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

AGRICULTURAL DEVELOPMENT AND VALUE CHAIN ENHANCEMENT PROJECT (ADVANCE)

FY 2016 ANNUAL REPORT: OCTOBER 2015-SEPTEMBER 2016

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ADVANCE FY16 ANNUAL REPORT

OCTOBER 2015 – SEPTEMBER 2016

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CONTENTS

ACRONYM LIST

(M)SME	(Medium) Small and Micro Enterprise
ACDEP	Association of Church-Based Development Projects
ADVANCE	Agricultural Development and Value Chain Enhancement
AEA	Agriculture Extension Agent
AMPLIFIES	Assisting Management in the Poultry and Layer Industries by Feed Improvement and Efficiency Strategies
APO	Agricultural Production Officer
APSP	Agriculture Policy Support Project
ATT	Agricultural Technology Transfer
BDS	Business Development Services
CSA	Climate Smart Agriculture
DAIP	District Agricultural Investment Plan
EDAIF	Export Development and Agricultural Investment Fund
EPA	Environmental Protection Agency
F2F	Farmer-to-Farmer
FaaB	Farming as a Business
FASDEP	Food and Agricultural Sector Development Policy
FBE	Farmer-Based Enterprise
FBO	Farmer-Based Organization
FI	Financial Institution
FinGAP	Financing Agriculture Project
FTF	Feed the Future
FY	Fiscal Year
GAIP	Ghana Agricultural Insurance Pool
GAP	Good Agronomic Practice
GGC	Ghana Grain Council
GIPC	Ghana Investment Promotion Centre
GIS	Geographic Information System
GIS	Geographic Information System
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
IITA	International Institute of Tropical Agriculture
IP	Implementing Partner
KML	Knowledge Management and Learning
METASIP	Medium Term Agriculture Sector Investment Plan
MMDA	Metropolitan Municipal and District Assemblies
MoFA	Ministry of Food and Agriculture
NAFCO	National Food Buffer Stock Company
NF	Nucleus Farmer
NGO	Nongovernmental Organization
NPK	Nitrogen, Phosphorous, and Potash
NR	Northern Region
NRGP	Northern Rural Growth Program
OB	Outgrower Business

OBM	Outgrower Business Management
OG	Outgrower
PERSUAP	Pesticide Evaluation Report and Safe Use Action Plan
PFI	Partner Financial Institution
PHH	Post-Harvest Handling
PPE	Personal Protection Equipment
PRC	Public Relations and Communication
PTB	Physikalisch-Technische Bundesanstalt
RING	Resiliency in Northern Ghana
SARI	Savanna Agricultural Research Institute
SBDP	Smallholder Business Development Project
SEEDPAG	Seed Producers Association of Ghana
SEG	Small Equipment Grant
SMFM	Sell More for More
SOW	Scope of Work
SSP	Spray Services providers
STTA	Short-Term Technical Assistance
TC	Agricultural Produce Technical Committee
TNS	TechnoServe
UDS	University of Development Studies
UER	Upper East Region
USAID	United States Agency for International Development
UWR	Upper West Region
VSLA	Village Savings and Loan Association
WRS	Warehouse Receipt System

EXECUTIVE SUMMARY

During the 2016 fiscal year (FY16), the project reached out to 83,399 households and 89,565 smallholder farmers, out of whom 41,048 or 45.83% were women. This achievement is 14.82% higher than the target of 78,000 smallholder beneficiaries for the period. These figures brought the total number of beneficiaries reached to date to 102,883 smallholders, or 91% of the life of project target of 113,000.

Trainees during FaaB training

Among the total beneficiaries reached during the reporting period 67,182 individuals (50% of whom were women), were trained in Good Agronomic Practices (GAPs), Post-Harvest Handling (PHH), produce quality standards, Farming as a Business (FaaB), Outgrower Business Management (OBM), Sell More For More (SMFM), numeracy, among others. Women were specifically targeted to benefit from capacity building activities to improve their numeracy, entrepreneurship and leadership skills, and a better understanding of their rights. With this achievement, the project has trained 84,449 individuals representing 84% of its life of project target of 100,000.

Furthermore, 50,163 Medium, Small and Micro Enterprises (MSMEs), 50% of which are women owned or led, received business development services during the year. These services include training, business planning support, access to markets, access to loans and other financial services. Additionally, 731 private enterprises and producer organizations received support from the project. These include training, business development services (access to loans, markets, business planning etc.).

During the reporting period, the project facilitated $1,805,734 worth of loans, compared with the FY16 target of $1,000,000. This brings the project to 84%, or $3,618,909, of its $4,300,000 life of project target. One million Dollars of the loans facilitated was done in collaboration with the USAID-funded Financing Ghanaian Agriculture Project (FinGAP) for upgrading of a major soybean processing company.

ADVANCE facilitated capital investments in FY16 amounting to $1,703,475. These investments include purchasing of tractors and other farm equipment, and an upgrade of a soybean processing plant. Most of these investments were financed through loans. This figure represents 213% of the FY16 target and was achieved as a result of significant investment made by one of the soybean processors by acquiring a refinery and a solvent extraction facility. The investments in FY16 brings the life of project achievement to $2,788,940, or 70% of $4,000,000 target.

In addition to the capital investments, project beneficiaries (mostly Outgrower Businesses and end buyer firms) invested $1,525,451 in production inputs for their outgrowers during the reporting period.

The 2015 crop season gross margins per hectare was $1,107.59 for maize, $876.87 for rice and $528.78 for soya. Maize and rice gross margins were higher than the 2014 season as the average price of maize increased from $268/MT to $368/MT and rice yields significantly increased, from 3MT/ha to 3.98MT/ha. However, the

selling price for soybean decreased from $414/MT to $336/MT. Overall, the project achieved greater gross margins per hectare than the targets for the corresponding period.

On average, the total production per farmer, for the three project crops was estimated at 182.37 MT. A female farmer on average, produced over 54% more than at baseline and a male farmer produced over 91%. The average maize yield in the 2015 crop season was 3.63 MT/ha, rice was 3.98 MT/ha and soya was 1.83 MT/ha. The yields of all the three crops have seen a dramatic increase ranging from 2.05 times for soya to 2.63 times for maize from their baseline values. These increases in yield accounts largely for the increases in total production by project beneficiaries.

The total quantity of produce sold by ADVANCE beneficiaries from the 2015 production season was 165,227 MT, 80% of which was maize, 11% was rice and 9% was soybean. Total sales amounted to $58,742,457. The project exceeded its target for incremental sales of $22,080,000 by 156% with total actual incremental sales of $33,657,429.40.

During the 2015 season, 98.87% or 52,577 of the project beneficiaries applied one or more improved technology and/or management practice. About 44% of these beneficiaries were women. Most of the beneficiaries (51,425, representing 98%) applied land based technologies on a total of 48,275 ha.

Finally, data collected from 215 firms supported by ADVANCE showed that 87% of them were profitable and 56.25% of them increased their profits in FY15.

A. INTRODUCTION

This report presents the achievements of the USAID ADVANCE project during the 2016 fiscal year (FY16) from October 2015 to September 2016. ADVANCE is implemented by ACDI/VOCA and its sub-awardees; ACDEP, PAB Consult, and TechnoServe.

The report details the collaboration that ADVANCE continued to foster with other programs/projects, and the Ministry of Food and Agriculture (MoFA), and includes a summary of the project's key results and outlines the principal activities and accomplishments, organized by the following intermediate results:

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

Finally, the report covers the project's cross cutting activities, which includes gender, environment, grants and monitoring, evaluation and learning, as well as lessons learned throughout the year. The indicator table and all success stories produced during the reporting period are presented as Annexes.

It is important to note that, most activities are implemented in a multi-faceted manner involving many of the sections and therefore, the report has been presented in sections mainly for presentation purposes and in line with the cooperative agreement.

B. COLLABORATION

1. Collaboration with the Ministry of Food and Agriculture

ADVANCE continued to work closely with the Ministry of Food and Agriculture (MoFA) and their Agriculture Extension Agents (AEAs). During the reporting period, 217 staff members of 77 Spraying Service Providers were trained through collaboration with MoFA. On site and off site GAPs trainings of ADVANCE beneficiaries were also conducted with the contribution of the MoFA extension agents where possible.

Thirty-two MoFA AEAs from the West Mamprusi, Tolon and Gushegu Districts, as well as two regional MoFA staff were trained on soy and rice production as they collaborate with the project to train smallholders in the field. Also, the AEAs were trained as trainers on grain quality standards and supported the project to train the smallholder farmers.

ADVANCE made donations towards the Farmers Day celebration for one district per region in the north, and project staff actively participated in the events honoring male and female farmers. Also, 16 MoFA agricultural extension agents (AEAs) from Northern, Upper East and Upper West regions were trained by YARA Gh. Ltd Specialists on soil fertility and nutrition, as part of YARA's collaboration with ADVANCE in setting up demonstration sites during the 2016 crop season.

2. Collaboration with Other Partners

AFGRI-Ghana

The collaboration between the project and private company, AFGRI-Ghana, began in 2014. This year, AFGRI trained over 180 ADVANCE-supported tractor operators and Outgrower Businesses (OBs) on operation and basic maintenance of machinery, and exposed them to various equipment that provide multiple farm solutions. AFRGI also provided the project with a spring-loaded ripper for minimum-tillage land preparation on demonstration sites in the Northern and Brong Ahafo Regions. The ripper was also used in several communities to rip over 110 acres of farmers' fields after they had been trained on the benefits of ripping. The OBs demonstrated interested in the minimum-tillage land preparation technique as it reduces fuel consumption and erosion and helps mitigate some of the risks of climate change. As a result, six of the OBs are in the process of acquiring rippers.

Agriculture Policy Support Project (APSP)

ADVANCE and APSP collaborated to form and strengthen a Farmer Based Organization (FBO) Network in the Upper West Region (UWR) to enhance participation in, and influence on, policy making in the region. Consultations with the leadership of secondary FBOs were jointly held by the projects, followed by a two-day workshop to educate the FBOs on Ghana's key agriculture policies, the importance of policy advocacy and their role in the policy making process. At the end of the workshop the Upper West regional FBO network was formed and an action plan developed.

Agriculture Technology Transfer (ATT)

ADVANCE and ATT's collaboration centered on Climate Smart Agriculture (CSA). Both projects exchanged genetic material for cover crop trials and scaling up and equipment for minimum-tillage techniques for land preparation. Two row John Deere planters were purchased and will be granted by ATT to two selected ADVANCE OBs. These grants will impact both projects' objectives.

AMPLIFIES

During the year, nine ADVANCE FBO beneficiaries in the NR were introduced to the USDA-funded Assisting Management in the Poultry and Layer Industries by Feed Improvement and Efficiency Strategies (AMPLIFIES) project. This will provide the members of these FBOs with an opportunity to supply maize to chicken feed processors.

Grameen Foundation

ADVANCE has scaled up the collaboration with Grameen Foundation in the South to pilot the implementation of the Smartex app, a tablet-based solution for extension service provision. In addition to the current joint intervention in the South, which now has 38 ADVANCE OB users and over 2,300 farmers registered on the platform, 118 ADVANCE OBs and 120 of their agents were trained in northern Ghana to use the Smartex application. Each of the 120 Field Agents employed by these OBs has been granted a tablet loaded with the software and a portable projector to execute the trainings.

International Institute of Tropical Agriculture (IITA/N2Africa)

N2Africa supplied inoculants for over 80 ADVANCE demo sites and samples for farmers to use on their own farms. This is the fourth year N2Africa has actively collaborated with ADVANCE to reach farmers to improve their soybean productivity. The results of this year's soybean demos were very promising. New fertilizers have also been tested, which in combination with the inoculants, are increasing the potential for legumes to fix nitrogen for the plant's use, and lead to higher yields.

MTN

ADVANCE worked with mobile service company MTN to set up a mobile money merchant platform and link it with 15 OBs to facilitate and reduce the costs of their transactions. More OBs and outgrowers will benefit from this collaboration as the team scales up this initiative before the harvest of the 2016 season crop takes place.

Northern Sector Agriculture Investment Coordination Unit

ADVANCE actively participated in the Northern Sector Agriculture Investment Coordination Unit meetings along with representatives from other projects. Meetings in the Upper East Region (UER) started this year and ADVANCE has been one of the projects attending from the inception of that region's group.

Peace Corps

Three Peace Corp Volunteers (PCVs) were placed in host communities in the NR in collaboration with the project. The volunteers were actively involved with ADVANCE in the implementation of activities such as demo site settings, Good Agronomic Practices (GAPs) trainings, and Village Savings and Loans Associations (VSLAs) training and establishment in their host communities. The volunteers are active with internal training as well, they attended the Demo Setting training as well as actively participated in the project's annual work planning meetings

Radio Stations

The collaboration with 25 radio stations in the five regions of the project's operational areas was scaled up the reportingyear with the establishment of and linkage with almost 1,000 listenership clubs. These stations have received training and assistance from ADVANCE to develop and broadcast agriculture programs, from which the clubs are benefitting.

Resiliency in Northern Ghana (RING)

ADVANCE collaborated with RING to establish RING's first minimum-tillage demos in the NR through knowledge sharing and lessons learned during the previous season. Both projects have also exchanged information on planned and implemented gender activities as well as their positive experiences with these activities.

Smallholder Business Development Project

The TechnoServe (TNS) Smallholder Business Development Project (SBDP) and ADVANCE jointly set up CSA demo sites in the NR and UER to show commercial farmers the benefits of mechanization in agriculture. The projects used SBDP's equipment to show farmers the benefits of minimum-tillage and also established two 25 acre model farms in Sandema and Bawku West in the UER.

Soybean Innovation Lab

The Soybean Innovation Lab (SIL), with collaboration and funding from the ATT and ADVANCE projects, organized and executed a Thresher Fabrication training in Tamale. The objective of this workshop was to teach business development as well as the design and fabrication of crop threshers appropriate to smallholder farmers' use, to 12 community-oriented blacksmiths from the UWR, UER and NR. The threshers will be tested and promoted during the harvest period by RING, ATT, ADVANCE and the Catholic Relief Services, which is the partner organization for SIL in Ghana.

Voto Mobile

Voto Mobile is a technology start-up and social enterprise which aims to provide easy communication tools for businesses, government and NGOs to share information and gather feedback through interactive SMS and voice messaging in local languages. Collaboration with Voto Mobile consisted of sending GAPs related mobile

voice messages, based on ADVANCE's crop standard protocols, to over 1,400 farmers in Kintampo North (40% more than the 1,000 farmers initially targeted). After evaluating the impact of this collaboration, ADVANCE will explore options for expanding this pilot to a larger area in the coming year.

University of Development Studies (UDS)

ADVANCE hosted 48 third year students from two departments of UDS. These students assisted OBs in various communities in their operations, especially in the area of record keeping. This offered them the opportunity to learn from their host OB about the operational side of agricultural business.

World Food Program (WFP)

The collaboration with WFP continued this fiscal year. Seventy-five women belonging to a WFP group in Sorugu in the Sagnarigu District were trained by ADVANCE and supported to form VSLAs to enable them to mobilize capital for their farming and other income generating activities.

In addition, WFP Kobli Kom Maize Farmers Association in Gingani were linked to and trained by Bonzali Rural Bank on account opening and management, savings and access to credit.

Yara Ghana Ltd.

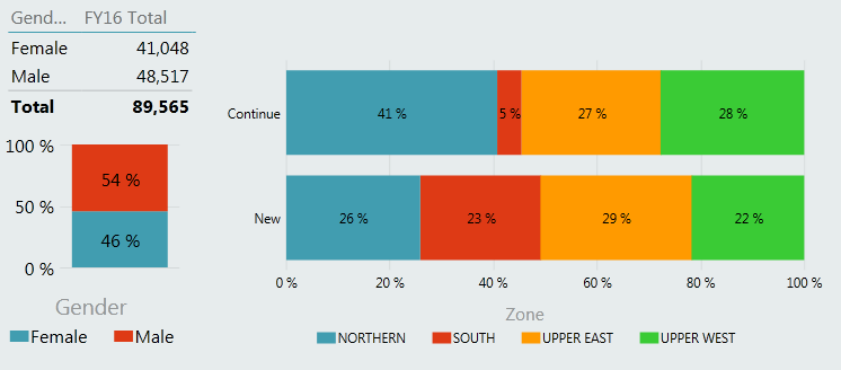
For the second year running, Yara Ghana Ltd. sponsored ADVANCE's demo sites. Yara provided fertilizer for 322 demos in all five ADVANCE operational regions. Yara also trained the ADVANCE team on fertilizer and plant nutrition to improve their knowledge and their capacity to train farmers. Yara increased the number and regional coverage of demos sponsored this reporting year because of the good yields obtained last season and the active Community Input Promotion led by ADVANCE, which has generated increased sales for Yara's fertilizers in a greater number of communities, many of which are remote, in the three regions of the North. The transnational CEO has already contacted ADVANCE on plans for FY17, to scale up through even more collaboration.

C. KEY RESULTS

1. Direct Beneficiaries

During FY16, the project reached out to 89,565 smallholder farmers, out of whom 41,048 or 45.83% were women (Figure 1). This achievement is 14.82% higher than the target of 78,000 smallholder beneficiaries for the year. Out of the total smallholder beneficiaries reached this year, approximately 40.27% are new to the project. Out of these, 40.27%, (8,370 people) were from the Ashanti and Brong Ahafo Regions. Approximately 41% of the beneficiaries who have continued from the previous year are from the NR. These figures brings the total number of beneficiaries reached to date to 102,883 smallholders or 91% of the life of project target of 113,000.

Figure 1: Smallholder beneficiaries by gender and duration



The number of households which benefitted in FY16 was 83,399, out of which, 33,816 (40.55%) were new to the ADVANCE project.

Among the beneficiaries, 67,182, (49.6% women), were trained in Good Agronomic Practices (GAPs), post-harvest handling, produce quality standards, farming as a business (FaaB), outgrower business management (OBM), Sell More For More (SMFM), numeracy, among others. Women were specifically targeted to benefit from capacity building activities to improve their numeracy, entrepreneurship and leadership skills, and a better appreciation and understanding of their rights. This total number of beneficiaries receiving trainings in FY16 was 14.8% higher than the 58,500 individuals targeted for the year (Figure 2). With this achievement, the project has reached 84,449 individuals, representing 84% of its life of project target of 100,000.

Furthermore, 50,163 Medium, Small and Micro Enterprises (MSMEs), 50% of which are women owned or led, received business development services during the year. These include trainings, business planning supports, and facilitated access to loans among others.

Also, 836 private enterprises and producer organizations received support from the project (Figure 3). Most of them are from the NR and UER. In addition, five of ADVANCE's partner organizations and local NGOs were trained on how to manage a USAID award. This is useful knowledge both for their current work as well as future implementation or USAID activities by their organizations.

Figure 2: Training beneficiaries by region and gender

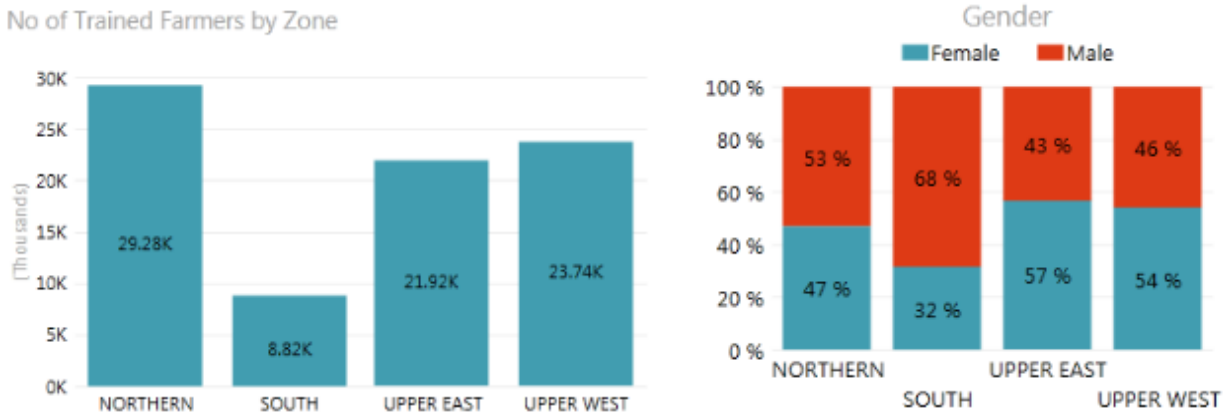
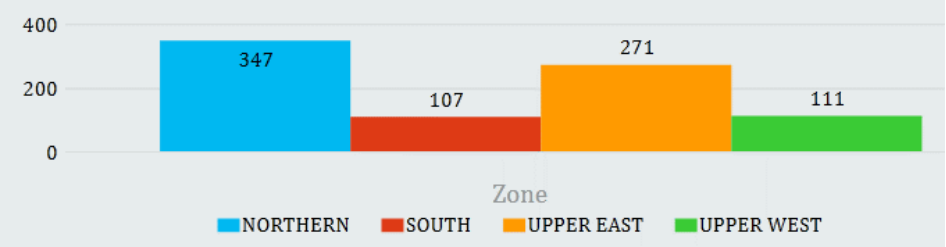


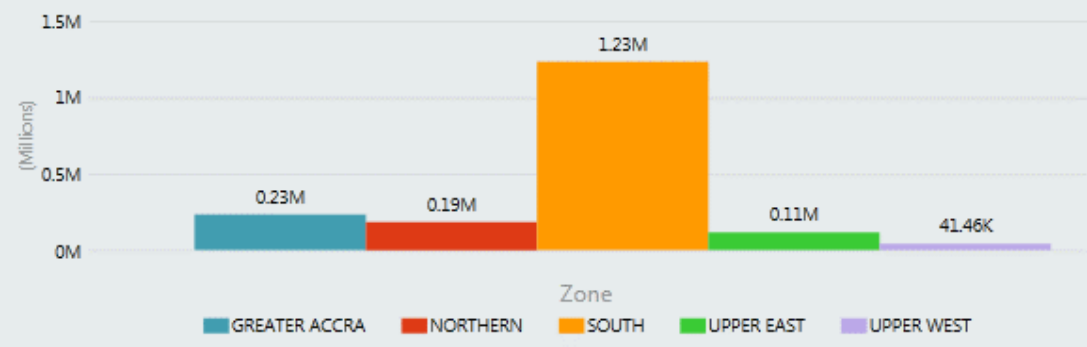
Figure 3: Producer organizations and private enterprises beneficiaries



2. Loans and Investment

During the fiscal year, the project facilitated $1,805,734 worth of loans, which is 80% higher than the FY16 target of $1,000,000 (Figure 4). These loans were disbursed to beneficiaries by financial institutions such as Sinapi Aba Savings and Loans, Opportunity Savings and Loans, Sonzele RCB, BACCSOD and more recently, the National Investment Bank, UT Bank and Capital Bank. The loans were used in part to finance the OBs' share of tractor and equipment grants. A significant portion served as working capital and the purchase of soy processing. Some of the loans were used to fund OB aggregation activities and to purchase inputs for both OBs and their outgrowers. The project has now facilitated a total of $3,618,909, which is 84% of the total life of project target of $4,300,000.

