOs) have supported input retailers and wholesalers to reach smallholder farmers with USAID approved pesticides considered safe and effective against the FAW.

cover with its own staff and with support from trained Agricultural Extension Agents (AEAs) of Ministry of Food and Agriculture (MoFA).

The following action plans and activities per task have been implemented:

- I. Setting up of an informational system to raise awareness on FAW to reach millions of farmers in the regions of operation.**

- **Radio Jingles:** In May 2017, USAID ADVANCE developed a Radio Jingle in English and 11 local languages to communicate to farmers the threat that the FAW represents and the mitigation actions that are required to manage it. The jingles have been broadcast since mid-May in the south. By June 15, 2017, all other radio stations in the north were broadcasting the jingle.
- **Posters:** Over 37,000 posters were printed and distributed to farmers to give them visual manifestations of what to look out for on their farms.
- **Dedicated Hotlines:** The project acquired three hotlines (**0266222002, 0577662000, and 0201212121**) and put them on the posters for farmers to call in for technical advice. As of 23 Sept 2017, the call center registered 411 calls from 393 men and 18 women. Figure 1 represents the number of calls received on a weekly basis and the severity of FAW infestation of their farms.
- **Maps:** Weekly maps are also developed with the information gathered from the calls to provide locations where farmers are reporting infestations. This allows project staff to focus awareness activities in those locations.



Some female outgrowers observing the effect of fall armyworm on maize

2. **Setting up of a Monitoring and Scouting System in the project's areas of operation**

USAID ADVANCE imported 50 *Heliothis* type traps and lures specific for FAW and African armyworm. Twenty-seven traps were set up in the five regions where USAID ADVANCE operates to monitor the presence of egg-laying moths. After training 53 AEAs, a routine weekly field scouting is conducted to complement moth counts from the pheromone traps. Data collected through the monitoring system are analyzed weekly to determine if an alert should be sent out to farmers in a particular locality to intensify scouting of their farms for signs of the worm and/or the need to take mitigation actions on their farms. Information from eight traps and corresponding field scouts from eight locations across Brong-Ahafo and Ashanti Regions showed a positive relation between moth counts and percentage infestations.

In August 2017, the project shared initial data from the monitoring exercise with Regional and District level MOFA Officials and the AEAs who supported the collection. Given the confidence in the monitoring data generated and its effectiveness in providing information to farmers, the Project in collaboration with CABI has now extending the monitoring exercise to cover the entire country. Thirty-two additional Agriculture Extension Agents were trained in August 2017 to set up and monitor pheromone traps and also conduct field scouting in 32 new locations.

3. **Setting up of an Alert System through radio stations as soon as the pest is detected in the districts.**

Once a high egg laying situation is determined through the field data, USAID ADVANCE communicates the information to the radio stations covering the district and the station makes Live Presenter Mentions (LPM) for a maximum of five times a day for a week.

Further, USAID ADVANCE created an email account (doctorarmyworm@yahoo.com) to receive questions from participants of FAW trainings by Prof. Dan McGrath. Through the e-mail he supports AEAs, PPRSD staff and others who require it. He puts the inquirers in touch with sources of information like the project itself.

Important achievements and lessons

Follow up calls were made to 277 farmers who called into the call center for technical advice. The idea of the follow-up calls was to find out if the status of the farms after receiving technical advice from the call center. The status of farms were classified into poor (virtually no improvement), average (up to 50% improvement), good (up to 70% improvement), and very good (above 70% improvement). Most farmers reported improvements between average to very good.

Important lessons: Most of the interventions carried out so far to support farmers focused more on the growth stages of the maize crops. Our interventions now include the reproductive stages of the crop to minimize infestation of maize ears. Farmers take a while to mobilize money to undertake mitigation actions when FAW infestation is detected on their farms. Because FAW infestation can be very rapid, by the time farmers are able to mobilize to take actions, the infestation has advanced. Therefore, early detection is important to forewarn farmers to start mobilizing.

Next steps

The project will continue with the monitoring of FAW through the off-season to generate information on the presence of FAW moths to inform the type of mobilization that will be required to support farmers. Weekly maps and graphs will be generated and shared with stakeholders to enhance continuous discussions and learning.



SUCCESS STORY

Inspiring Financial Hope and Enhancing Access to Agriculture Production

Smallholder Farmers Save For a Brighter Future through VSLA

Although there are banks in the outlying rural communities, most smallholder farmers do not believe they have enough money to open an account. Also, farmers records of earnings and spending from past farming seasons are usually inadequate and so banks are hesitant to lend to them as there is no guarantee that the farmers will make enough revenue to pay their debt. Hence, it is challenging for smallholder farmers who do not have reliable income to receive inputs from nucleus farmers.

To address this issue, therefore, USAID ADVANCE, in 2015, adopted the Village Savings and Loans Association (VSLA) concept, aimed at encouraging smallholder farmers to develop the culture of savings to purchase input for agriculture production and be economically empowered. Since 2015, USAID ADVANCE has formed 826 VSLA groups with approximately 20,000 beneficiaries across the project's four zones of operation. As of June 2017 (the end of the last cycle), the beneficiaries have altogether saved GH¢ 1,458,444 (\$328,666).



Smallholder farmers expressing their joy during input promotion where they used their Village Savings and Loans Association (VSLA) savings to purchase certified seeds

Beneficiaries of the VSLA have experienced the benefits associated with the intervention and therefore keep thanking USAID ADVANCE for equipping them with “banks” in their communities. They affirm that they can now afford to buy inputs for agriculture production. “We are now able to manage our funds more effectively and end the farming season with a greater profit than before,” Barikisu Batukpere in the Upper West Region narrates. She adds: “We can borrow money from our savings in order to pay for seeds and farming equipment, which results in the use of more effective farming technologies that increase productivity. The interest rate is usually five to ten percent per annum compared to a current average minimum of 29 percent per annum from the commercial banks”.

According to Barikisu, through proceeds from her VSLA savings, she was able to invest in farm input and land for production. This led to a hundred percent increment in the land size of her farm, from two acres in 2016 to four acres in 2017, and is expecting to expand to eight acres in the next farming season. “Using part of my savings of about GHC500, I bought certified seeds, Pioneer, and also patronized a tractor service. I was able to hire the service of a spray service provider at a cost of GHC15 per acre. I expect a total of 80 bags of maize produce compared to the usual 30 that I produced.” Bariku shares.

Besides its contribution to increasing agriculture production, the money saved or loans secured from VSLA are used to pay educational bills of beneficiaries’ children as well as other social needs. For one woman beneficiary in the Fio community, Elizabeth Dassah, her daughter is now in the nursing training college because she could borrow from the group.

USAID ADVANCE will continue to inspire financial hope in the project’s smallholder farmers by providing the needed resources to enable them save for a brighter future through VSLA.



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