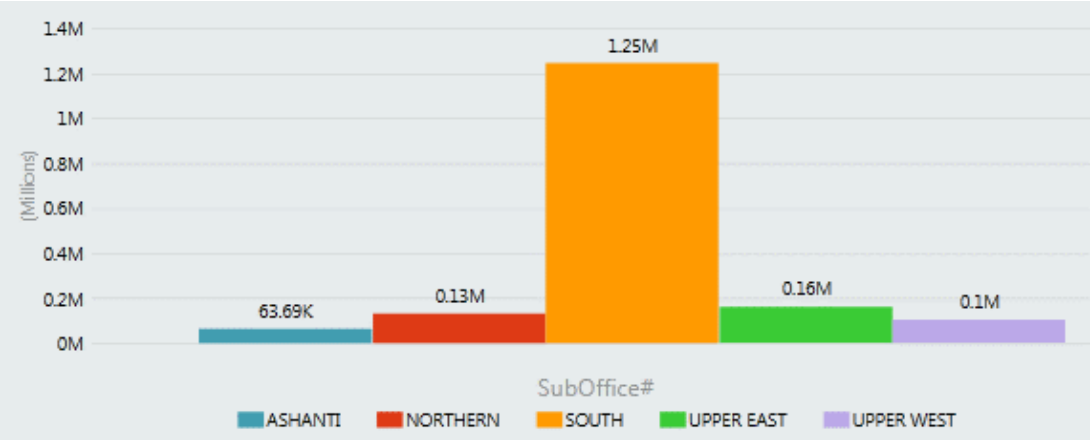
Figure 4: Amount of loans disbursed by zone ($)



The project beneficiaries realized capital investments amounting $1,703,475 during the fiscal year. These investments consisted of purchase of tractors and other equipment, as well as processing plants. An important proportion of these were funded by loans. This figure represents 213% of the FY16 target and brings the life of project achievement to $2,788,940 or 70% of the life of project target of $4,000,000.

In addition to the capital investments, project beneficiaries (mostly Outgrower Businesses and end buyer firms) invested $1,525,451 in production inputs for their outgrowers during the reporting period. The ADVACE Project model encourages supply of certified seeds, fertilizers and other agricultural inputs by OBs to the OGs on credit, for in-kind repayments at harvest

Figure 5: Beneficiaries' capital investment by zone ($)



3. Gross Margin and Incremental Sales – 2015 Crop Season

In compliance with the gross margin survey protocol and M&E plan, ADVANCE conducts gross margin surveys in three phases. The first phase, conducted immediately after planting collects costs of inputs, technology application, and sets the demarcation area for yield determination at harvest. The second phase, at harvest, allows the project to collect the remaining input costs and technology application practices, and to estimate yields. The third phase, implemented in April through July, is for the collection of the sales data of the produce harvested.

Gross margin data collection for the 2015 crop season was completed in August 2016. A total of 3,205 randomly selected farmers were surveyed to collect the required five data points: area planted, quantity produced, inputs costs, volume and value of sales. A summary of the findings is presented below. Detailed findings can be found in the 2015 gross margin report that will be submitted to USAID in November 2016. The data has been extrapolated to the FY15 beneficiaries as required by the guidelines contained in the Feed the Future Indicators Handbook.

3.1. HECTARES PLANTED

The FY15 ADVANCE beneficiaries planted a total of 53,734.17 hectares, of which 31.19% were planted by women. Over 76% of land was planted with maize, 8.91% was dedicated to rice and 14.85% to soya. On average, the area planted by each farmer in 2015 was 1 ha for maize, 0.4 ha for rice and 0.71 ha for soya. Male maize and rice farmers planted twice more than the females while that difference is less (23%) for soya farmers.

3.2. PRODUCTION AND YIELDS

Total production from all the three crops was estimated as 182.37 MT per project beneficiary. Consistent with the high proportion of maize farmers benefitting from the project in FY15 (76.78%), over 81% (148,719 MT) of the quantity produced was maize. Rice production was estimated at 19,061 MT (11%) and soya at 14,596 MT (8%). On average, a maize farmer produced 3.64 MT, a rice farmer 1.61 MT, and soya farmer 1.30 MT. generally, a male farmer produced almost twice as much as a female farmer. The least difference found was among soya farmers with male farmers producing 29% more than the female farmers, while the greatest difference is with rice at 92%, and maize at 87%. These figures illustrate the relative dominance of the men in the farming activity due mainly to the relative ease with which they access production resources.

On average, female farmers produced over 54% more than at baseline and male farmers produced at over 91% more. For maize, a traditionally male crop, women farmers produced nearly 55% more than at baseline on average, while men produced more than twice their baseline production after the project's interventions. For soya, which is culturally a female-produced crop, on average, women farmers increased their production by over 73% while men increased theirs by only 10.37%.

The maize yield was 3.63 MT/ha while rice was 3.98 MT/ha, and soya was 1.83 MT/ha. Women's yields[1] were comparable to the men's across the three crops. Though the yields by the women farmers were lower, the difference was not significant. These results show that women would likely be able to produce as much as the men and therefore increase their economic contribution if they could acquire larger plots and aces production resources to expand their farms. In addition, all crops have seen a dramatic increase ranging from 2.05 times for soya to 2.63 times for maize from their baseline values (Table 1 and Table 2). The lowest increase was for men planting soy, while the highest was for women planting rice and soya.

Table 1: Yields by gender and crop in MT/ha

Gender	Maize	Rice	Soya
Female	3.59	3.81	1.80
Male	3.64	4.07	1.86
Total	**3.63**	**3.98**	**1.83**

Table 2: Baseline yields by gender and crop in MT/ha

Gender	Maize	Rice	Soya
Female	1.31	1.39	0.71
Male	1.39	1.71	0.94
Total	**1.38**	**1.61**	**0.89**

3.3. INPUTS COSTS

During the 2015 farming season, input costs incurred by the FY2015 beneficiaries totaled $11,200,087: 83.44% ($9,344,823) was for maize production, 10.50% ($1,175,697) for rice and 6.07% ($679,568) for soya. Less than 30% ($3,170,955) of these total inputs costs was invested by women.

Maize farmers on average invested the highest amount for production, at $228.89 per farmer, while soya farmers invested the least at $60.46. A male maize farmer invests almost twice what his female counterpart would typically invest (Table 3). The ratio is 1.55 and 1.32 respectively for rice and soya. However, as seen in Table 4 on average, **per hectare planted**, rice farmers invested the most at $245.67, compared to maize and soya farmers, at $228.10 and $85.15 respectively. Female farmers' input costs per hectare planted, were generally lower than the men's, with the exception of rice.

Table 3: Average inputs costs per farmer

Gender	Maize	Rice	Soya
Female	$146.01	$76.86	$53.43
Male	$284.06	$119.24	$70.50
Total	$228.89	$99.01	$60.46

[1] Total production by women divided by total hectares planted by women

Table 4: Average inputs costs per hectare planted

Gender	Maize	Rice	Soya
Female	$218.94	$270.14	$82.80
Male	$231.42	$233.23	$87.83
Total	$228.10	$245.67	$85.15

3.4. SALES

Total quantity sold totaled 165,227 MT, 80% of these sales were maize while 11% were rice and 9% were soybean (Table 5). Total sales amounted to $58,742,457, with 83% from maize, 9% from rice and 8% from soya (Table 6).

Table 5: Quantity sold by crop and gender (MT)

Gender	Maize	Rice	Soya	Total
Female	36,639	5,914	7,614	50,167
Male	95,948	12,627	6,486	115,060
Total	132,586	18,541	14,100	165,227

Table 6: Amount of sales by crop and gender

Gender	Maize	Rice	Soya	Total
Female	$10,840,540	$1,665,192	$2,256,370	$14,762,102
Male	$37,943,268	$3,560,260	$2,476,827	$43,980,355
Total	$48,783,808	$5,225,452	$4,733,197	$58,742,457

Table 7 shows that on average, sales per beneficiary totaled $919. Maize farmer's sales were the highest at $1,195 while soya sales were $421 and rice was $440, which is consistent with the lower quantity produced and sold for those commodities (Table 7). Similarly, as women produced less and sold smaller quantities, female maize farmers earned 2.33 times less than their male counterparts. That ratio was almost 2 for rice and 1.57 for soya.

Table 7: Average sales per farmer by crop and gender

Gender	Maize	Rice	Soya	Total
Female	$664	$294	$341	$516
Male	$1,548	$574	$535	$1,244
Total	$1,195	$440	$421	$919

When compared with baseline sales, a male maize farmer earned over four times more than a female maize farmer (Table 8). A female maize farmer earned almost twice as much with the project's intervention than at the baseline and a female soya farmer earned 39% more. Male soya farmers' sales were stable over time due to the fact that they are planting much smaller plots to be more efficient. At baseline, maize farmers planted 1.42 ha on average, rice farmers planted 1.2 ha and soya farmers planted 1.27. In 2015, however, maize farmers planted 1 ha, rice farmers planted 0.4 ha and soya farmers planted 0.71 ha. For maize, the very significant increase in yield and relative reduction of plot size compensated for the reduction in farm sizes.

For rice and soya farmers, the plot size decrease was more significant: on average, rice yield increased two and half times but plot plots were only a third of the baseline size. Generally, rice farmers produced less than at baseline: 1.61 MT against 1.93 MT on average and sold smaller quantities. In addition, the average selling price for rice, in USD was significantly reduced from $439/MT (Table 9) at baseline to $282/MT. This was due primarily to the devaluation of the cedi from GHS2.66/$1 when the baseline was conducted to GHS 3.8637/$1

this fiscal year, representing a decrease of 145%. The soy selling price decreased from $414/MT to $336/MT. These changes led to negative incremental sales of $1,362,260 for rice and an insignificant soya sales increase. However, this is compensated by the high maize incremental sales total of $34,411,544.53, enabling the project to exceed its incremental sales target of $22,080,000 by 156%, with total incremental sales of $33,657,429.40 (Table 10).

Table 8: Average baseline sales per farmer by crop and gender

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

Table 9: Average selling price per farmer by crop and gender

Gender	Maize	Rice	Soya	Total
Female	$295.88	$281.55	$296.36	$294.26
Male	$395.46	$281.96	$381.87	$382.24
Total	$367.94	$281.83	$335.70	$355.53

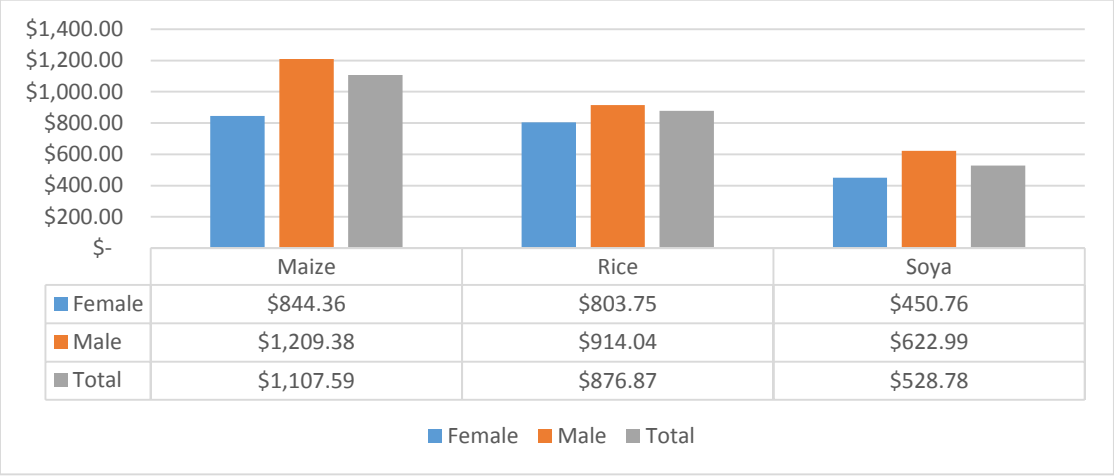
Table 10: Incremental sales by crop and gender

Gender	Maize	Rice	Soya	Total
Female	$5,296,827	$(917,013)	$630,220	$5,010,035
Male	$29,114,717	$(445,247)	$(22,076)	$28,647,395
Total	**$34,411,545**	**$(1,362,260)**	**$608,145**	**$33,657,429**

3.5. GROSS MARGINS

The 2015 gross margins per hectare totaled $1,107.59 for maize, $876.87 for rice and $528.78 for soya (Figure 6). Female farmers achieved significantly lower margins than their male counterparts. This is primarily due to the lower average selling price by maize (34% lower) and soya (29% lower) women farmers (Table 9) and the rice women farmer's lower yields (lower by 7%, Table 1) and higher inputs costs (higher by 16%,Table 3).

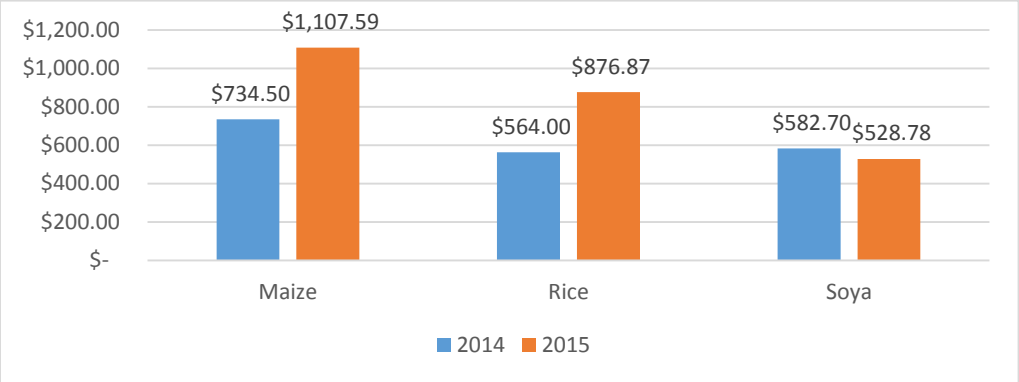
Figure 6: Gross margins per hectare by crop and gender



The 2015 crop season realized higher maize and rice gross margins than the 2014 season as the average price for maize increased from $268/MT to $368/MT and rice yields significantly increased, from 3MT/ha to 3.98MT/ha. However, the gross margins for soya decreased, due to a reduction in selling price from $414/MT

to $336/MT. Nevertheless, the project exceeded its gross margin per hectare targets of $423, $644 and $437 of maize, rice and soya respectively.

Figure 7: 2014 and 2015 crop seasons gross margins per hectare



The 2015 gross margins are significantly greater than at baseline (

). Despite lower sales, farmers ended up achieving higher margins per hectare as every dollar was invested in a more optimal and efficient way.

Table 11: Baseline gross margins

Commodity	Male	Female	Total
Maize ($/ha)	276	289	283
Rice ($/ha)	259	249	254
Soya ($/ha)	315	212	264

4. Application of Improved Technologies and Practices – 2015 Season

Data from the 2015 gross margin survey shows that 52,577 (98.87%) project beneficiaries applied one or more improved technology and/or management practice and about 44% of them were women. In total, 51,425 applied land based technologies on 48,275 ha. The project's targets for these indicators are 54,600 individuals applying one or more technologies and 81,900 hectares under improved technologies. The assumption used to set targets for the number of hectares under land based technologies was an average of 1.5 ha by the applying individual. However, actual average size of land planted was less than one hectare. ADVANCE proposed using 1 ha per applying farmer to USAID, as this is closer to the reality, and this proposal was approved and will be effective in FY17.

Cultural practices were the most common among women farmers while climate mitigation and management practices were the least ones. For men, cultural practices, soil related and pest management were the most common technologies and climate mitigation the least frequent.

Table 12: Technology application

Technology type	Number of farmers applying			Number of hectares		
	Female	Male	Total	Female	Male	Total
Crop genetics	14,713	19,719	34,432	7,887	27,928	35,815
Soil related	19,008	26,042	45,050	10,290	33,142	43,432
Pest management	19,002	26,306	45,308	11,401	35,308	46,709
Cultural practices	22,216	28,621	50,837	13,366	37,484	50,850

Climate mitigation	7,393	11,816	19,209			
ICT	10,393	15,915	26,308			
Management practices	9,091	12,148	21,239			

5. Supported Firms' Profitability

Two hundred and fifteen firms that received significant support from the project were surveyed to ascertain the number that is operating more profitably in FY15 as compared to FY14. These firms consisted of aggregators, input dealers, OBs and processors. Only 48 of them accepted to provide the figures. The data collected showed that 87.5% of the firms were profitable and 56.25% of them increased their profits in FY15. Table 13 shows the average profits of those which experienced the profit increase.

Table 13: Firms profit increase

Firms type	Average 2014 profit		Average 2015 profit	
Aggregators	GHS	60,190	GHS	109,579
Outgrower Businesses	GHS	71,413	GHS	102,496
Poultry Farm	GHS	99,730	GHS	169,230
Processor - Feed mill	GHS	91,080	GHS	1,096,000
Processor - Foods	GHS	806,425	GHS	1,539,800
Processor - Rice mill	GHS	146,505	GHS	250,554
Processor - Soy	GHS	425,166	GHS	495,080
Grand Total	**GHS**	**168,277**	**GHS**	**311,851**

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.

1. Sub-purpose 1: Increased Agricultural Productivity in Targeted Commodities

In order to increase the productivity of maize, rice and soybean of project beneficiaries, ADVANCE continued to establish demonstration sites, reinforcing access to quality production inputs and business development services, increasing the management and technical capacities of the outgrowers and OBs through a variety of trainings and initiatives, steadily strengthening the OB model promoted by the project.

1.1. DEMONSTRATION SITES AND GAPS TRAININGS

Actor Supported Demo Sites

Actor-supported demonstration sites are an important strategy used by ADVANCE to train farmers and demonstrate the effectiveness and efficiency of improved technologies. These aim to increase productivity and

profitability. This reporting period, the project established 351 demo sites in total: 235 for maize (including 36 CSA-focused sites), 34 for rice, and 82 for soybean. Table 14 below shows the distribution of the demo sites across tha ADVANCE operational region.

Table 14. Sponsors and demonstration sites by region

PROTOCOL/SPONSOR	NR	UER	UWR	SOUTH
MAIZE				
Pannar (RMG) + YARA fertilizer	17	12	15	21
Pioneer seed (Dizengoff) + YARA fertilizer	14	9	8	10
M&B seed + YARA fertilizer	3	7	5	7
Heritage Seed + Yara Fertilizer	41			
Effah Lawrence + Timothy Agro	11			
Antika/Felix Bazing + Yara			14	
CRI + YARA		10	13	
Heritage + Louis Dreyfus	18			
TOTAL # OF MAIZE DEMOS	**104**	**38**	**55**	**38**
RICE				
CRI Protocol for rice + YARA	18	9	4	
SARI 80-day variety, non-aromatic, upland rice +YARA		3		
TOTAL # OF RICE DEMOS	**18**	**12**	**4**	**0**
SOYA				
Effect of P, N2, B and inoculant on yields (Heritage + YARA)	29	8	5	
Effect of TSP + micronutrients vs. straight TSP (Heritage + YARA)[2]	14		5	
Drilling versus spot planting on yields, with P, N2 and B (Heritage + Yara)	6	7	8	
TOTAL # OF SOYA DEMOS	**49**	**15**	**18**	**0**
GRAND TOTAL	171	65	77	38

The objectives of the demonstrations were:

Maize

- Demonstrate superior performance of hybrid maize varieties
- Demonstrate the impact of standard improved practices on maize yields
- Demonstrate short term maturity and drought tolerant varieties/hybrids
- Demonstrate striga tolerant variety

Rice

[2] P= Phosphorus N= Nitrogen B=Boron

- Demonstrate the effect of nursing and transplanting on yields
- Show standard improved practices involving direct seeding in rows on yields
- Test drought tolerance and days to maturity on crop performance and yields

Soya

- Demonstrate the effect of fertilizer and inoculant on crop performance and yield
- Demonstrate the effect of Nitrogen and Boron elements in soybean plant nutrition
- Demonstrate the impact of plant density on the yield of soybean

Soya demo plot

While the demo plots in the ADVANCE-South operational area have been harvested and analyzed for yield, moisture content and other parameters, the demo sites in the NR, UER and UWR are at various stages of growth and have surmounted the initial rainfall challenges faced at the time of their establishment. In addition, the containment measures applied to the sites successfully addressed the serious Fall Army Worm (Spodoptera sp.) attack that appeared to have largely affected maize growing areas in northern Ghana.

Discussion during field day, by a maize demo site

Rice demo site

Demo sites also offer an opportunity to create and reinforce linkages between farmers and input suppliers who donate 100% of the materials/inputs for the sites and use this opportunity to promote their products. The land and land preparation are provided by the farmers. As part of the partnerships, the larger input supply firms in particular, are also expected to collaborate with the project in training farmers on GAPs and in monitoring the demonstrations' performance. The increased 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 and of the value chain.
This fiscal year, 18 input supply firms supported the project's demo sites (Table 15).

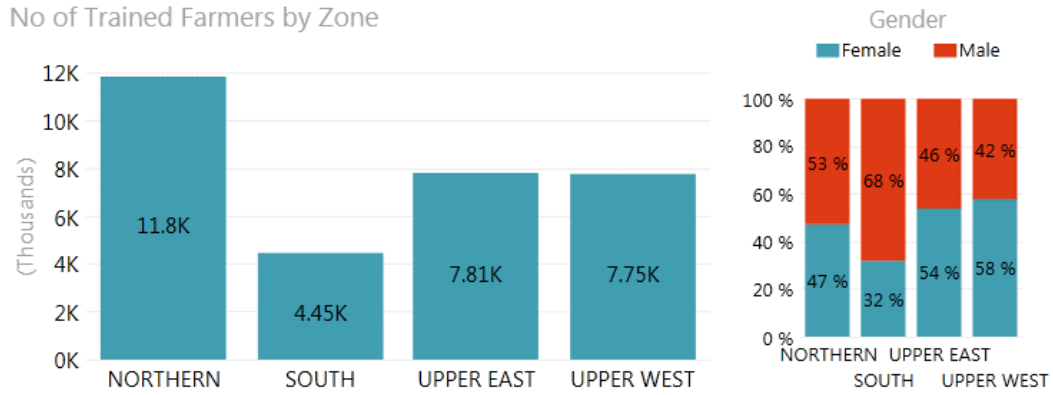
Table 15: Input supply firms supporting demonstrations and inputs provided

Firm	Sponsored Inputs
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
Effah Lawrence	Maize seeds (Omankwa)
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/MS1)
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 period, 31,814 (15,727 women, 49%) smallholder farmers were trained on GAPs and 9,516 (4,912 women, 52%) smallholder farmers were trained on Post-Harvest Handling (PHH) for maize, rice and soybean. Topics covered under these trainings included site selection, proper land preparation, crop spacing, safer use of agro-chemicals, fertilizer application, pest and disease management, weed control, correct use of inoculants for soybean farmers, harvesting, transport and temporary storage, shelling/threshing, cleaning and treatment, bagging, and warehousing.

Figure 8: GAPs training beneficiaries by region and gender



An AEA leading a GAP training

An APO leading a GAP training in demonstration set up

Standard Crop Production Protocols

In FY16, ADVANCE and ATT jointly developed and finalized standard maize, rice and soybean production protocols. This was made available to the project staff for the off-season trainings and during the demo establishment period. ADVANCE produced draft copies of training materials on the production protocols in the form of:(i) lead farmer manuals (handbooks), (ii) A2-sized farmer posters (one per crop) and (iii) trainer/extensionist flip charts, for field training of farmers by the ADVANCE team, MoFA Agricultural Extension Agents (AEAs), and OB field agents.

These protocols are also serving as a guide in providing technical content for the dissemination of GAPs/PHH through collaborating radio stations in the North as part of the project's Information and Communication Technology (ICT)/outreach program.

1.2. PRE-SEASON AGRIBUSINESS FORUM

The 2016 North Ghana Annual Pre-season event was held in collaboration with ATT on April 14, 2016 under the theme: "Improving Agricultural Productivity in Northern Ghana: the Role of Quality Seed". A total of 264 actors, including OBs, FBO leaders, lead farmers, aggregators, and others, were invited by the ADVANCE project to participate in and take advantage of the event. The event brought nearly 1,000 maize, rice, and soybean value chain actors in total – farmers, buyers, agro-input and equipment dealers, transporters, farm equipment vendors, farm business service providers and financial institutions – to share best practices and establish business relationships that will allow them to prepare and equip themselves for the agriculture season.

1.3. COMMUNITY INPUTS PROMOTION

In collaboration with input dealers and the demo site sponsors, ADVANCE organizes Community Input Promotions to increase access to quality inputs by farmers in more isolated communities. The input promotions represent the final stage of the demo process to increase the use of the appropriate agricultural inputs on farms. This year this activity resulted in farmers' input purchases of GHS 424,080.1 ($109,760[3]) in the targeted communities. Please see Table 16 for a breakdown of the type of input supplied, quantity of each type and the value in GHS.

[3] Exchange rate used throughout the report is GHS 3.8637/1$

Table 16: Purchase resulting from Community Inputs Promotions

Inputs type	Quantity	Value (GHS)
Seeds	10,207.5 kg	77,576.10
Fertilizers	7,300 kg	300,866
Herbicides	3,134 l	45,638
Total		**424,008.10**

Input dealers and sponsors find the Community Input Promotions to be an excellent opportunity to not only increase their sales, but also to establish long term relations with OBs and communities which do not have easy access to their stores. In addition, it constitutes an occasion to raise the interest of and enroll potential community retailers and agents that could sell their products to farmers in these more remote communities. For example, a key input retailer at Kintampo North, Timothy agro-chemicals, established contacts with Yara and RMG companies for fertilizer/inputs supplies.

During the promotions, equipment suppliers such as Ghana Heavy Equipment, RST, A&G (new in Ghana), Afgri Ghana, and Hatoum displayed small, medium, and large equipment.

1.4. INPUT DEALER BUSINESS DEVELOPMENT PROGRAM

This reporting period, 41 new input dealers were identified and profiled to work with the project. They have been sensitized on strategies to improve the OBs'/OGs' accessibility to inputs during the cropping season, boost their sales and expand their community agents' network. A Business Diagnostic Tool has been administered on 22 of them to serve as a baseline for developing their business plans while 13 have had their business plans developed.

1.5. ICT OUTREACH AND PRODUCTION TECHNOLOGY DISSEMINATION

Voto Mobile

During the reporting period, in a bid to increase smallholder farmers' access to information, the project signed a partnership agreement with Voto Mobile, a Ghana - based tech start up and social enterprise to provide mobile voice messages on GAPs in maize production to 1,000 smallholder farmers in Kintampo North. To set up farmers onto the platform, the project's staff and more than 70 farmers were trained as trainers on how to access voice messages on their mobile phones. Sent messages were based on the project's standard maize production protocols and compliant with its Pesticide Evaluation Report and Safe Use Action Plan (PERSUAP). The final actual number of beneficiaries reached were 1,417, Twi and Dagbani speaking farmers in NR, Kintampo North and Kintampo South.

Esoko Weather Information

For the third year, ADVANCE signed a contract with Esoko to disseminate SMS based market and weather information to farmers. The content of the information sent to farmers also includes agronomic tips such as alerts on the time to plough and the time to apply fertilizer and other chemicals based on the period of the crop cycle in the region where the farmer is located.

In FY16, 9,124 farmers received weather forecasts five times a week to enable them to do a better planning of farm activities such as planting, fertilizer application and pesticide spraying and use optimally their resources. ADVANCE staff and some OBs and their field agents also received training from Esoko on precautionary measures against negative climate change and to provide technical backstopping related to the messaging to the farmers.

In response to the Fall Armyworm outbreak in the NR and some districts in UER and UWR, ADVANCE collaborated with Esoko to disseminate through SMS and voice messages guidance to 4,332 farmers. The messages included information on PERSUAP compliance, recommended insecticides to treat the affected farms as well as preventive measures to take in order to avoid infestation.

ICT Program with Grameen Foundation

The collaborative program with Grameen Foundation, aimed at providing app-based extension services to smallholder farmers using tablets, resulted in 156 OBs and 158 field agents being trained on how to use the Smartex application for farmer registration, farm data collection and offer technical assistance across the five operational regions. ADVANCE provided the trained beneficiaries with Samsung Galaxy tablets and Pico projectors to aid them in this exercise while Grameen developed the Smartex app, trained the participants and set up an online monitoring system.

Field Agent explaining a point to the facilitator at the training in Techiman

Radio Programs

During the period under review ADVANCE completed the distribution of 1,000 solar radio sets to 1,000 Listenership Clubs, regrouping over 28,900 members in its five regions of operation (Table 17). This initiative will aid the project in reaching out to more farmers, especially female farmers, with agricultural information during the appropriate farming season.

Table 17: Listenership Clubs per sub-office

Sub-office	# of Female Members	# of Male Members	Grand Total # of Members	# of Radios and Listenership Clubs
Northern	6,132	5,446	11,578	390
Upper West	4,557	1,634	6,191	243
Upper East	3,728	2,856	6,584	264
South	1,380	3,173	4,553	99
Grand Total	**15,797**	**13,109**	**28,906**	**1,000**

Twenty-five radio station partners were linked to Farm Radio International to participate in their training programs to enrich their expertise in producing agricultural programs for these farmers. Three additional radio stations were identified and profiled to work with the project.

Furthermore, 20 radio station presenters received training by the project on the agricultural programs aired to farmers in the various regions. The participants, who were the program hosts, were taken through the review of the previous year's agricultural program, the project strategy, the program success and challenges, farming and crop calendar to guide in the selection and uniformity of messages aired to farmers across the operational regions.

This year the project also collaborated with MoFA to sensitize farmers, through selected radio stations, about the Fall Armyworm (Spodoptera sp.) infestation that affected some farms across the regions, especially in the NR. The discussion gave directions about what to look for on the farms, suggested treatment that should be applied to affected farms and preventive measures that should be taken to avoid farm infestation of the Fall Armyworm on other farms. Suggested chemicals for treatment included K-Optimal and Sunhalothrin, both PERSUAP approved. Radio stations that aired this sensitization included GaaKii Radio in Saboba. The program included a phone-in section by farmers to seek clarifications.

> *"Our collaboration with ADVANCE in delivering agricultural program to farmers in the region has given us an edge over other radio stations. It has made us popular and we have started receiving radio awards nomination"* James Kuunsaana Donkor, General Manager W 93.5 FM in Wa

1.6. OUTGROWER BUSINESS MANAGEMENT

Outgrower Business Management Training

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.

OBM Training Modules:

1. Understanding value chain concepts, end market trends and how to operate and compete effectively and profitably.
2. Business planning and financial management
3. Outgrower management
4. Marketing, contracts and contract 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

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.

In order to better tailor the business support services provided to the OBs, ADVANCE designed a tool to rate and categorize the OBs. The rating tool used parameters such as:

- Access to end market linkage and development
- Service provision
- Records keeping system
- Accounting system
- Access to financial services
- Out grower management
- Asset acquisition, utilization and management
- Hosting a demonstration plot

This year, 233 OBs were rated by the project as follows:

- 32 were high performing
- 96 were medium and
- 105 were low performing.

Those who were rated as low performing are being mentored by the high performing OBs, through the OB mentorship program. The project's subsequent support to these OBs will be based on these ratings.

Field Management Program

ADVANCE encouraged, facilitated and motivated OBs to engage the services of field managers or agents who support and lead the OBs to provide professional and technical services to their OGs. In the NR, 70 existing OBs were sensitized to add field management to their activities, in UER, 170 OBs hired Field Agents. In UWR, 12 new OBs, with an OG population of 2,245 (967 males and 1,278 females) were identified and profiled.

A total of 156 OBs have engaged 158 Field Managers/Agents to help in their business. Each field agents has received from the project a tablets and a Pico projectors, as part of the Smartex/AgroTech programme in collaboration with the Grameen Foundation. All OBs and their agents have been trained to use the Smartex app for the registration, profiling, farmers' capacity building on agronomic practices and farm business records keeping. A total of 2,769 smallholder farmers have been registered and profiled to date. Although there were initial challenges related to the agents' remuneration/motivation, the adoption of Smartex through agents is anticipated to improve extension service delivery by OBs and the sustainability of the field management program beyond the project.

OB Office Program

The project has continued to encourage OBs to set up small office units from which they can manage their operations. Thirty-one OBs set up these operational offices during the period under review. Forty-seven trained interns from UDS and Valley View University worked with 55 OBs to overcome challenges they face in keeping adequate business record.

1.7. BUSINESS DEVELOPMENT SERVICES

Farm Business Planning

In the period under review, 67 actors have had new business plans developed with them while another 58 out of the 202 OBs who had business plans developed in FY14 and FY15 had their plans reviewed to reflect current values and enable them to bridge their working requirements with commercial loans if they so desired. An additional group of 61 OBs had the Business Diagnostic Tool administered, pending preparation of their new business plans.

OBs are continuously being encouraged to register and legalize their operations with the Registrar General's Department with support from the regional NBSSI. Thirty-five OBs had their businesses registered during this year. This registration gives the OBs the opportunity to transaction business with multiple partners as legal entities.

One hundred and twenty-three OBs have had crop budgets developed with them and another 159 have also been taken through the cost/benefit scenarios with regards to in-kind lending of input and tractor services and were also supported to interpret their business records and make business decisions.

Financial Services

This reporting period, ADVANCE identified three new Partner Financial Institutions (PFI), National Investment Bank, First Allied Savings and Loans and Capital Bank, which supported OBs with financing for inputs and equipment for the 2016 crop season. Furthermore, five OBs and 721 OGs were supported to open savings accounts with three PFIs after the FIs trained them on credit management, records keeping and understanding cost of credit or interest rate.

To increase financial access and encourage farmers' savings as a source of investment capital into production among OGs, 214 VSLA groups were formed through local partners (Sung Foundation, Youth and Advocacy Rights Organization, Concern Universal and Community Resilience), benefiting 4,890 (1,420 males, 3,470 females) OGs. Before they were set up as groups to start savings mobilization, all beneficiaries were trained on:

- Formation of Village Savings and Loans Association and group dynamics
- Leadership and election of leaders
- Drafting and adoption of a group constitution
- Development of Policies and Rules for Social Fund

VSLA share out session

The groups made savings of GHS 1 ($0.26) to GHS 5 ($1.30) per share, per week and a social fund contribution of GHS 0.20 ($0.05) to GHS 0.50 (0.13) per person, per week, depending on the constitution they adopted. As of July 2016, these groups had saved a total of GHS 394,598 ($102,130), which is to be used for inputs for the 2016 season. The highest amount saved by an individual was GHS 846 while the lowest was GHS 5. During the nine month saving period, the groups gave out GHS 104,534 ($27,055) as loans to the members for petty trading, school fees and other purposes.

Community Inputs Promotion during share out

The share out of the savings mobilized, was scheduled to coincide with Community Input Promotions, so that as OGs took their savings 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).

All of the 214 savings groups started the savings cycle again after the share out. The formation of the VSLAs has significantly reduced the demand by OGs on their OBs for credit support which has enabled OBs to use their own working capital instead of having to borrow from the FIs at 32% per annum, while still affording them the ability to expand their businesses. This has strengthened the relations between the OGs and their OBs as there is less opportunity for the OGs to default on OB investments. The relationships between the OGs and OBs have remained firm as the OGs still require at least the land preparation services from the tractor owners, even when in-kind support through inputs is no longer necessary.

The VSLA concept will be scaled up to another 500 groups in FY17. The project is also currently in talks with Opportunity International Savings and Loans and the Fidelity Smart Account team to devise strategies to mop up the savings made from the box into a bank account where they can earn interest and be also kept safer.

Digital Financial Services

ADVANCE continued to work closely with MTN to increase cashless transactions and savings by the beneficiaries through mobile money. Through this collaboration, this reporting year, 1,874 farmers were sensitized on the use of mobile money. Out of this number 1,671 smallholder farmers were registered as mobile money subscribers and 15 OBs along with one input dealer as merchants.

MTN staff enrolling a smallholder on Mobile Money

Monitoring of transactions on four OBs who were trained and set up as merchants in the Upper West, showed that e-transactions (cash in/cash out) carried out amounted GHS 2,269,403 ($587,365) in the last year.

One of the biggest advantages expressed by OB agents is the reduction in security risk when using mobile money. Previously, some had dealt with robbery attempts when carrying large amounts of money involved in purchasing inputs in remote towns. It was observed that many women didn't own a mobile phone, which limited the number of registrations in sensitized communities.

"Because of mobile money we don't have to travel far to purchase inputs, we send money through mobile money to Yendi and our inputs are transported to us here in Chereponi", OB Nicholas (Kukunansor Women's Group)

"Apart from sending and receiving mobile money for input transactions, we can now send money to our children in schools through mobile money." Mercy (Muyo Farms Merchant) in Wapuli.

Outgrower/Smallholder Credit Management

A total of 1,903 smallholder farmers (including 997 women) were trained on credit management to encourage OGs to plan/budget for their farms, adopt good agronomic management practices so they can:

- Increase their yields
- Compete profitably as value chain actors
- Increase household income
- Pay back production investment to OBs from their increased yields

1.8. FARMER MENTORSHIP PROGRAM

Through the farmer mentorship program, successful Nucleus Farmers (NFs) are invited to mentor emerging NFs by coaching and advising them during visits facilitated by the project. During the reporting year, a total of 25 successful NFs mentored 125 emerging NFs. Mentorship is reinforced through the 'seeing is believing' approach. Training topics handled during the mentorship visits include farm planning and management, good records keeping, successful OB model, outgrower management, demo establishment and management, use of improved seed, tractor management, ripping operation, shelling services, produce storage, end-market engagement, and credit management.

"The mentorship was good for all of us, it has improved on our relationship among ourselves, we are now adopting ADVANCE practices, we are keeping records of our services, the mentorship motivated us to work with our outgrowers while staying in business and looking forward to producing quality grains for better market price and an organized market". Hudu Salifu, an NF mentee from Zinindo in the Gushegu District

1.9. 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 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. This year's activities consisted of scaling up the practices that proved working during the first stages of the project's CSA strategy implementation last year.

Minimum Tillage

Fifty OBs ripped 269.63 acres from 36 demonstrations, 19 model farms, five cover crop demos and 22 outgrowers' farms. Out of this number, 220.43 acres have been planted. The remainder of the area which remains to be planted will be done during the minor season land preparations which were ongoing in the South at the time of reporting.

The area under minimum tillage this year represented an increase of 2,708% from the 9.6 acres that were ripped last year. For the first time, OBs commercially offered ripping services to their OGs with the support of

ADVANCE and AFGRI Ghana. Minimum-tillage fields have shown remarkable resilience in times of dry spells and have generally performed better than conventional tillage plots. These impressive results, together with a reduced leverage on ripper grants, are expected to further increase the adoption rate of minimum tillage.

A ripped field being fertilized, with deep riplines and organic matter as a cover for water retention

Outgrowers observing the operation of the ripper during land preparation

Ploughed plot *Ripped plot*

Cover Crop System

Five community-based cover crop demos were set up to demonstrate the benefits of cover crop systems in improving soil nutrients and conserving soil moisture. Three cover crop species – *Mucuna, Cajanus,* and *Dolichos* – are being introduced to farmers, in succession and as intercrops with maize. These species were preferred by farmers on the trials done in 2015 because these legumes are edible, which represents an additional income or source of food for them.

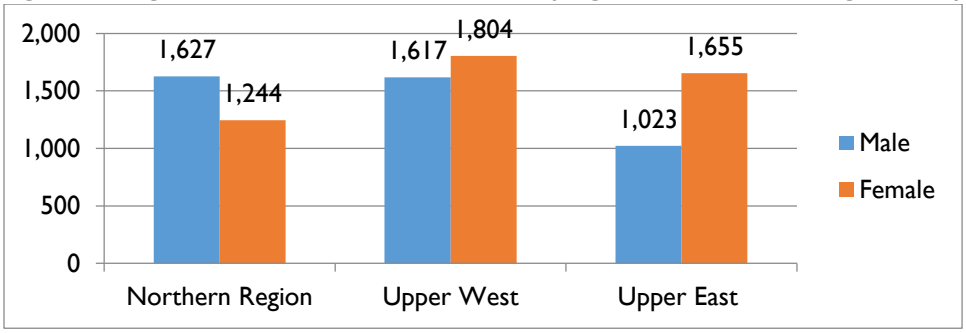
To promote the adoption of these cover crops, 71kg of *Mucuna* seed was distributed to 71 farmers in NR, UER and UWR. The farmers planted the *Mucuna* seed in two different forms based on their interest – as sole cover crops or inter-planted with maize.

No-burn Campaigns

One of the key challenges to maintaining cover crop systems through the dry season is bushfires. To overcome this challenge, the project embarked on an aggressive anti-bushfire campaign to educate farmers on the dangers and negative consequences of bushfires to agriculture production and on how to prevent them.

The campaign was threefold – radio messages, field days and community forums. Eight radio stations were engaged to broadcast anti-bushfire messages in local languages through jingles, announcements, and panel discussions. The last two field days for the 2015 crop season, which were held in October 2015, were used to educate farmers on the dangers of bushfires to their farming business and on preventive measures. The number of farmers reached through this means was 8,970 (Figure 9).

Figure 9: Regional distribution of no burn campaign beneficiaries during field days



Also, in collaboration with the Ghana National Fire and Rescue Service, the Environmental Protection Agency, the National Disaster Management organization, and the Ministry of Food & Agriculture, the project engaged six communities to educate farmers against bushfires. These six communities (two in each region in North Ghana) were monitored throughout the off-season to ascertain the success of their anti-bushfire activity.

In Sentu, in UWR, community leaders set up a fire vigilante group who continued to involve community members on fire prevention. As a result, only about 25% of the community's land was burnt as compared to about 70% in previous years.

In Loggu, in UWR, OB Mac Adams reported that 70 of his female outgrowers did not burn their fields as their normal practice to clear it, owing to the campaign. "*For the first time in many years, about 210 acres of farmland were not burned. I hope gradually farmers will come to understand the effect of bushfires and stop burning*", said Mac Adams.

Liyabalbu, in the Saboba District, recorded zero fires following the anti-bushfire campaigns. Nine other communities in the District recorded varying degrees of reductions in bushfires.

No bush fire campaign, in the presence of Chiefs and authorities

Agroforestry

Some farms in the ADVANCE operational areas have over 50 ha of farmland where the tree cover is nearly entirely removed. This exposes the soil to wind and water erosion, and also exposes crops to strong winds during storms. The project introduced trees around the boundaries of these farms, and along access roads within the farms at intervals that would improve the farm ecosystem without causing shading.

Planted mahogany seedling

This reporting year, two farms with a total area of 160 acres were assessed and plans were developed for agroforestry implementation in the UER. Through a collaboration with Farmer-to-Farmer, Dr. Seth Asare, a volunteer, conducted an assessment of the Sandema Farm and designed a sustainable land development strategy. Furthermore, 200 mahogany seedlings were integrated into a 60-acre farm belonging to Chief Moses Abare in Binaaba as the first phase of the plan. The next phase will include *Laucaena*, the branches of which will be pruned and integrated into the soil as mulch and organic matter for improvement. This is a pilot activity.

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

This reporting year, under sub-purpose 2, the project continued the following work:

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

2.1. MARKET LINKAGE DEVELOPMENT

New Buyers Identified

Twenty-four new buyers were identified and profiled during the reporting year, 11 of these were based in the Ashanti Region. Their total annual purchase requirement is 9,375 MT of maize, 18,950 MT of paddy and 4,389 MT of soybean. These buyers have relationships with farmers in the project's five operational regions.

Table 18: New buyers identified

Firm Type	Ashanti	Brong-Ahafo	Greater Accra	Northern	Upper East	Total
Aggregator	7		1	1	3	12
Food processor				1		1
Processor Foods				2		2
Processor Rice Miller	4		1	2		7
Processor Soybean		1			1	2
Total	11	1	2	6	4	24

Two-way Trade Missions

In order to strengthen market linkages, ADVANCE facilitated visits for interested buyers to meet OBs in the five regions of operations. During FY16, 35 buyer trade missions were facilitated for 17 buyers and 189 OBs (Table 19). These trade missions resulted in open-ended purchase and supply contracts (see Contract Facilitation section below). The expectation is that these new buyer-OB affiliations will evolve into mutually beneficial trading and outgrower relationships. Early signs of such achievements are already being observed,

buyer-OB contracts are being initiated without further support from the project (see Contract Facilitation section below).

Table 19: Trade Missions Facilitated

Region	# of missions	# of participating buyers	# of participating OBs
Northern	7	6	80
Upper West	12	7	53
Upper East	10	9	29
South	6	3	27
Total	**35**	**17**	**189**

** Some buyers did multiple trade missions across regions

Contract Facilitation

During the reporting period, 223 contracts covering 34,552.91 MT of maize, paddy, and soybean were facilitated between 48 buyers and 135 OBs and farmer groups (Table 20). Beyond the ADVANCE facilitated contracts, some OBs applied the knowledge and experienced gained from the project to enter into contracts with buyers on their own. The significant ones are shown in Table 21. Total related volume is almost 650MT, valued at GHS 767,875 ($198,741).

Table 20: Contracts facilitated

Type of Contract[4]	# of Contracts	Contract Volume (MT)	Contract Value (GHS)
Closed Contracts	31	3,762.75	4,388,728
Closed Sale without Formal Contract	67	4,151.71	5,248,166
Outgrower	55	3,764.95	1,926,420
Purchase and Supply Agreements	70	22,873.50	632,190*
Grand Total	**223**	**34,552.91**	**12,195,504**

*Only for contracts with values stated

Table 21: Contracts initiated by the beneficiaries

Name of OB	Name of Buyer	Volume of Goods (MT)	Contract Value (GHS)
Fuseini Meke	Felix	175.00	175,000
Fuseini Meke	Ama Serwaa	95.75	103,325
Peter Okra	CCH Finance	45.00	43,200
Obiri Yeboah	Valley View University	18.20	21,000
Yuoniwoba Cooperative	Asutware Based Aggregators	71.50	107,500
Biu Cooperative	Accra Based Aggregators	89.50	116,350
Amachaaba FBO	Accra Based Aggregators	75.00	97,500
Asatichaaba	Accra Based Aggregators	80.00	104,000
Total		**649.95**	**767,875**

[4] *Closed contracts* are definitive and binding agreements between buyers and farmers for the exchange of a specified quantity of produce at a specified price within a specified period. *Outgrower contracts* are agreements where the buyer provides mechanization services and inputs to the farmer, with the farmer paying back with produce at harvest. *Purchase and supply agreements* are non-binding contracts between buyers and farmers with key terms like quantities, price, and delivery period to be agreed between the parties at a later date. These contracts have been a key feature of the trade missions. Typically, the buyer and farmer do not commit to a definitive price and supply volume at the initial meeting. The contracts are eventually finalized and executed by the parties at a later date.

OB Sumaila Azizu of Banu in the Upper West Region entered into an outgrower contract with buyer Duna Farms, based in Tamale. Duna Farms provided 50 bags of fertilizers and ploughing service for 50 acres to Sumaila and his OGs. In exchange, Sumaila and his OGs pay back one 100 kg bag of maize for each bag of fertilizer and acre of land ploughed.

Transport Linkages

ADVANCE collaborated with the cargo branches of the Ghana Private Road Transport Union (GPRTU) at various locations within the five regions of operations to update haulage fares for several market destinations.

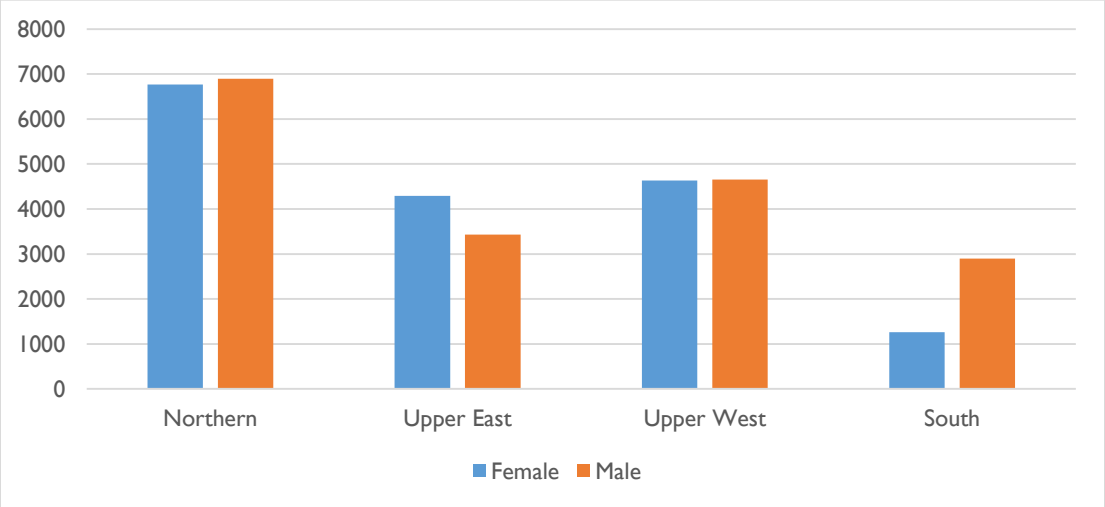
In the UWR, GPRTU representatives met with OBs in Wa and Tumu to seek resolutions to key issues arising from the relationship including delay in hauling produce, poor customer services from drivers, and payment for services.

Actors in the NR, through the transportation linkages created by the project, benefited from a reduction in haulage fares by 15% to Kumasi and 20% to Accra. Similarly, those in the UER benefited from discounts of up to 25% to Kumasi and 33% to Accra.

Training of Farmers in Produce Quality Requirements and Standards

The project trained 34,824 smallholder farmers on Quality Requirements and Standards. This training was based on the Ghana National Standards on quality and grading for maize[5] and soybean[6]. During the training sessions farmers identified acts and circumstances that lead to bad quality produce, and agreed on actions to improve quality to meet market requirements.

Figure 10: Quality requirements and standards training beneficiaries by sub-office and gender



[5] *Ghana Standards Authority* ***GSS 211: 2013: Specification for Maize***
[6] *Ghana Standards Authority* ***GSS 1039: 2013: Specification for Soybeans***

Training of smallholder famers on quality standards in Azupupuga in the Bawku West district of the Upper East region

> *"I will be supporting my OGs with land preparation and seeds to produce soybeans for the first time because the knowledge obtained will empower them to aspire to produce good quality soybeans to secure guarantee market for it"*
>
> ~ Chief James Adawina; OB in Biu

Fifth Annual Northern Ghana Pre-Harvest Agribusiness Event

Participants at the soybean marketplace forum

The Fifth Annual Northern Ghana Pre-Harvest Agribusiness event was held in Tamale on October 15, 2015 under the theme "*Discovering Opportunities for Expansion"*. The event was hosted by the Ghana Grains Council (GGC) with support from ADVANCE, attracting 930 registered participants 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 2015 harvest of maize, paddy and soybean.

GGC worked with ADVANCE to generate revenues of $34,747 from the event including $29,516 in sponsorship. Proceeds from sponsorship represent a five-fold increase from 2014's figures. This signals increasing private sector interest in the marketing opportunities presented by the event.

Evaluation of the 2015 Pre-Harvest Event

Highlights of an evaluation conducted by a team from the University of Development Studies involving 154 respondents indicated that:

- 42% of participants were first time attendees
- 30% of participants rated the event as excellent; 59% rated it as good
- The market place where buyers and farmers discussed market developments and contracting expectations was the most useful part of the event, followed by exhibitions
- 29% of participants rated exhibitions as excellent; 54% rated it as good
- 57% of participants discussed business deals with others
- 100% of participants and 77% of exhibitors want the event to be organized again
- Feedback from 39 exhibitors indicated that 33% were first time exhibitors and 67% past exhibitors

First Southern Ghana Pre-Harvest and Agribusiness Event

The first Southern Ghana Pre-harvest and Agribusiness event was held in Kumasi on March 3, 2016 under the theme "Quality Sells More". Organized in a similar fashion to the Northern Ghana Pre-harvest event, the

purpose of this maiden event was to bring ADVANCE maize OBs in the Southern zone of influence to interact with maize buyers, input dealers and other actors based in the South, particularly in the Ashanti and Brong-Ahafo regions. The event was hosted by the Ghana Grains Council and attracted 228 registered participants including exhibitors, buyers, transporters, input dealers, financial institutions and maize OBs from the ADVANCE South operational area. GGC worked with ADVANCE to generate revenues of ADVANCE to generate revenues of $7,246 from the event, including $6,491 in sponsorship. AFGRI Ghana, the dealer of John Deere farm machinery was the headline sponsor.

A cross section of participants in the conference room

The main event was preceded by a training session on Grain Quality Standards on March 2, 2016 for OBs. The training was organized in partnership with the Ghana Grains Council and facilitated by a resource person from the Ghana Standards Authority.

Evaluation of the First Southern Ghana Pre-Harvest Event, 2016

Highlights of an evaluation conducted by a joint team from the University of Development Studies and Kwame Nkrumah University of Science and Technology involving 77 participants and 21 exhibitor respondents indicated that:

- 53% of participants were first time attendees (had not participated in the Northern event before)
- 51% of participants rated the event as excellent; 39% rated it as good
- 41% of participants rated exhibitions as excellent; 49% rated it as good
- 90% of participants discussed business deals with others
- 13 out of the 21 exhibitors were at least at one event in Northern Ghana

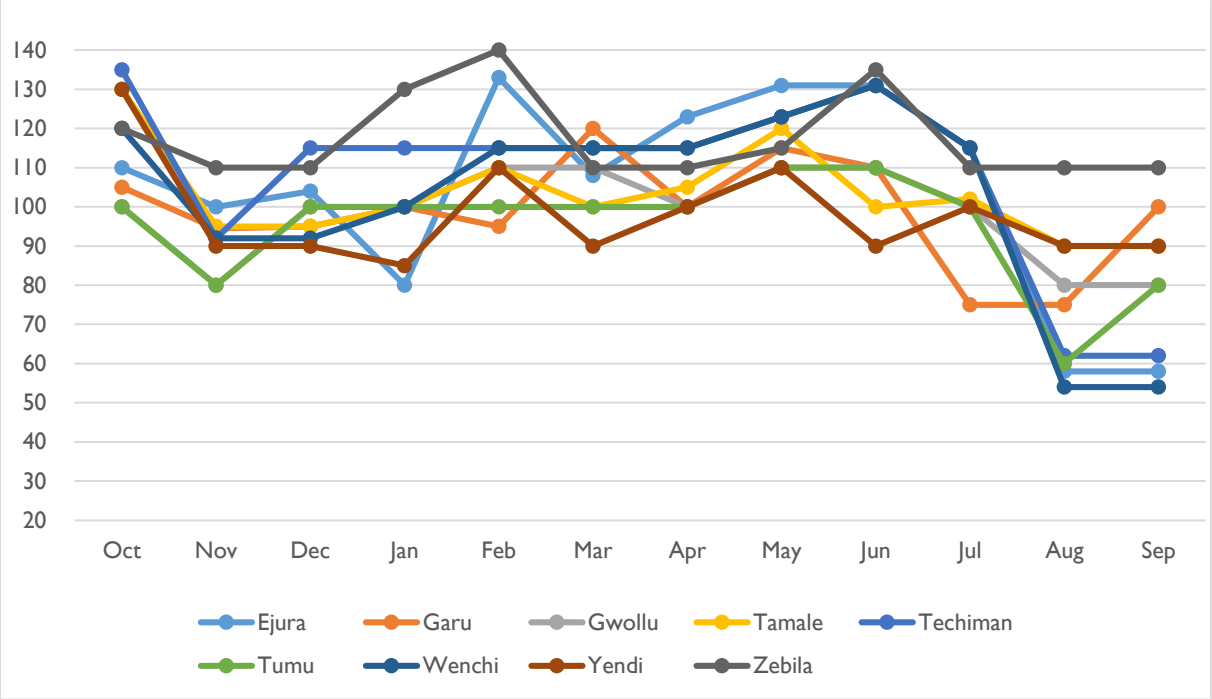
Key Market Developments

In this section, ADVANCE presents commodity price trends from the 32 key markets monitored by the project on a weekly basis.

Maize

Overall, maize prices in September 2016 were 31% lower than in October 2015 in the markets monitored by ADVANCE. All markets experienced a price decline in November 2015 because of the maize harvest. Prices rose slightly in January 2016, and stabilized between February 2016 and June 2016 because of lower supplies from farmers into the market after the harvest, since they sold sufficient stocks to cater for farm and other family expenses. Some farmers, especially in the South, held on to their stocks in anticipation of higher prices. Prices in Northern markets declined slightly in March 2016 when farmers began to sell their stocks to realize cash to finance land preparation for the new season. Prices fell for two continuous months in June and July 2016 because of increased supplies from the major season harvest from the South. The price decline was aggravated by supplies of maize by traders sourced from Burkina Faso and Cote d'Ivoire into local markets.

Figure 11: Average maize monthly prices in GHS per 100kg, with monthly average oscillation in %



Source: ADVANCE market monitoring

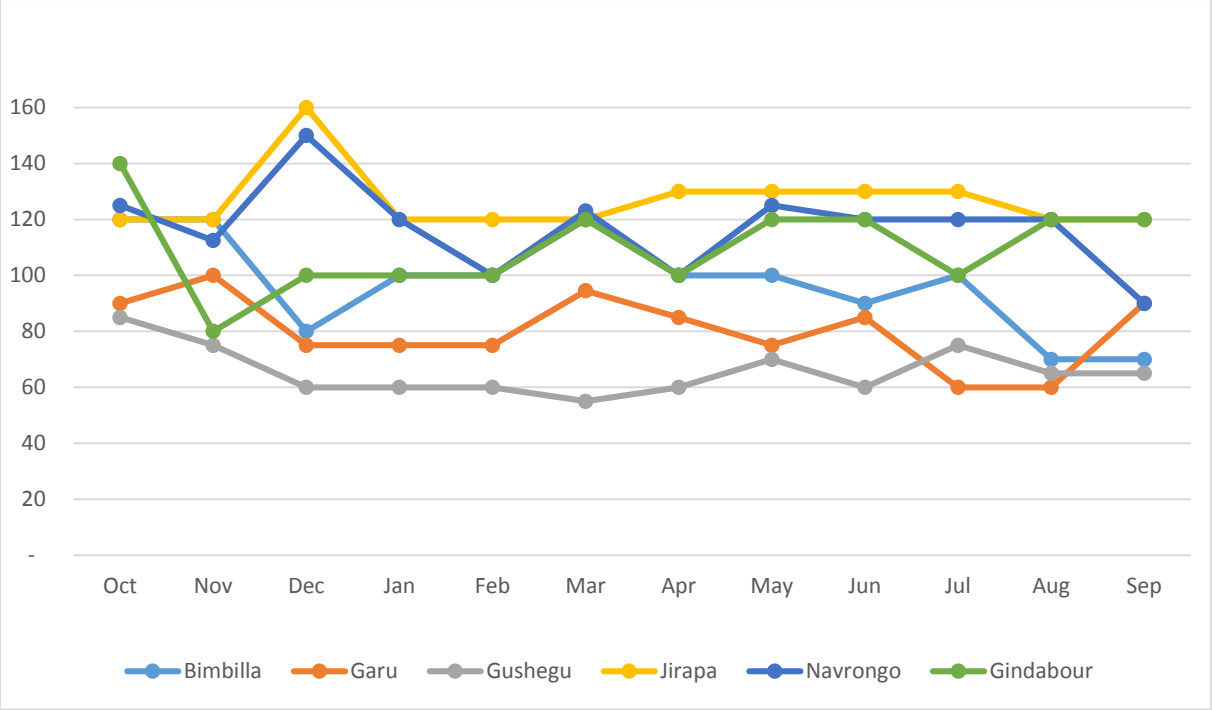
Rice Paddy

On a year to year basis, paddy prices declined by 18% between October 2015 and September 2016.

Prices began to drop in November 2015 and continued through to February 2016 because of inflows of stocks into the market from the Northern harvest in November and December 2015. There was a slight price rise in March 2016 due to dwindling stocks and buying by AVNASH Industries Ghana of other rice varieties like Tox and Togo Marshall in addition to the highly preferred Jasmine and AGRA varieties. AVNASH and the Southern aggregators reduced purchases in June 2016 due to the low moisture content of paddy available in the region. These buyers shifted their purchasing to the South.

Compared to other markets, paddy prices in Navrongo/Tono were higher because of strong demand. Buyers are attracted to the irrigated areas because farmers have relatively better access to combine harvesters to harvest on time at the moisture level suitable for straight milling.

Figure 12: Average paddy monthly prices in GHS per 100kg, with monthly average oscillation in %



Source: ADVANCE market monitoring

Soybean

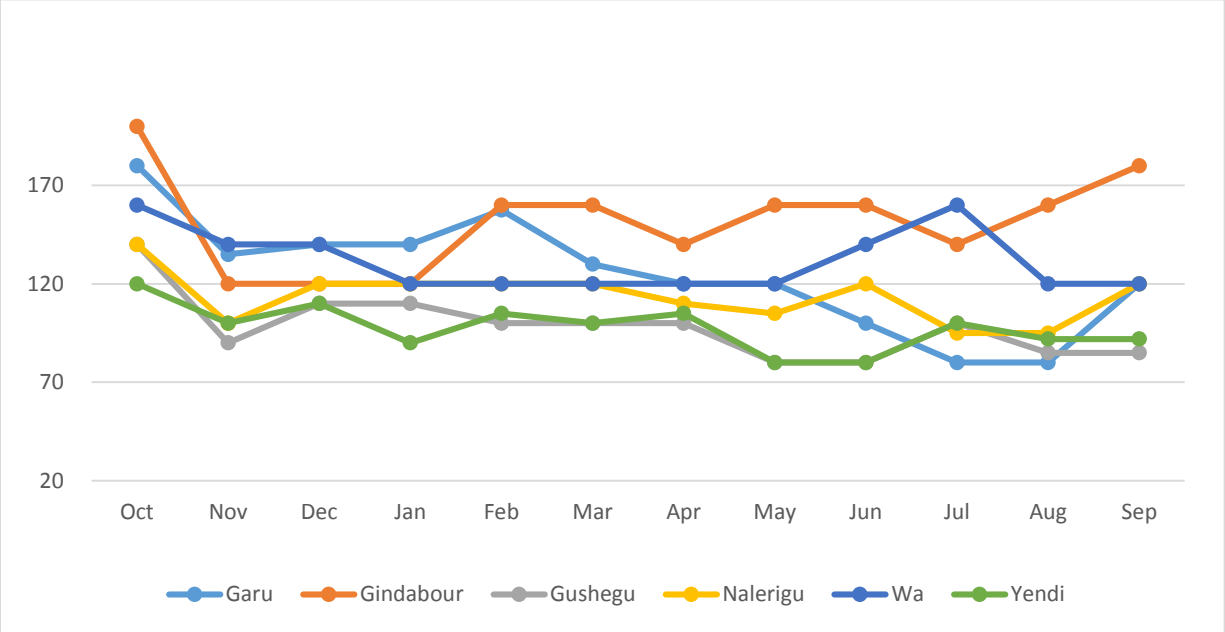
In general, soybean prices ended 24% lower in September 2016 compared to October 2015. Soybean prices declined in November 2015 with the new harvest and experienced marginal variations afterwards. The primary reason for the relatively stable prices was because of depressed demand from soybean processors who experienced lower sales for their soymeal because of a preference for imported soymeal by poultry farmers. However, purchase of soybean by Burkinabe aggregators in the Upper East region helped prop up the price.

Prices recovered in September 2016 because of dwindling stocks and buying by aggregators from Togo in the Upper East and Northern regions. Ghana Nuts, the largest soybean processor, was active purchasing in the Northern region during this period.

The volume of soybean produced in the Upper West is low with respect to the other regions of the North, so demand far exceeds supply accounting for the high prices in the region. Farmers in border areas like Tumu also have the option to sell in Burkina Faso when the prices are favorable.

The incidence of rising prices of the product in Gindabour in July could be associated with demand from Royal Danemac and Vester Oil Mill in this market during the period.

Figure 13: Average soybean monthly prices in GHS per 100kg, with monthly average oscillation in %



Source: ADVANCE market monitoring

2.2. LEAD FIRM COMPETITIVENESS

Support for Buyer Outgrower Development

Buyer outgrower development is where the buyer provides inputs (typically seed, fertilizer and weedicides) and mechanization services (typically ploughing) to the farmer; and the latter repays with a specified quantity of produce at the time of harvest.

Buyer Outgrower Schemes for 2015 Farming Season

Monitoring support on recovery payments was provided to the six buyer outgrower schemes facilitated for the 2015 farming season. Except for the Premium Foods' scheme which suffered reverses from lower than expected recovery from OBs, produce repayment from farmers for the other schemes was satisfactory.

Table 22: Status of recovery of buyer outgrower schemes for 2015 farming season

Buyer Name	# of OBs/Groups Supported	Crop	Type of Support	Status of Recovery at September 2016
Premium Foods	32	Maize	Seed, fertilizer	45%. Lower than expected recovery
ANS Mills	2	Paddy Rice	Jasmine seed	Full Recovery
Aframso Rice Buyers Group	2	Paddy Rice	Jasmine seed	Full Recovery
Ejura Women Marketing Group	2	Paddy Rice	Jasmine seed	Full Recovery
G. Bosomtwe Ventures	1	Maize and Soybean	Seed, fertilizer	Full Recovery
Akate Farms	670	Maize	Seed, fertilizer	97% Recovery

Support for Buyer Outgrower Schemes for 2016 Farming Season

Four buyer outgrower schemes were facilitated for the 2016 farming season. Three of these schemes are new: Agricare, Addicent Foods and Timothy Dassah. These buyers invested a total of GHS 3,991,747 ($1,033,141) in providing input support to farmers, with repayment in kind by farmers at harvest time.

Table 23: Buyer Outgrower Schemes for 2016 Farming Season

Buyer Name	Crop	Type of Support	# of OBs	Indicative # of Smallholders	Value of Investment (GHS)
Agricare Ltd (North)	Maize	Seed, fertilizer	14	420	480,500
Agricare Ltd (South Minor Season)	Maize	Seed, fertilizer	14	473	480,500
Akate Farms	Maize	Seed, fertilizer, weedicides	20	1,000	2,940,000
Addicents Foods	Paddy	Seed, fertilizer, pesticide	2	76	83,649
Timothy Dassah, Poultry Farmer, Techiman	Maize	Fertilizer, weedicides	1	53	7,098
Total			**52**	**2,022**	**3,991,747**

Additionally, the following was facilitated:

- Premium Foods reached an agreement with the OBs it supported in Northern Ghana in the 2015 farming season, who had outstanding payments, to extend the repayment period into the 2016 season.
- Two buyers also provided mechanization services to farmers without a formal outgrower contracts. In both cases farmers can pay for services in cash or in kind with produce at harvest time. The first was Sahel Grains, a Techiman based maize aggregator. It deployed tractors to plough for farmers in the UWR. The second is Tamanaa Foundation, a rice miller based in Nasia in the Northern region. After a trade mission to the Tono irrigation area in the Upper East region, the enterprise delivered a new crawler combine harvester to Chief James Adawina, an OB in Biu in response to a request by farmers during the trade mission for harvesting support.

Sayibu of Tamanaa handing over combine harvester to Chief James at Biu

Without the project's facilitation, buyer Duna Farms of Tamale, supported Sumaila Azizu, an Upper West OB with 50 bags of fertilizer and ploughing services for 50 acres.

BDS Support to Buyers

Various levels of BDS support was provided to 16 buyer firms during the period, as described in (Table 24) below. Two firms – BM Unity Farms and Techiman Maize Traders Association - were also supported in preparation and submittal of proposals to the DFID-funded West Africa Foods Markets Program. However, these applications were unsuccessful.

Table 24: Status of BDS Support

Firm/ Organization	Home Region of Firm	Source of Technical Assistance	Nature of Technical Assistance	Status of Engagement
Naawin Enterprise, rice miller	Ashanti	STTA Consultant ADVANCE ADVANCE	Improvement of Factory Floor Layout and Storage Management Advise on improved financial management processes Development of distribution channels for milled rice	Completed Completed Ongoing
ANS Mills, rice miller	Ashanti	ADVANCE	Development of distribution channels for milled rice	Ongoing
Yedent Agro, maize/soy foods processor	Brong Ahafo	STTA Consultant	Development of Brand Strategy and Action Plan	Completed
B. M. Unity Farms, poultry farm	Brong Ahafo	ADVANCE	Support to access working capital financing	Suspended and passed on to Ghana Poultry Project (GPP)
Ampofo Farms, poultry farm	Brong Ahafo	ADVANCE	Support to access capital expenditure financing Support to develop maize supply chain	Suspended and passed on to Ghana Poultry Project (GPP) Ongoing
Vester Oil Mill, soybean processor	Ashanti	ADVANCE	Assistance with establishing soymeal sales distribution channel with Dormaa Poultry Farmers Association, and retail outlet in Dormaa Ahenkora	Completed
Asamoa & Yamoa Farms, Kumasi, poultry farm and soybean processor	Ashanti	ADVANCE	Resolution of soybean supply dispute with ADVANCE OB arising from underweight bags Advise on soybean supply chain development	Completed Completed
Inter-Grow, soybean processor, Tema	Greater Accra	ADVANCE	Concluded GHS 2m ($517,638) working capital financing (overdraft and revolving credit) from UT Bank	Firm accessed credit line to purchase soybean

Firm/ Organization	Home Region of Firm	Source of Technical Assistance	Nature of Technical Assistance	Status of Engagement
REGIS Commodities	Greater Accra	ADVANCE	Support for trade missions and contracting with OBs in the North and South, and prospecting for warehousing facilities in Afram Plains	Trade missions completed. Maize purchases from OBs ongoing. Warehousing facilities identified and discussion with owners ongoing
Royal Danemac	Ashanti	ADVANCE STTA Consultant	Advise on business strategy, and way forward on critical business issues Assistance to train staff on the management and maintenance of soy oil refinery	Completed STTA contract signed, assignment yet to begin
G. Bosomtwe Ventures	Ashanti	STTA Consultant	Development of Soy based 5% poultry concentrate	Ongoing
E-GABs	Brong Ahafo	ADVANCE	Resolution of supply disputes with ADVANCE OB resulting from supply of poor quality soybeans Advise on acquisition of grain cleaner	Completed Firm has obtained quotes from vendors
Nhyira Boafo Rice Mill	Western Sefwi Bekwai	ADVANCE	Improved record keeping	Completed
Focus Mill	Western Sefwi Bekwai	ADVANCE	Improved record keeping	Completed
Agricare Ltd	Ashanti	ADVANCE	Support to develop outgrower scheme Financing to scale up maize outgrower scheme	Firm has provided support of seed and fertilizer, covering 500 Ha to 24 OBs in 5 regions Ongoing
Soybean Processors (Royal Danemac. Vester Oil, Inter-Grow, G. Bosomtwe)	Various	STTA Consultant	Product quality audit of local soycake using imported soymeal as benchmark	Ongoing

BDS Needs Assessment of Firms

In addition to the firms receiving technical assistance, the project also assessed three buyer firms to identify areas where they may need technical assistance beyond supply chain linkages to farmers (Table 25).

Table 25: BDS Assessment of Buyers

Name of Firm	Home Region of Firm	Firm Type	Key Needs
Habibat Enterprise	Ashanti	Aggregator	Assistance to establish a food processing operation in Wa, UWR
Clean Grain	Brong-Ahafo	Aggregator	Working capital financing
High & Mighty	Brong-Ahafo	Maize processor - foods	Improvement in processing methods and food safety

2.3. TRADE ASSOCIATION SUPPORT

Ghana Grains Council

The Ghana Grains Council (GGC) continued implementation of activities under the second year grant agreement of $350,000, executed on July 2, 2015 for 12 months, ending June 30, 2016. A third year grant agreement for the period of September 1, 2016 to August 31, 2017 for an amount of $200,000 was executed. The grants have the following objectives:

i. Enhance grains market development by up scaling grain actors' participation in the GGC WRS to trade in graded grains
ii. Optimize GGC member benefits through the development of diversified service delivery packages
iii. Policy influencing through advocacy on major issues that limit the efficiency of the grains sector and WRS.

The activities and results presented in this section cover the second year grant which expired on June 30, 2016.

GGC Market Access Initiatives and Warehouse Receipts Program

GGC conducted the following trainings during the program year.

- Best practice in grains storage, grains quality & standard Assessment and GGC WRS for 152 OBs and 192 smallholders in the three Northern regions
- Grain quality standards for 830 smallholders in the three Northern regions
- Post-Harvest Handling (PHH) and Quality Standards for 243 rice actors (36% female) comprising farmers at the Bontanga and Tono irrigation dams in the Northern and Upper East regions respectively, and transporters and grain handlers at the Aboabu market, Tamale.
- Market Information System (MIS) for 31 grain value chain actors in Tamale. This was done in collaboration with ESOKO Ghana.

GGC designed and piloted a Manual Warehouse Receipt System (MWRS) at ten community warehouses in the Northern, Upper East and Upper West regions. This "Second tier WRS" is an initiative to expand access to WRS by smallholders and community warehouse operators. The results of the pilot indicate that 140.1 MT of maize, paddy rice and soybean was receipted by 28 depositors in these community warehouses and receipted grains worth GHS 112,320 ($29,070) was sold in the markets in the various localities.

GGC identified 34 community warehouses in the Brong Ahafo region as potential candidates for participating in the second tier WRS. The average storage capacity of those warehouses is 100 MT, giving an estimated total storage capacity of 3,400 MT.

A key focus of the third year grant is to enroll warehouses in the South in the MWRS, and also enlist the participation of interested financial institutions (i.e. GN Bank, Tizaa Rural Bank, Tumu Cooperative Union, ADB Bank, etc).

GGC Members' Benefits and Diversified Service Delivery

GGC, with the support of ADVANCE, hosted the Fifth Annual Pre-harvest Agribusiness Event in Tamale on October 15, 2015 as well as the First Annual Southern Ghana Pre-harvest Agribusiness Event in Kumasi on March 3, 2016. As part of both programs, a training was delivered to farmers on maize and rice quality standards.

As part of its marketing and membership drive, GGC mounted an exhibition at the 31st National Farmers Day Celebration held on December 4, 2015 in Bolgatanga, Upper East Region. Membership care visits were carried out to 16 members in the three northern regions.

At the end of December 2015 the Council had 110 members with about 75% of them in good standing. Total membership fees realized for the year ended 2015 was GHS 147,400 ($38,150).

By the end of September 2016, the Council had received revenue of GHS 28,150 ($7,286) in membership registration and annual membership for the 2016 calendar year.

GGC Policy Influencing Through Advocacy

Two advocacy actions related to grain pricing policy and paddy rice standards were initiated and completed during the reporting year.

1. GGC sought to engage farmers and other value chain stakeholders to assess the influence of the National Food Buffer Stock Company (NAFCO) on grain pricing, effects of grain quality on pricing, and the use of weighing scales and measures. It was funded by the BUSAC Fund with technical support from ADVANCE. The action involved consultative meetings with value chain actors in Tamale and Techiman on grain pricing and focus group discussions with 1,113 farmers and aggregators in the three northern regions of Ghana. It ended with a Stakeholders Policy Dialogue on the subject "Enhancing Grain Pricing Policy in Ghana" in Accra on May 26 2016.
2. Under GGC's continued collaboration with the Ghana Standards Authority (GSA), Physikalisch-Technische Bundesanstalt (PTB) of Germany and grain industry stakeholders, the Agricultural Produce Technical Committee (TC) of GSA reviewed and approved the following:
    - Paddy Rice Standards (gazetted in August 2016 by the Attorney General's Office)
    - Handbooks for the Interpretation of the Standards for Maize and Milled Rice
    - Pictorial on the Maize Standard was completed and printed
    - The design for the Handbooks and Pictorial on the Rice (Milled) Standard was completed. The revised Standard for Milled Rice – DGS 765 was gazetted by the Attorney General's Office in April 2016.

In addition to the above, GGC through its engagement with the GSA, also received TC to review and approval of the handbook and pictorials for the Interpretation of the Standards for Soybean.

Ghana Rice Inter-Professional Body (GRIB)

ADVANCE provided technical and financial support to GRIB to organize the Second Ghana National Rice Festival in Accra, from November 13 – 15, 2015 under the theme "Grow, Buy and Eat Quality Ghana Rice". As part of the program ADVANCE moderated two policy discussions on branding and promotion of local rice, and access to concessionary financing for rice production provided by the EDAIF funded rice project implemented by MOFA.

Ex-President Kufuor sharing his views on developing the Ghana rice industry at the policy forum

ADVANCE staff also participated in the Annual General Meeting of GRIB as observers and supervised the elections of new GRIB executives.

Ghana Input Dealers Association (GAIDA), Upper East Branch

ADVANCE facilitated the training of 27 members (21 males, six females) of GAIDA - Upper East Branch on Safety and Environmental Management of Input Shops. Follow up technical assistance will be provided in FY17 to assist the members of GAIDA in the region to develop and implement shop safety management plans.

Techiman and Wenchi Maize Trade Associations

Training on grain standards at Techiman with delegates from Wenchi Maize Traders Association

Forty-five participants from the Techiman and Wenchi Maize Traders Association were trained on maize quality standards in September 2016 in two separate sessions. The training was based on the Ghana national standards specified by the Ghana Standards Authority for maize (GSS 211: 2013: Specification for Maize). The training sessions were also used to discuss advocacy plans for wide dissemination of maize quality standards amongst the traders, and the use of weights and measures in the grains trade.

2.4. NORTH GHANA PROCESSING UPGRADE

North Ghana Rice Milling Upgrade

Sambay Enterprise was selected as a grantee for a rice mill expansion. The equipment has been installed and is operational. The enterprise completed the millhouse as its cost share while ADVANCE financed the equipment and installation.

New rice mill installed for Sambay Enterprise of Bolga under grant

Food (maize/soybean) Processing Upgrade

The following services were provided to maize/soybean processors in Northern Ghana:

Table 26: Support provided to processors

Name of Firm/ Organization	Location	Nature of Technical Assistance	Status of Engagement
Total Foods	Tamale, Northern Region	Market survey of instant maize/soy foods in the Tamale metropolis	Ongoing
Bee World Enterprises	Tamale, Northern Region	Linked with soybean OBs in Bimbilla for supplies Grant concept note under development	Completed Ongoing
YABCO Focus Company	Bolgatanga, Upper East Region	Trade mission to develop supply linkages to soybean OBs in the Upper East region	Completed

2.5. COMMUNITY BASED MARKET SYSTEMS STRENGTHENED

The strengthening of Farmer Based Organizations (FBOs) has continued throughout the reporting year as a process of transforming them into Farmer Based Enterprises (FBEs). A supplementary Sell More For More (SMFM) training was organized for five FBOs in the Kpandai district in Northern Region.

As a result 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 amounting GHS 593,559 ($153,625) to various end buyers as shown in Table 27.

Table 27: Collective sales realized by supported FBOs

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
Upper East	Biu Cooperative Farmers	Paddy Rice	Accra Aggregators	89.5	134,250
	Amaachaaba Farmers	Paddy Rice	Accra Aggregators	75.0	112,500
	Asiatechaaba Farmers	Paddy Rice	Accra Aggregators	80.0	120,000
	Bonia Yuoniwoba Coop Farmers	Paddy Rice	Asutware Aggregators	71.5	107, 250
Northern	Akpebe Farmers	Rice	Ejura women Rice Processing group, Aframso 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

Region	Name of FBO	Commodity	End buyer	Quantity (MT)	Value (GHS)
	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				**539.4**	**593,559**

Moreover, FBOs were engaged in seed, fertilizers and agrochemicals collective purchases with input dealers such as 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 from the input dealers.

A total of 37 FBOs were engaged in these collective inputs purchases: two in Upper East, 15 in Northern and 20 in Upper West, involving GHS 76,784 ($19,873). Upper West Region FBOs alone spent GHS 57,600 ($14,908) with the input dealer 18TH April who went into contract with some of the FBOs paying 50% before delivery and the remaining 50% after harvesting.

2.6. MARKET PRICE INFORMATION

This reporting year, 22,625 individuals have received maize, rice and soybean market price information in the main markets of the project's five regions of intervention on a weekly basis. The information empowers farmers to negotiate fair prices.

"Thanks to Esoko market price information, we are able to compare prices of different markets which gives us some bargaining power not to be cheated by buyers" Shaibu Alhassan, of Woribogu Kukuo and Mr. Brimah of Fiaso

3. 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

3.1. ADVOCACY GROUP DEVELOPMENT

A list of specific enabling environment constraints affecting the operations of value chain actors, primarily farmers, commodity buyers, processors and transporters were collated and prioritized during the year. These issues were based on feedback obtained from previous policy and farmer fora conducted by ADVANCE in various districts in Northern Ghana, and individual concerns expressed by various value chain actors during their interactions with the project.

Prioritized Enabling Environment Constraints

- Limited access to quality seeds
- Inadequate farm machinery and skilled operators
- Late announcement of Fertilizer subsidy program implementation
- Challenges in registration of agribusinesses at the regional and local levels
- Low utilization of weights and measures in agricultural commodity trade
- Limited access to productive agricultural lands by women
- Impropriate handling and disposal of agro-inputs containers

Subsequently, a request for proposal was sent to 42 NGOs/CSOs operating in Northern Ghana who were pre-qualified during an earlier advocacy capacity assessment carried out by ADVANCE in FY15. Pre-award workshops were organized for potential applicants in the three regions to further explain the objectives and expected results from the activity; and the proposal evaluation process.

Fourteen proposals were received by the closing of the submission date on August 26, 2016. ADVANCE expects to make some grant awards in FY17 to selected NGOs/CSOs to undertake specific advocacy activities on the prioritized issues.

3.2. ADVOCACY CAPACITY FOR NATIONAL ORGANIZATIONS STRENGTHENED

The project facilitated the formation of the following advocacy groups:

- the formation of 14 zonal networks of OBs in the NR, UWR and UER with an adopted constitution and elected executives to undertake advocacy
- Establishment of three regional OB networks for the three Northern regions
- Establishment of one regional FBO network for the UWR

A section of the participants at the FBOs network workshop

Furthermore, 43 FBO leaders including the chairpersons, vice chairpersons, secretaries, treasurers and organizing secretaries of the zonal FBO networks were trained on effective leadership, people management, gender, network management and basic advocacy skills.

In June 2016, ADVANCE collaborated with the Agricultural Policy Support Project (APSP) to organize a two-day workshop for 25 FBO leaders (representing six secondary FBOs) on the Food and Agricultural Sector Development Policy (FASDEP II) and its implementation strategy, and the Medium Term Agriculture Sector Investment Plan (METASIP). A key outcome of the workshop was the issuance of a communique by participants calling on government to make subsidized fertilizer accessible and in a timely manner to farmers.

Media coverage of FBO communique:

http://www.ghananewsagency.org/economics/farmers-want-fertilizers-reach-them-in-april--105158

http://thebftonline.com/business/agribusiness/19661/farmers-want-fertilizers-by-april.html

3.3. DISTRICT ASSEMBLIES PLANS FOR AGRICULTURAL DEVELOPMENT

ADVANCE supported two district assemblies, Kassena Nankana Municipal in the UER, and Sissala East District in the UWR, with short term technical assistance to prepare district agricultural investment profiles (DAIPs). The DAIPs were prepared using a participatory process which included the District Department of Agriculture, the District Planning Department, District Social Welfare Department, farmers, FBOs, Non-Governmental Organizations (NGOs), and other private agricultural value chain actors. The districts were sponsored by ADVANCE to exhibit their draft profiles at the 2015 Northern Ghana Agribusiness Pre-Harvest Event held in Tamale in October 2015.

The two districts were selected as pilots, and the lessons learned in developing the DAIPs will inform the approach to the development of the next batch of DAIPs. ADVANCE will explore collaboration with the Ghana Investment Promotion Centre (GIPC) to build the capacity of the districts in investment promotion, and also include their profiles in the GIPC's database of investment opportunities.

3.4. CAPACITY DEVELOPMENT FOR PROGRAM IMPLEMENTATION

Two major capacity development activities were held during the year. First was a training for the local implementing partners, as well as the large grant awardees on USAID's rules and regulations in order to enhance their capacity to manage USAID grant awards both for present and future implementation. The second focused on assessing and building capacity of ACDEP to effectively manage USAID awards in future.

Capacity building on USAID rules and regulations

The project organized a three day training of its partner organizations and local NGOs in order to increase their capacity to manage USAID grant awards for future implementation. The training program was facilitated by ACDI/VOCA's Vice President of Global Support and Award Management and included the participation of 18 individuals from six organizations (GGC, GRIB, GAIP, ACDEP, PAB and Sung Foundation). The content of the program included:

1. A general view of the Flow of USAID Funding
2. Framework of Grant Management and Administration
3. Grant Application Process
    - Solicitation & Competition
    - Eligibility, Evaluation & Selection
4. Organizational Responsibility/Capacity
    - Standards of Responsibility
    - Management Systems
    - Pre-Award assessment
    - Specific Conditions
5. Types of Grants
6. Rules and Regulations
7. Cost Principles
8. Cost/Price Analysis

9. Budget Preparation
10. Procurement Policies and Procedures
11. Property Inventory and Reporting requirements
12. Audit Requirements

With this training, the project expects to see an improvement in the budgeting, procurement and financial reporting of these organizations.

Capacity development for ACDEP

The ACDI/VOCA HQ provided a resource person with expertise in local capacity development to train members of the ADVANCE team on how to use the Organization Capacity Assessment Tool (OCAT) properly and in general capacity building of local organizations. Following the training, ADVANCE conducted a three-and-a-half-day organizational capacity assessment with ACDEP. All the main administrative and technical staff participated in the assessment and identified areas that require improvement in order to effectively manage a USAID project independently. Following this capacity assessment exercise, project management concluded that it was pre-mature to completely hand over the UER operations to ACDEP as originally planned and submitted in the project proposal. Instead, the project has assigned ACDEP the management of Kintampo North area of intervention as well as extend operations to Kintampo South. ACDEP has subsequently set up a sub-office at Kintampo and staffed for that purpose. These operations will be funded out of the existing ACDEP budget and will not require additional funding to ACDEP.

3.5. FBE CAPACITY DEVELOPMENT

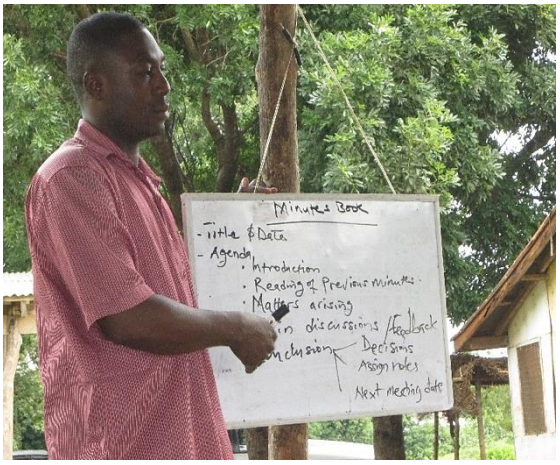
As previously mentioned, ADVANCE's objective for this activity is to transform FBOs into Farmer Based Enterprises (FBEs). An FBE is defined as a more business minded operational organization that provides services (ploughing, bulk input purchase, bulk sales etc.) to, and are economically beneficial to their members.

In order to further tailor the subsequent support to provide to the FBOs, an assessment tool was designed and administered to 45 FBOs. One FBO has been identified as 'in early transition stage', 18 are in 'mid-transition', and 26 are model FBEs (Table 28). For all the non-Model FBEs, specific interventions are being developed to address the noted weaknesses. Every year 15 additional FBOs from the ones that went through the SMFM training will be selected, assessed and supported to become FBEs.

Table 28: FBO's stages by region

Region	# FBOs	FBOs in Formative Stage (0-10%)	FBOs in Early Transition (11-30%)	FBOs in Mid-Transition (31-69%)	FBOs as Model FBEs (70-100%)
Upper East	10	0	0	4	6
Upper West	10	0	0	3	7
Northern	18	0	1	10	7
Kintampo North	7	0	0	1	6
Total	**45**	**0**	**1**	**18**	**26**

To support and guide their transformation into FBEs, the 45 FBOs receiving close attention were monitored and provided on-the-spot training on key records keeping using cash books and other record keeping tools, attendance and dues registers etc. as well as how to write good minutes.



A CDO coaching one of the FBOs on how to keep records

Besides the achievement on collective sales and inputs purchased by the FBOs described in the section D.2.5, other accomplishments include:

- A total of 15 FBOs were supported to register with the Department of Cooperatives.
- Mentoring and coaching on resource mobilization to be able to provide needed services to members, including establishment of group farms/demo sites, training and establishment of VSLAs to 100 FBOs, how to collect and manage dues and levies etc.
- A total of 49 demos were hosted by FBOs: 37 demos in Northern Region, six demos and seven group farms in the UER and six demos in the UER. The demos were used to train members on good agronomic practices whilst the group farms served as income generation ventures.
- A total of 41 FBOs out of the 45 FBOs being actively mentored rendered mechanization services to their members during the year.
- Five FBOs have set up office spaces in the UWR for their meetings and to manage their documentation adequately.

3.6. SMALLHOLDER CAPACITY BUILDING

Numeracy Training

During the reporting year, 12,682 farmers (6,681 females or 52.7%) were trained on numeracy by 55 trainers. An expert on Numeracy Training was recruited to conduct the training of trainers. All regions exceeded their targets as seen in (Table 29)

A learner demonstrating her knowledge in numerals

"I used to think that people who could write numerals were magicians, this training has enlightened me to know how to write numerals and can now identify and give out my house number" – Awonlimai Mary, 46, Sandema

"I can now identify expiring dates on chemicals that I used on my farm, thanks to ADVANCE"- Mariama Sumani, 50, Diare

"Now when the buyers weigh my produce, I am in a position to know the weight of my produce because I can identify numerals, and so no buyer can cheat me again" – Ayishetu Mahama. 56, Dimonayilli

Table 29: Numeracy training beneficiaries by region

Region	Target	# Districts	# Communities	Male Beneficiaries	Female Beneficiaries	Total
Northern	5,000	10	129	3,076	2,122	5,198
Upper East	2,500	9	42	1846	2,905	4,751
Upper West	2,500	6	21	1,079	1,654	2,733
TOTAL	**10,000**	**25**	**192**	**6001**	**6,681**	**12,682**

Farming as a Business Training

Training in Farming as a Business (FaaB) is carried out to build the capacities of smallholders and instill the concept of business in their farming activities, especially regarding business planning and implementation. The FaaB trainings were run during the off-season to allow farmers to participate in the sessions with no restrictions from their farming. This reporting year, 14,008 farmers (out of whom 7,302 or 52% were women) benefitted from the FaaB trainings. As seen in Table 30 below, targets for this activity were exceeded.

Table 30: FaaB beneficiaries by gender and region

Region	Target	# Districts	# Communities	Female Beneficiaries	Male Beneficiaries	Total
Northern	6,000	14	130	3,024	3,487	6,511
Upper East	3,000	8	43	2,066	1,534	3,600
Upper West	3,000	6	91	2,212	1,685	3,897
TOTAL	**12,000**	**28**	**264**	**7,302**	**6,706**	**14,008**

"Before the training, I farmed without knowing how much I spent, any amount of produce I get, I feel I have made profit, but now, I keep records of all my spending, so that after harvesting, I would know how much I spent to enable me price my produce to be able to make profit" – Abdul Rahaman Sumaila, 28, Gburimani

"I no longer go to the market to buy my seed anyhow, but I look for [certified] seed sellers to buy for my farm as a result of the training I had from ADVANCE"- Rukaya Abubakari,45, Diare

E. PROGRAM SUPPORT

1. Gender Program

In FY16, the project continued mainstreaming gender in all activities to ensure that it was fully integrated. However, there are specific interventions that are highlighted here, and they include:

- Building women's business, leadership, and entrepreneurship skills
- Increasing women's access to land for production
- Increasing women's access to financial services and improved technologies
- Celebration of the International Day of Rural Women and the International Women's Day.

1.1. BUILDING WOMEN'S BUSINESSES, LEADERSHIP AND ENTREPRENEURSHIP SKILLS

Seven new female nucleus farmers (NF) were profiled during the year exceeding the annual target of six NFs. The new NFs participated in the Outgrower Business Management (OBM) trainings and their outgrowers have undergone training on numeracy, FaaB and introductory GAP trainings.

To further provide a greater platform for women to aspire to leadership positions in FBOs and in other public spheres, the project trained 153 beneficiaries (120 females, 33 males) in gender and leadership. The group was made up of FBO leaders, aggregators, and female lead farmers in the Kintampo North district. Training topics included self-awareness, acts of leadership, team building, decision making, communication and acts of public speaking, conflict management and resolution, and time management.

1.2. ACCESS TO LAND FOR PRODUCTIVE WOMEN

Fifteen sensitization forums were held in communities across the Upper East, Upper West and Northern Regions on how and why fertile land could be made available to women smallholder farmers. The specific issues discussed included control over land, cultivated crops, land usage by women, inputs support to women, and security/tenure of land being used by women. It was emphasized that women required lands close to the communities given the other family tasks they carry, besides farming. The land sensitization forums also comprised advocacy meetings with OBs networks in the various districts to further increase the awareness for the need to support women outgrowers with services such as ploughing and agro-inputs (fertilizer, seeds and weedicides). In total, the forums were attended by 773 participants (287 males, 486 females), made up of OBs, field managers, chief, assembly members, queen mothers, elders, opinion leaders, magajias[7] and smallholder famers.

"We are ready to hand over some of our fertile lands to our women, and support them with inputs to farm. They are really the ones feeding the community (…) If women have access to fertile lands for production there will be a sustainable food security and the nutritional values of our foods in our homes will be enhanced to reduce malnutrition among our children", Bussie Chief in the UWR ' made this pledge during a session in Bussie, UER.

"ADVANCE has helped my wife to have a better maize farm than mine, I shall learn more from her in next farming season" remarked Luccilia husband (the Tuna group leader's husband)

Following the sensitization forums, 664 women were allowed to plant 1,138 acres of fertile land closer to homesteads by communities' chiefs, OBs, landlords or *Tindanna's, magajia's* and husbands in the three northern operational zones. The Tuna Women Association were given over 150 acres of land on which the group members individual and group farms.

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

As mentioned in section D.1.7, women's access to financial services was improved through the formation and support to 214 VSLAs. These mainly benefitted women which comprise the majority of the members, with 3,470 females out of the 4,890 total members, or 71%.

[7] Magajia is a Housa word for a female group leader

A female VSLA group and Listenership Club

1.4. WOMEN'S ACCESS TO INFORMATION AND COMMUNICATION TECHNOLOGIES

As discussed in section 1.5, ADVANCE and community-based local FM stations supported the formation of 1,000 listenership clubs made up of 15,797 female and 13,109 male smallholder farmers linked to OBs and FBOs. This initiative is enhancing the use of media as a tool for the dissemination of agricultural information by productive women groups. These groups were supported with one solar powered radio set each to promote access to agriculture information as they listen to agriculture programs broadcasted by these stations.

"*The women in this community will now be more united because we will meet every evening as a club to listen to how to increase our yields. This is my first time am seeing this type of support in this whole community*". Patience Bakime, from Gulumpe community in Kintampo North, belonging to the Tinoyl Women's Group

"We women cannot own radios but now we have one that we can meet as a group and listen to the production of crops and also animals. We are always busy during the day so we don't listen to radio but now we can meet in the evening to learn on production issues. As you can see we are all smiling because of this support. We were educated on the need to form this club and we thought it was a joke but now we see it is not a joke". Afia Afra from Suronuase in Kintampo North, where majority of the listening club members are made up of women

1.5. INTERNATIONAL DAY OF RURAL WOMEN

Yacintha Borgkur, Salamatu Fusheini and Alice Asekabta receiving their prizes.

During the reporting period, in commemorating the United Nations International Day for Rural Women, the project honored three smallholder women farmers from the Northern, Upper East and Upper West Regions during the Northern Pre-Harvest event. Yacintha Borgkur, Salamatu Fusheini, and Alice Asekabta, were acknowledged for their support to smallholder women farmers to adopt productivity enhancing technologies that increased their yields and incomes. They were each presented with a citation and a prize.

1.6. INTERNATIONAL WOMEN'S DAY CELEBRATION

ADVANCE celebrated this year's International Women's Day with the theme "Stand for Gender Parity in Agriculture" in Janga, a community in the West Mamprusi District of the Northern Region. The event was hosted by Mahama Tia, a nucleus farmer who brought together over 500 women and men, under his own sponsorship, MTN's and Heritage Seeds'. In attendance were the Janga Chief and representatives from MoFA, the District Assembly and the District Health Directorate.

Five women, Dahatu Mamatia, Azaratu Solomon, Yakubu Memunatu, Rose Yildana and Dahamatu Braimah, cultivating an average of 2.6 acres of rice, were also given awards for their good farm maintenance, active participation in demonstration activities, prompt repayment for services delivered, and application of good practices resulting in increased yield.

The Tizaa Buni Women's group with their input awards.

Overall Best Woman Farmer receiving her award.

1.7. WOMEN'S ACCESS TO IMPROVED TECHNOLOGIES

During the year under review, 57 female OBs, lead farmers and FBO leaders benefitted from the Women and Technology trainings conducted by the project. Participants were exposed through audiovisuals and hands-on practical sessions, to the use and efficiency of production based agricultural implements that are time-saving, drudgery reducing, affordable, and mostly handy for women farmers. The participants pledged to transfer knowledge to other women farmers, and also save towards the acquisition of some of the implements.

Eight women OBs and groups have applied to the ADVANCE Small Equipment Grants (SEG) to purchase shellers/threshers for harvesting. This is a notable achievement as most of these bigger implements were the preserve of men. A female OB, Fulera Adamu, from the UWR applied for and received a Massey Ferguson tractor from ADVANCE through grant leverage. She paid the required amount of GHS 37,450 ($9,693) from her own savings.

"Trainings like this from USAID ADVANCE have made me and my business strong like a nail and even at a point when I was sick and hospitalized, my money was working for me". Mary Anabiga, Manager of Mary's Grains and Nuts

"What I heard and saw is beyond what [I] was expecting. It has opened my eyes to what can help me and group members in what we have been doing, I will like to buy the power tiller and later a tractor then I can get the multipurpose thresher", OB Fati Zakaria

"What amused me is that the same machine [is] threshing soya beans and rice [into] very clean grains; we used to broadcast our seeds, but I will talk to my group to acquire the simple planters and the dibblers because even now it is becoming difficult to get people to dibble for us". Salmu Iddrisu from Diari

2. Environment Support

The ADVANCE environment support efforts are threefold:

- Ensuring compliance with Title 22 of the Code of Federal Regulation, section 216
- Improving agrochemical management among project actors
- Promoting climate smart technologies and practices among farmers

2.1. GENERAL ENVIRONMENTAL COMPLIANCE

Progress with PERSUAP Implementation

Pesticide use monitoring was conducted for all demos as basis for measuring progress in the implementation of the Safer Use Actions required by the PERSUAP. The areas of assessments and recommendations included

- Reducing reliance on pesticides
- Promoting the use of PPEs:
- Discouraging re-use of pesticide containers:
- Promoting safe disposal of pesticide containers:
- Discouraging women and children from pesticide application
- Promoting the services of SSPs
- Avoiding the use of highly toxic products

Over 9,600 empty pesticide containers were safely disposed by burning and burial by trained spray service providers. Spray Service providers, also provide education to their clients on pesticide use safety in the course of their work. Other farmers who previously discarded empty pesticide containers on their farms have taken a cue from the SSPs and beginning to do the right thing.

John Dimah, an OB in Upper West, previously discarded pesticide containers on his farm. He now gathers them in a sack and invites APO Samuel Asinvim to guide him to properly dispose them off.

John Dimah's pesticide collection point

Recommendations provided to grants applicants included:

- 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 operators should be trained and properly licensed. Tractor operators require license E to operate.
- Where farms are located on a slope, farming should only be done across the slope. Ploughing should be avoided when slopes exceed 30 degrees
- Acquisition of basic protective gear such as hand gloves, nose masks, eye protection gear

Environmental Screening of Sub-grant Applications

Twenty tractor grant applications were screened for potential environmental concerns in line with §216.3 (a) (7) (i) of Title 22 of the Code of Federal Regulation. Environmental review reports, detailing mitigations actions to be carried out, were completed for each applicant. The project will work with each grant recipient to put in place systems and structures that allow for the mitigation of the particular environmental concerns peculiar to them.

Two rice mills (Sambay rice mill and Tiyumba rice mill) were also screened. Tiyumba rice mill did not present any significant environmental concerns. Environmental concerns for Sambay rice mill were shared with the owner and recommendations were provided.

2.2. IMPROVING AGROCHEMICAL MANAGEMENT

Training and Equipping Spray Service Providers (SSPs)

Pesticide usage in Ghana continues to increase as agricultural production intensifies. However, associated with the increased use of pesticides are environmental and health problems which have arisen due to indiscriminate use and inappropriate handling of chemicals. Workers exposed to pesticides are often illiterate, and lack training, equipment, and the necessary safety information. The spreading use of highly toxic pesticides which are sometimes badly labeled, poorly packaged and irresistibly promoted are factors which add to the hazards involved in pesticide use in Ghana.

In collaboration with the Plant Protection and Regulatory Services Department of MoFA, SSP training covered:

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

To address these problems, the project has adopted a strategy of promoting the services of trained commercial spray service providers linked to OBs and input dealers. This year the project trained and equipped 180 individuals and provided each of them with a Matabi knapsack sprayer, an overall coat, a nose mask, a pair of hand gloves and record book for each person. Each person in turn was required to purchase wellington boots, goggles and a large plastic bag for collecting empty pesticide containers.

The total investment in equipment procurement was GHS 60,742.50 ($15,721). Records compiled from 171 of the 180 SSPs trained and equipped show that they provided services to 3,616 farmers (1,400 of them being women) on 9.916 acres of land (Table 31). Their total revenue amounted GHS 90,864 ($23,517), **representing a return of on investment of $1.50 for every $1 invested**. This is a significant accomplishment in the support to the value chains: farmers have increased access to safer and more efficient agrochemicals spraying services, and the youth composing the SSPs have now a stable source of income, which they didn't have before.

Table 31: Summary records of Spray Service Providers

Sub-office	Total acres sprayed	Number of farmers served			Revenue (GHS)	Amount/SSP (GHS)	Number SSPs
		M	F	Total			
NR	2,951	516	176	692	18,474.00	710.54	26
UER	3,066	752	423	1,175	24,216.00	403.6	60
UWR	1,661	514	464	978	20,835.00	372.05	56
South	2,236	434	337	771	27,339.00	942.72	29
Totals	**9,914**	**2,216**	**1,400**	**3,616**	**90,864.00**	**531.37**	**171**

Training of Input Dealers in Safety and Environmental Management

Thirty-seven GAIDA members in Upper East Region were trained on the implementation of safety and environment management systems for their input shops. The purpose of the training was to help participants in the following areas:

- Identify health, safety and environmental problems associated with their businesses.
- Be more aware of the skills needed to tackle hazards and risks in their businesses.
- Be able to implement safety procedures and practices for themselves, their customers, and the environment.

The project is working with each input dealer to develop and display on their premises simple safety guidelines for potential chemical, physical, and fire hazards.

3. Grants Program

The year began with an effort by the project to streamline grant documentation in response to revised processes and procedures introduced by USAID and ACDI/VOCA. In line with its mandate to complement technical delivery in the field, the grants program initiated a number of procurements and related activities to assist beneficiaries to increase production, improve post-harvest practices and storage facilities, as well as to introduce uniform standards and quality in the marketing of agricultural produce. Additionally, the Grants Program continued to support the Ghana Grains Council (GGC) and the Ghana Agricultural Insurance Pool (GAIP) in their efforts to complement the projects' work towards an efficient warehouse receipt scheme and promoting crop insurance respectively.

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

During the reporting period, a total of 440 pieces of equipment were awarded to 364 direct beneficiaries valued at over $746,000 to facilitate production and post-harvest handling activities of smallholder farmers. These ranged from production equipment such as tractors and power tillers, to processing equipment such as threshers and a rice mill.

Twenty tractors and accessories were granted to 20 OBs in the three regions of the north to facilitate timely land preparation for their out growers, as well as post-harvest processing of produce. OBs were also awarded 16 motor bikes and 20 tri-cycles to support in the field management program and to assist women farmers especially in the transportation of farm inputs.

Table 32: Granted equipment by type and region

Equipment Type	NR	UER	UWR	Total quantity	Value USD
Tarpaulins	92	60	62	214	65,682
Weighing Scale	6	4	10	20	3,077
Moisture Meter	2	1	2	5	770
Disc Plough	3		3	6	18,415
Power Tiller	10	2	1	13	39,833
Bullock Plough	-	5	-	5	375
Motorized Tri-Cycle	10	5	5	20	35,021
Motor Bikes	10	3	3	16	26,308
Samsung tablets	60	30	30	120	52,373
Tractors & Implements	10	5	5	20	497,403
Rice Mills	-	-	1	1	30,555
TOTAL	203	115	122	440	746,142

Furthermore, ADVANCE collaborated with the Grameen Foundation to train OBs and their agents in the Southern zone on the use of ICT to provide extension services to OGs in their communities. Following good successes of this pilot activity, it has been extended to the three regions of the north with the provision of 120 Samsung Galaxy tablets and training to their OBs and agents. The objective was to enable them expand and improve upon the quality of extension service they provide to their OGs. Grameen Foundation conducted the trainings and is assisting with the monitoring process.

In addition, Sambay Enterprise, a rice processor located in Bolgatanga, in the Upper East Region was awarded a rice mill through the grants program. This award will facilitate the processing of paddy rice from farmers within the Fumbisi valley, and Tono and Vea irrigation catchment areas to avoid the drudgery of transporting paddy to the South for processing.

Moreover, the process has commenced to procure about 40 multi-purpose shellers and threshers to support farmers in post-harvest handling.

3.2. LOCAL PARTNERSHIP GRANTS (LPG)

Ghana Agricultural Insurance Pool (GAIP)

ADVANCE, in collaboration with USAID's Financing Agriculture Project (FinGAP) has renewed the grant agreement with GAIP to increase farmers' access to crop insurance through the funding of marketing officers. The agricultural insurance scheme is designed to buy down associated weather risks which deter farmers from

increasing investment in their farms. The first phase of the support ended in December 2015, the current award, of GHS 285,000 ($73,643) from January 2016, will consolidate and expand the previous accomplishments and focus on sustainability of the scheme as an exit plan when the grant support ends.

Ghana Grains Council (GGC)

The GGC continued to receive grant support from ADVANCE during the reporting period. This grant supported GGC's implementation strategy to establish and operationalize its warehouse receipts system, create an operating environment with uniform standards and grades that are accepted by all in the industry, and provide warehousing services that are of consistent high quality to insure against major loses and maintain defined quality. GGC's current grant agreement is a one year, $200,000 agreement that began in August 2016.

Projections for FY17

In FY17 the project will increase its focus on building the capacity of local organizations to be able to work effectively with USAID funding to complement the efforts of the project. Training on finance and administration will be rolled out for staff of these partner organizations, and it is expected that ADVANCE will provide them with support funding to implement project activities in areas which are out of easy reach by ADVANCE project staff.

ADVANCE will introduce simple but effective equipment technologies, promote good management practices among value chain actors, and facilitate good marketing strategies to increase productivity, efficiency and competitiveness of the enterprises.

4. Monitoring, Evaluation and Learning

4.1. MONITORING AND EVALUATION

The ADVANCE Program also focused on conducting annual surveys such as gross margin surveys, profit sharing and profitability studies and launching learning research and learning activities. Routine activities such as profiling, card printing, data collection on trainings, OB to smallholder investment, sales and verification were ongoing as well.

Database and Data Collection Forms

ADVANCE continue to improve its M&E database this year. In FY16, the electronic forms in SharePoint were moved to an Access Web App to provide more stable connection as well as offline options to the field team during data entry. A new database, Demosys, has been procured and being used to collect, analyze and store the demonstration sites data.

All data collection tools were also reviewed based on challenges and requests encountered in FY15, following the recent changes to Feed the Future Indicators. To respond adequately to 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, is to collect the remaining inputs costs and technology application practices, and to estimate yields. The third phase, in April and July is for the collection of the sales data of the produce harvested. The second

phase of the 2015 crop season gross margin survey ended in December 2015 for the Northern Ghana regions, gathering data from 2,400 beneficiaries. The third phase took place in April-May and July-August 2016.

The first phase of the 2016 gross margin data collection was implemented in May 2016 for ADVANCE North. Due to a different crop calendar, the Southern zone was able to conduct both its first and second phase surveys, the second one ending in September 2016. A total of 2,282 farmers were surveyed.

Table 33: Beneficiaries surveyed in 2016 by sub-office and gender

Region	# of Districts	# of Community	Female	Male	Total
ADVANCE South	15	48	35	168	203
Northern Region	22	321	208	526	734
Upper East Region	16	258	353	569	922
Upper West Region	14	168	114	309	423
Total	67	795	710	1,572	2,282

Capacity Development

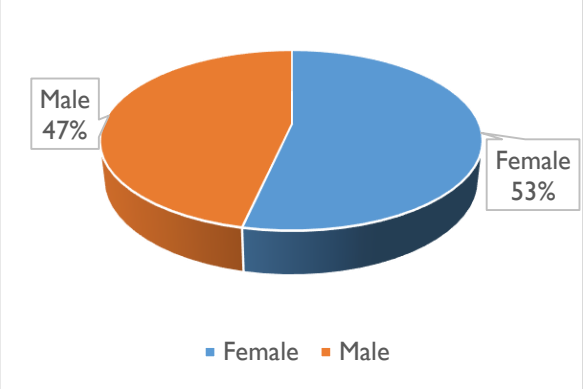
All technical staff members participated in a two-day training, conducted in each regional office, on indicator definitions, collection and calculation, report writing as well as navigation through the project dashboard that provides live access to the indicator values. The APOs and the field M&E team were also taken through the Demosys database. Additionally, 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 achievements 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.

Profiling and Card Printing

During the year under review, 33,092 (17,694 females, 15,398 males) individuals were profiled using tablet based profiling questionnaires as well as paper based forms. This includes 160 aggregators, 33 input dealers, 80 NFs, 3 processors and 32,816 smallholder farmers. The total for this year brings the total number of individuals profiled to date to 115,590. Also, beneficiary smart cards were printed for, and distributed to, the newly profiled farmers.

Figure 14: FY2016 profiled beneficiaries by gender



4.2. LEARNING ACTIVITIES AND KNOWLEDGE FORUM

Annual Work Planning

The project held its annual workplan review meeting in Sunyani in June 2016. Attended by all project staff, the event aimed at presenting the previous years' achievements, shortfalls and lessons learned and designing the strategies and activities for FY17.

Learning Studies

Eight learning topics were identified by the staff during the January Technical Quarterly meeting. Out of these topics, six studies were conducted through qualitative and quantitative data collection and analysis:

- Effects of grants provided to the OBs and OGs in UER
- Rainfall effect and management strategy in UWR's communities where project data demonstrated no relationship between rainfall and yields
- Maize harvest and post-harvest loss estimation
- Household storage practices by project beneficiaries in the NR: data has been collected and is being analyzed
- Prevalence and reasons for non-utilization of threshers and shellers in Northern Ghana
- OBs/OGs' profit share: data has been collected and is being analyzed

The learning study on the effects of the project's activities on nutrition could not be implemented as no Ghanaian firm submitted a bid following ADVANCE's call for proposal for this consultancy. In FY17, ADVANCE will open the competition to international consultants and firms.

The study on the influence of proper application of seeds and fertilizers on maize yield will be finalized in FY17. Data on farmers' practices has been collected during the first phase of the 2016 gross margin exercise, related yields will be collected at harvest, during the survey second phase in November 2016.

4.3. GEOGRAPHIC INFORMATION SYSTEM (GIS) AND MAPPING

Trainings on use of Global Positioning System (GPS) were conducted for 51 staff and 36 gross margin survey enumerators across all sub-offices.

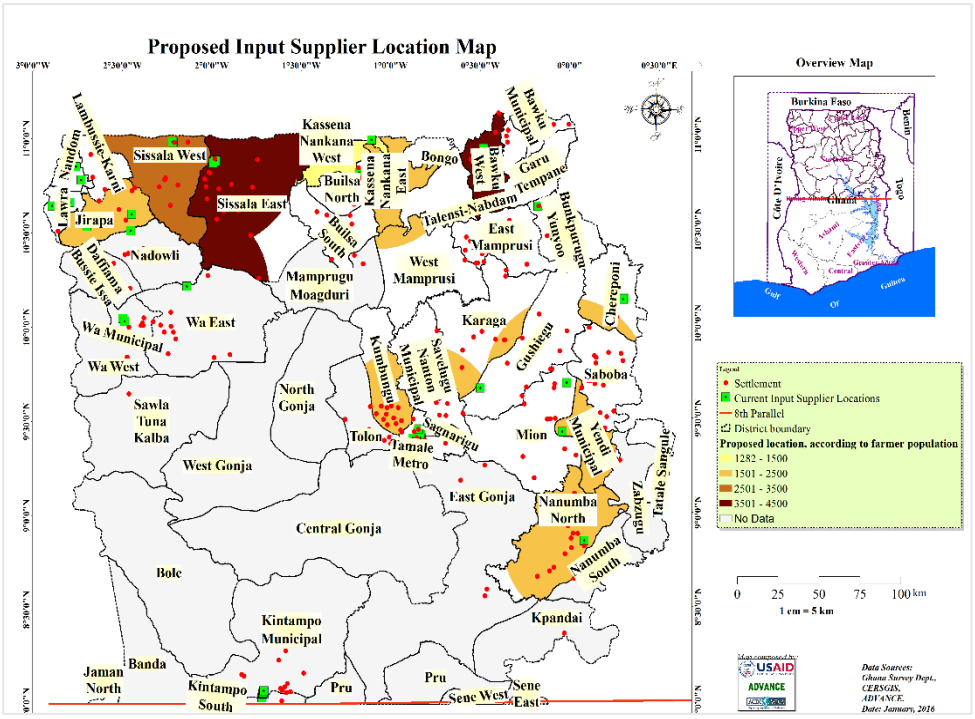
ADVANCE hosted a GIS intern from the University of Ghana for two months and built his capacity in map production and conducting spatial data analysis.

Over 70 maps and analyses were conducted to showcase the project's achievements and to answer staff data requirements. These include:

- 2015 ADVANCE South Demo Sites on Soil Suitability Map
- 2016 ADVANCE South Demo Sites on Farmer Beneficiary Map
- 2015 ADVANCE North Demo Sites on Soil Suitability Map (Northern Region, Upper East and Upper West Regions
- 2016 ADVANCE North Demonstration Locations on Farmer Beneficiary Map (Northern, Upper East and Upper West Regions)
- Proposed Input Supplier map of Northern Ghana
- Rice Yield Map from MoFA Estimates over Rice Soil Suitability Map for Rice Festival
- Demos Comparison Maps (Norther, Upper East and Upper West, Regions – 2014,2015,2016)
- Distance Map of Senior Agric Production Officers and their Outgrowers
- 2016 Beneficiary Map
- 2015 Profiled and Beneficiary Maps (Northern, Upper East, Upper West, ADVANCE South)
- 2016 Technology Adoption Maps for ADVANCE South – (Fertilizer Usage, Crop Rotation, Minimum Tillage and Planting in Rows)
- Radio Listenership Club Maps – (Northern, Upper East, and Upper West Regions)
- Soya Community Production Map (Northern Region)

- ADVANCE Beneficiary Farmer Based Organisations Map
- A map of Distance of Outgrower Business from Radio Station

Figure 15: Example of map requested by the staff on proposed input supplier location



5. Public Relations and Communications

Through its Public Relations and Communications (PRC) activities, the project continued ensuring both project and USAID visibility while highlighting its activities, progress, impact and successes through bi-weekly bullets, success stories, newsletters, videos and media publications.

Bi-weekly Bullets and Success Stories

During the reporting period, 73 informational bi-weekly bullets and 18 "Telling our Story" and personal interest stories were submitted to USAID. The following five stories were published on the ACDI/VOCA website and featured in the ACDI/VOCA's weekly e-newsletter distributed to all employees of the organization:

- Technology Enhances Effectiveness of Farmers
- Ghana ADVANCE II empowers and connects female farmers with market and equipment
- ADVANCE scales up mobile financial services
- How an ADVANCE OB beneficiary –Mohammed Zion - is making an impact
- Ghana ADVANCE issues 260 grants to increase farmers' efficiency
- Company grant boosts Ghanaian agricultural radio broadcasting

In addition to the stories listed, ADVANCE was also featured in the November/December 2015 edition of Frontline, USAID's magazine, in a story: "Learning the Skills to Flourish No Matter What Comes their Way"

Link to the stories:

- http://www.acdivoca.org/2016/09/technology-enhances-effectiveness-of-ghana-advance-ii/
- avglobal=acdivoca.org@mail28.suw11.mcdlv.net
- avglobal=acdivoca.org@mail206.suw12.mcsv.net
- avglobal=acdivoca.org@mail250.atl101.mcdlv.net
- avglobal=acdivoca.org@mail244.atl171.mcdlv.net
- https://www.usaid.gov/news-information/frontlines/resilience-2015/learning-skills-flourish-no-matter-what-comes-their-way.
- http://acdivoca.org/resources/newsroom/news/tech-company-grant-boosts-ghanaian-agricultural-radio-broadcasting

Quarterly Newsletter

Four quarterly newsletters were published and distributed to more than 1,000 recipients each, 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 to increase awareness of project's impact within ACDI/VOCA. An interactive version of the March 2016 newsletter was posted on the ADVANCE project page on the ACDI/VOCA website under a newly created headline "Latest News". Link to the newsletter: http://acdivoca.org/node/2472

Project Photo Database

The project submitted 26 field photos to the 2016 Communication & Outreach Annual Photo Contest organized by ACDI/VOCA. The contest is used to help refresh the organization's photo library and showcase the project work on the web and in print publications. In addition, ADVANCE held its quarterly photo contests among its staff to help build up its photo library for use in various communications products. Some of these photos are being used on the ACDI/VOCA and METSS websites. To motivate staff to continually participate in the photo contest, awards are given to the first, second and third place winners.

Building Public Awareness

ADVANCE utilized electronic and print media during key project events to build public awareness of its support, progress, and impacts. Media coverage included:

- A story on smallholder farmers trained in fertilizer application by USAID/ADVANCE and Yara Ltd. was published in the following newspapers:
    - Graphic Business, October 5, 2015, Page: 30
    - Business and Financial Times, October 5, 2015, Page: 38
    - Ghanaian Times, October 2, 2015, Page: 27

  Links to electronic publications:
    - Publication: Ghana Web, Date: October 2, 2015 http://www.ghanaweb.com/GhanaHomePage/regional/Smallholder-farmers-schooled-on-fertilizer-application-385333?gallery=1
    - Publication: Kasapa Fm Online, Date: October 4, 2015 http://www.kasapafmonline.com/2015/10/smallholder-farmers-trained-on-best-agronomic-practices/
    - Publication: Africa News Hub, Date: October 8, 2015 http://www.africanewshub.com/news/3959808-smallholder-farmers-schooled-on-fertilizer-application
    - Publication: The Ghanaian Times Online.com, Date: October 2, 2015 http://www.ghanaiantimes.com.gh/smallholder-farmers-schooled-on-fertiliser-application/
    - Publication: Ghana News Agency, Date: October 3, 2015

http://www.ghananewsagency.org/science/smallholder-farmers-schooled-on-fertilizer-application-95199
    - Publication: myjoyonline.com, Date: October 8, 2015 http://www.myjoyonline.com/news/2015/october-8th/smallholder-farmers-schooled-on-fertilizer-application.php
    - Publication: citifmonline.com, Date: October 2, 2015 http://regional.citifmonline.com/2015/10/02/smallholder-farmers-schooled-on-fertilizer-application
    - Publication: News Ghana, Date: Monday, October 4, 2015 http://newsghana.com.gh/farmers-benefit-from-fertilizer-application-training
- A story on the First Annual Southern Ghana Pre-harvest Agribusiness Event - "25% of food lost through poor post-harvest handling" was published in the Business & Financial Times, March 9 –10, 2016, Page : 4 and on:
    - Publication: The Finder, Date: March 10, 2016 http://www.thefinderonline.com/News/USAID-co-hosts-agribusiness-pre-harvest-event.html
    - Publication: News Ghana, Date: March 4, 2016 http://www.newsghana.com.gh/usaid-and-ghana-grains-council-to-hold-agric-forum-in-kumasi/
    - Publication: African Press Organization, Date: March 4, 2016 https://appablog.wordpress.com/2016/03/04/usaid-co-hosts-first-annual-southern-ghana-agribusiness-pre-harvest-event/
    - Publication: Ghana Business News, Date: March 5, 2016 https://www.ghanabusinessnews.com/2016/03/05/usaid-holds-first-agric-pre-harvest-event-for-southern-ghana/
    - Publication: Ghana.gov.gh http://www.ghana.gov.gh/index.php/media-center/news/2547-invest-in-agriculture-for-poverty-alleviation-usaid-director-urges-government
    - Publication: West Africa Wire Reports, Date: March 6, 2016 http://westafricawire.com/stories/510699371-usaid-holds-pre-harvest-event-in-southern-ghana
- A story on the International Women's Day celebration – " USAID ADVANCE Marks International Women's Day" was published on Ghana News Agency, Date: March 11, 2016

  http://www.ghananewsagency.org/social/usaid-advance-mark-international-women-s-day--101433

F. LESSONS AND SIGNS OF CHANGE

There are several lessons that were learned during the reporting year, as well as signs of change that we believe will ensure sustained results beyond the project's life.

1. Lessons learned

There are several lessons learned during the year, especially regarding the rapid interest in ripping as a CSA practice have been introduced, and some trade and marketing

Ripping

Five OBs, together with 13 of their outgrowers, adopted ripping on a commercial scale covering a total of 107 acres in the ADVANCE South zone of influence during the 2016 minor season. This technique was first introduced in the North in 2015, and in the South during the major season of 2016.

Lessons learned from this included:

- The **experiential background** of the host farmer for the first ripped plot demo site in the South deepened his impression and his conviction about the improvements. He was a farmer that was giving up on maize production due to recent changing climatic trends that is making maize production and yields unprofitable in the area. His yields from the two-acre ripped field compared to the yields in ploughed fields especially as a result of the extended drought made him change his mind, the comparatively less use of fuel.
- A field day on his field that allowed him **passionately share his experience** and results with 18 other OBs led four other OBs immediately deciding to adopt the practice on commercial scale during the following minor season.
- The **single season and the limited number of rippers** in the north may have contributed to relatively lower adoption compared to the south, where many farmers wanted their farms ripped during the second season, having been exposed to it in major season on demo sites
- Ploughing as an age-old conventional practice for commercial agriculture might be a more **entrenched in the minds** of Northern farmers because they do not

Access to Financing

Though training does help beneficiaries to change and adopt better practices, efforts should also be made, to improve their access to funds either through **cheaper credit** or their own savings (e.g. through VSLAs).

Facilitating financial support for firms should be **done with great caution**. Actors are inclined to take on debt when they are pressed with financing needs without thinking about the repayment obligations. They only realize the extent of the debt obligations when it is time for them to pay back

Market Linkages

There will always be some element of **speculative behavior** in farmers' decision to sell. Some farmers held on to produce in anticipation of future price rise only to struggle to find buyers to purchase at a lower price later in the year.

Quality

Outgrowers have a good sense of appreciation for quality because they easily articulated the issues that affect product quality during trainings. However, this is not enough. There should also be **incentives** from the market for the OG to deliver better quality products. Price incentives are critical for farmers to invest in post-harvest handling practices to ensure product quality.

Use of Threshers and Shellers

An OB increases the recovery rate of investment in the OGs if he or she has a sheller or a thresher to provide on-farm post-harvest services to the OGs. Thus, at harvest, the OBs that provide such services are able to recover their investment immediately and also make extra income because of the service fee. In addition, use of such equipment improves grain quality.

2. Signs of systems change

In addition to the increasing number of farmers applying technologies and the resulting increase in yield and gross margin, there is evidence of systems change in the functioning of the three commodity value chains, that can be attributed to ADVANCE's interventions.

First, there is increasing interest in the OB model and an increasing number of larger buyer firms are beginning to engage in these outgrower schemes. While the project had only one large buyer engaged actively and providing finance down the chain in 2014, this year, seven firms have provided $1 million worth of input credit to smallholders and buying back their produce.

Due to the project's OB model and support, being an OB has become more interesting for many micro and small enterprises. A survey of 132 OBs showed that their revenues increased by 13% in the last year. The project started in 2014 with 156 OBs and the number increased to 291 in in 2015 and 368 in 2016. ADVANCE has observed that there are many farmers and other value chain actors that are aspiring to become OBs. In 2016, the project had 125 of such farmers being mentored by 25 experienced OBs, while in 2015, 10 OBs mentored 78 of their new peers.

Inputs dealerships are also expanding, thus increasing the availability of improved inputs to smallholders, especially in remote areas. Yara, one of the largest input firms which sponsored all the fertilizer used at the project's demonstration sites, reported an increase of 5% of their revenues in 2016 compared with the 2015 revenue. Heritage Seeds, another sponsor reported significant increase in sales (from 69MT to 98MT) from 2015 to 2015. These are largely due to ADVANCE's business facilitation between the input firms and smallholders through the establishment of demonstration sites.

Another strategy used by the project to increase farmers' access to inputs is the 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.

Making profits through demonstrations

According to Heritage Seeds, one of the companies that support the setting up of demonstration sites, they sold 98MT of rice, maize and soya seed valued at $101,535 in 2016 compared with 69MT valued at $58,234 as a results of promotional activities through demonstrations and in community sales.

"Farmers keep calling us for seeds to buy after participating in community sales promotions and seeds provided to set up demonstration sites. I can confidently say that, these contributed immensely to the improvement in our sales"

Abdallah, from Heritage Seeds remarked.

Through the Village Savings and Loans Associations, smallholder farmers, especially women, have relatively improved access to finance. The 214 groups formed so far were able to mobilize savings of $102,130, which enabled their 4,890 members to purchase inputs and pay for other production expenses at the start of the crop season. ADVANCE will support the formation of 500 more groups in FY17. Despite the current unfavorable economic context, characterized by high interest rates, the financial institutions are increasing the amount of loans injected in the agriculture sector, as presented in section C.2. and this is encouraging.

Agrochemical spraying service provision has taken off as well. In 2016, 171 young men were trained as spraying service providers and provided services that generated a revenue of $23,517. This is a significant change from their previous unstable income source while enabling more farmers to access safer and more efficient 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, the latter now benefit from discounted fares.

ADVANCE has also observed an increasing number of contracts happening outside of ADVANCE's direct facilitation, between OBs and buyers. The OBs are applying the knowledge and experience gained from the project to enter into contracts with buyers on their own. Monitoring visits to several OBs revealed that some of them were on their own entering into contracts with buyers long after being introduced by the project. For instance, seven OBs reported eight contracts involving 650MT of maize, rice and soybean, valued at $198,741.

All these indicate the extent to which the agricultural production and value chain systems are changing on a wider scale as a result of the project's interventions. These are also early but significant signs of the sustainability of the project's impacts.

ANNEX I: INDICATOR TABLE

Indicator Source	Indicator Type	Indicator/Disaggregation	FY16 Target	FY16 Actuals	% FY16 Achievement	Comments
CI	OP1	Number of direct project beneficiaries	78,000	89,565	115%	The progress made so far was due to rural farmers receiving training programs such as GAPs, improved grain quality standards trainings, FaaBs, Numeracy, having access to loans from Outgrower business
		Male	42,900	48,517		
		Female	35,100	41,048		
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	836	185%	More organizations than expected had to be supported to reach the targeted number of individual beneficiaries as the ratio OB and FBO/smallholders is lower than planned
FTF	OP3	Number of individuals who have received USG supported short-term agricultural sector productivity or food security trainings	58,500	67,182	115%	Several large scale trainings were conducted to significantly increase farmers' capacity and improve their practices
		Male	32175	33,856		
		Female	26325	33,326		
FTF	OP4	Value of agricultural and rural loans	$1,000,000	$1,805,733.76	181%	This overachievement is mainly due to one important working capital loan
		Male		$1,545,245.67		
		Female		$27,742.17		
		Joint		$232,745.92		
FTF	OP5	Value of new private sector investment in agricultural sector or value chain (USD)	$800,000	$1,703,474.96	213%	This overachievement is due to the purchase of plant by a soy processor beneficiary
FTF	OP6	Number of MSME including farmers receiving USG assistance to access loans	39,000	42,848	108%	
FTF	OC1	Gross margins per hectare for selected crops US Dollar under marketing				

Indicator Source	Indicator Type	Indicator/Disaggregation	FY16 Target	FY16 Actuals	% FY16 Achievement	Comments
		arrangements fostered by the activity (USD/ha)				
		Maize	**423**	**1107.59**	**262%**	This overachievement is due to higher yields and selling price for maize, and higher yields for rice and soya
		Male	416	1209.38	291%	
		Female	435	844.36	194%	
		Rice	**644**	**876.87**	**136%**	
		Male	648	914.04	141%	
		Female	625	803.75	129%	
		Soy	**437**	**528.78**	**121%**	
		Male	474	622.99	131%	
		Female	383	450.76	118%	
FTF	OC2	Number of hectares under improved technologies or management practices as a result of USG assistance	81,090	48,274	60%	The assumption used to set targets for the number of hectares under land based technologies was an average of 1.5 ha by applying individual. However, actual average sizes of land planted being lower than 1 ha
FTF	OC3	Number of farmers and others who have applied new technologies or management practices as a result of USG assistance	52,500	52,577	100%	
		Male	31,500	29,287		
		Female	21,000	23,290		
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	366	108%	

Indicator Source	Indicator Type	Indicator/Disaggregation	FY16 Target	FY16 Actuals	% FY16 Achievement	Comments
20FTF	OC5	Value of incremental sales (collected at farm-level) attributed to FTF implementation	$22,080,000	$33,657,429	152%	Maize selling price and yield significantly increased. Rice farmers produced less than at baseline: 1.61 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 $282/MT. Soy selling price decreased from $414/MT to $336/MT and though yield increased, planted plot size decreased
		Maize	$8,720,000	$34,411,545	395%	
		Rice	$9,190,000	$(1,362,260)	-115%	
		Soy	$4,170,000	$608,145	15%	
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	50	123	246%	More firms have been supported, thus more firms have been surveyed and found more profitable
CI	OC8	Number of organizations/ enterprises identified as high potential for future awards	4	0	0	Assessment of those trained this FY16 will be conducted in FY17
CI	OP8	Number of organizations/ enterprises receiving capacity building support against key milestones	20	5	20%	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	3	0	0	Related activity will start in FY17
FTF	OP10	Number of Households benefiting directly from USG Assistance		83,399		New indicator. Targets will be proposed to USAID
FTF	OP13	Number of members of producer organizations and community based organizations receiving USG assistance	6,750	9,523	141%	More members from FBOs received trainings on FaaB and Numeracy

Indicator Source	Indicator Type	Indicator/Disaggregation	FY16 Target	FY16 Actuals	% FY16 Achievement	Comments
FTF	OP14	Number of MSMEs including farmers, receiving Business Development Services as result of USG assistance	31,200	50,163	161%	More farmers received training in Quality Standards, Farming as a Business FaaB and Numeracy
CI	OC9	Value chain actors accessing finance	225	226	100%	

ANNEX 2: SUCCESS STORIES

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FROM THE AMERICAN PEOPLE

CASE STUDY

Smallholder Farmers learn best practices on radio

Members of a listenership club in the Northern Region happily showing their USAID-supported radio

Photo credit: ADVANCE Project, Tamale Office

"We women cannot own radio sets but now we can meet as a group and listen to agricultural programs thanks to the radio sets that ADVANCE has given us. We are busy during the day so we cannot listen to the agricultural program. Now that we have the radio sets we can meet at a time that is convenient for us, listen, and share ideas on the topics that are discussed on the program." --Afia Afra, a smallholder farmer from Chiranda in Kintampo North District

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Through radio programming, USAID ADVANCE is introducing 25,000 smallholder farmers to innovative technologies and agricultural best practices, including row planting, appropriate seeding rate, proper use of fertilizer and other chemicals, the use of improved high-yield seeds, and inoculants and chemicals. These techniques improve soils and increase yields, and subsequently farmers' incomes. The project, led by ACDI/VOCA and supported by Technoserve, ACDEP, and PAB Consult, is a key part of the Feed the Future initiative in Ghana. It is on target to reach 113,000 maize, rice, and soybean smallholder farmers to achieve greater food security.

ADVANCE gathers its smallholder-farmer beneficiaries at demonstration sites to teach them about innovations and best practices. To complement what farmers see at the demonstration sites and to remind them of these best practices, USAID ADVANCE has partnered with radio stations to air agricultural programs at times that are convenient for farmers. The programs are presented by resource persons with expertise in the relevant field. Selected from the Ministry of Food and Agriculture, input companies, and other relevant institutions, the resource persons discuss appropriate land preparation methods, the importance of using certified seeds and where to obtain them, proper methods of applying fertilizer, farm management, the proper application of pesticides and disposal methods of the containers, and harvest and post-harvest technologies.

To encourage collective listening of the programs and the sharing of ideas and experiences, the project has organized the farmers into listenership clubs, of which 70 percent of members are women. The listenership clubs serve as a medium for technology transfer, feedback, and experience sharing. Within two years, 1,000 listenership clubs comprising 25,000 famers across northern Ghana have been formed and provided with radio sets by USAID ADVANCE. Members gather around their radio sets to listen to the programs, which are structured in a way that allows farmers to phone and share their experiences and also seek explanations on specific issues.

The radio programs do not only benefit the farmers; input dealers who also serve as resources persons are seeing the impact as well. The owner of Heritage Seeds Company, Zakaria Alhassan, is a project input dealer beneficiary who has increased sales and his clientele base due to the sharing of information of his distribution networks on radio.

SUCCESS STORY

Anti-bush fire campaign records success

An official of Ghana National Fire Service educating on the effects of bushfire

Photo credit: Adam Aronow, Peace Corps Volunteer with the ADVANCE project

"*I think all the measures we took to stop bushfires in the communities have helped a lot in reducing the incidences this year,"* said Camilo Ibkan, spokesperson for the Sentu Chief

Farmers in Northern Ghana dread the harmattan season not only because of the dryness and dust that come with it but also the bushfires that are usually experienced during the period. Every year, many farmers lose their produce before harvest due to fires. There are cases where farmers have lost almost 100% of their produce to the fires. Apart from the loss of produce, bushfires destroy soil nutrients, especially organic matter, disturbs the soil structure and reduces the soil's capacity to hold moisture for plant nourishment.

USAID ADVANCE is supporting the maize, rice and soybean value chains to achieve increased competitiveness. As part of this goal, the project is pursuing a climate smart agricultural strategy that focuses on promoting minimum soil disturbance and cover crop systems. Cover crop systems involves providing soil cover, protecting the soil surface while at the same time providing organic matter to the soil. However, bushfires pose a challenge to maintaining the cover crop systems. To help address this perennial problem, USAID/ADVANCE embarked on an aggressive anti-bushfire campaign in collaboration with the Environmental Protection Agency, National Disaster Management Organization and the Ghana National Fire Service (all government agencies), chiefs, opinion leaders, farmers, community members and the media, in Northern Ghana to draw public's attention to the devastating effect of bushfires on food production and how to prevent them. The campaign involved broadcasting radio messages in both English and local languages against setting bushfires, hanging banners inscribed with "Stop bushfires" at vantage places, sensitizing farmers on the prevention of bushfires during field days and community forums.

Four months into the campaign, the effort has yielded some results:

At Sentu and surrounding communities in the Lambussie Karni District of the Upper West Region, known for its frequent bushfires, recorded a 25 per cent decline in the 2015/16 harvesting season.

Before the campaign, between 65 to 70 percent of the community's vegetative cover was destroyed due to bushfires. The Chief and leaders of the Sentu community drew up several measures comprising punitive actions against offenders, setting up a monitoring fire vigilante group, engaging community members in discussions on how to stop bushfires among others.

In Loggu in the same region, a USAID ADVANCE outgrower business owner Mac Adams reported that 70 of his female smallholder farmers did not burn their field as their normal practice to clear it due to the campaign. "*For the first time in many years, about 210 acres of field were not burned. Thank you ADVANCE for your campaign. I hope gradually farmers will come to understand the effect of bushfires and stop them*", said Mac Adams.

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The Upper East Region recorded a 40 per cent decline in the two communities – Kapania and Gani - where the campaign took place. The Chief of Kapania, Ben Akanmoroba confirmed that after the launch, the community held a meeting to further inform the people of the need to prevent bush fires. As a result, no burning occurred there after the launch. *"See how the trees are looking green, we can get fruits from the trees and our animals do not go far to feed",* he said.

In Gani, Abannyogre, Ayamigu, a youth leader reported that an accidental bush fire was started, but the community members quickly came together to put it off preventing it from spreading. "*Previously, this would have been nobody's business. However, this thinking has changed because the people are seeing the benefits of no bush fire. Our animals get feed around here and this can be testified by their droppings littered all over. The droppings will be used as manure for our crops,"* said Abannyogre, Ayamigu, a youth leader at Gani community.

FIRST PERSON

Female Farmers Honored for Leadership Contributions to Rural Development

USAID/ADVANCE celebrated these women for their contribution to enhancing agriculture and rural development

Photo credit: Adam Aronow, Peace Corps Volunteer with the ADVANCE project

"I feel very honoured to be recognized for the little contributions in helping other smallholder women farmers to increase their yield and income. On behalf of Alice and Salamatu, we say a big 'thank you' to ADVANCE for this honor in front of all these people," says Yacintha Borgkur, leader, Sawla-Tuna-Kalba Women's Group, Upper West Region.

The USAID-funded Agricultural Development and Value Chain Enhancement (ADVANCE) project, led by ACDI/VOCA and supported by Technoserve, ACDEP, and Pab, is a key part of the Feed the Future initiative in Ghana. It is poised to reach 113,000 maize, rice, and soybean smallholder farmers to achieve greater food security. The project actively engages women and trains them to apply new technologies and/or new management practices and to access finances, information, communication technologies, and markets to increase yields and income.

The project makes conscious efforts to celebrate and showcase successful women farmers to motivate other women. To commemorate the 2015 U.N. International Day for Rural Women, the project honored three beneficiary women smallholder farmers from the Northern, Upper East, and Upper West Regions.

The women—Yacintha Borgkur, Salamatu Fusheini, and Alice Asekabta—were recognized for helping smallholder women farmers adopt productivity-enhancing technologies that enable them increase their yields and incomes significantly.

Yacintha Borgkur led 125 members of the Sawla-Tuna-Kalba Women's Group as they accessed agricultural inputs and technical training, leading to an increase in maize yields from 0.3 mt/acre to 1.5 mt/acre as well as the incomes of the women in the group. With project support and her facilitation, 30 women from the group were granted access to fertile farm lands close to their homes that enabled them work on the farms while taking care of their families more effectively.

Alice Asekabta mobilized all 93 members of her women's group to adopt productivity-enhancing technologies on their farms, resulting in an increase in maize yields from 0.4 mt/acre to 1.2 mt/acre. Through her initiative, women in the Buterisa community in the Upper East Region are now engaged in dry-season farming using abandoned community dams to bring additional income. Also, in consultation with the Buterisa Chief, she has mobilized the women to build a community-based health planning service (CHPS) compound that is almost complete.

Sixty-year-old Salamatu Fusheini, leader of the Magnsungsim Farmer group in the Northern Region, repaid her credit – an example being emulated by the 30 other group members. Her adoption of productivity-enhancing technologies led to an increase in maize yields from 0.4 mt/acre to 0.8 mt/acre.

USAID/ADVANCE presented each woman with a citation and a gift. These women's achievements affirm that "if women had the same access to productive resources as men, they could increase yields on their farms by 20-30 percent" (FAO, 2011). The project will continue to promote equal participation of women at all levels through equal access to resources, opportunities, and decision-making roles in line with its Gender Strategy.

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SUCCESS STORY

Facilitating Farmers' Access to Finance

Smallholder farmers meet on a share out day to receive their savings

Photo credit: Doris Owusu, ADVANCE Project, Tamale Office

"Savings on my own has always been difficult and I always thought I was too poor to save until now. Now I have enough money to buy inputs for this season," remarked Joseph, a smallholder farmer from Labaalo, Saboba District of the Northern Region.

The smallholder farmers who participate in the USAID ADVANCE project no longer have to struggle to find credit for their farming activities. They can now easily access money to buy inputs such as seed, fertilizer, weedicide, and farming implements for their farms. USAID ADVANCE has promoted Village Savings and Loan Associations (VSLAs) among its smallholder farmers. VSLAs allows farmers to save a minimum of GHC1.00 to a maximum of GHC5.00 per week and take loans, if needed, from the savings for their farming and other activities.

Since the introduction of the VSLAs in December 2015, 199 VSLAs made up of 4,566 members (1,302 males, 3,264 females) have been set up in Ghana's three northern regions. ADVANCE hired two organizations based in Tamale – Sung Foundation and YARO – who trained the groups' members to help them understand the purpose for the savings, elect leaders, and put in place terms that define how much each member is to save and the amount that will be given out as loans, interest rates, repayment schedules, as well as penalties for late payment and tardiness to meetings. ADVANCE presented the groups with a savings box, membership cards, and relevant materials to facilitate their operations.

Per the arrangements made with the farmers, the cycle of savings coincides with the beginning of the planting season. So when the farmers reach the end of the cycle to share out the savings, the project and the consultants bring along input dealers to the farmers' communities to allow the farmers buy the inputs they need.

Six months into the scheme, the project is recording some successes: In the 2016 production season, farmers purchased GHC135,255 worth of inputs thanks to their savings; something they had not done before. Another good thing about the VSLAs is that the outgrower business owners no longer have to borrow to support all the smallholder farmers with whom they are working.

Of the VSLA, smallholder farmer Maalafaa Dapillar, from Dafieri in the Upper West Region, says "it has given me hope. I got ploughing service and other inputs such as fertilizer and weedicide to farm. My husband was involved in a lorry accident in 2012, which affected his spinal cord and has since been indoors. The little income I generate from my small-scale brewing business is used to pay my children's school fees and the rest used to cater for the home. I did not have any hope to get money this year [2016] to farm but the little weekly contributions we have been making have helped me to afford one bag of fertilizer and pay for ploughing services to cultivate at least one acre of maize. Thank you immensely, ADVANCE, for this women's livelihood empowerment initiative."

USAID ADVANCE is working with its partner financial institutions to mop up the group savings and further invest to earn them interest instead of keeping the monies idle in the savings box.

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CASE STUDY

Connecting Farmers and Buyers to Build Relationships, Increase Trade

Soybean farmers and buyers in a break out session viewing prices of soybean

Photo credit: Lauren Bell, Peace Corps Volunteer with the ADVANCE Project

"The Pre-harvest event connects farmers to dealers of various farming equipment. At last year's event, I established a business relationship with a supplier of polypropylene storage sacks from southern Ghana. I now have a contract with the supplier who supplies me with the sacks without demanding upfront payment from me. Through the profit from the sales of the sacks, I purchased roofing materials to complete my building. The event connects farmers to dealers of various farming equipment," said Victoria Asaaro, farmer and leader of the Binaba Women's Group, Upper East Region

The USAID-funded Agricultural Development and Value Chain Enhancement (ADVANCE) project is led by ACDI/VOCA and supported by Technoserve, ACDEP, and Pab. The project is a key part of the Feed the Future initiative in Ghana and is poised to reach 113,000 maize, rice, and soybean smallholder farmers to achieve greater food security. For the past five years, USAID ADVANCE has supported the annual agribusiness forum usually held in October ahead of the harvest season. The Northern Ghana Pre-harvest Agribusiness Forum is intended to increase market access and trade among its targeted beneficiaries in southern and northern Ghana.

At the event, farmers and buyers shared experiences, cultivated opportunities for market linkages, and discussed issues related to demand, production, and pricing of specific commodities. They also made business deals. The forum featured an exhibition of vendors, displaying products such as mobile technology, storage bags, silos, combine harvesters, and other farm machinery. Businesses connected directly with their target audiences, and farmers learned about industry trends and technological advances.

Many times buyers and farmers have difficulties agreeing on issues such as expected volumes, quality, and price for commodities. The forum provided a platform where commodity-specific farmers and buyers discussed how to collaborate beyond sales and purchases to bridge expectations.

A team from the University of Development Studies evaluated the event and found the following:

- The event is a good learning opportunity at which value chain actors learn how to do business with each other and get exposed to new ideas, technology, and equipment

- Relationships begin, or get deepened (for existing business partners) at the event. Farmers connect with commodity buyers and service providers, including equipment and input dealers, financial institutions, telecommunications (for mobile money), and other value chain projects

Participation in the agribusiness forum has increased every year, from 260 attendees in 2011 to 960 in 2015. The event has a reputation for being a one-stop shop for business dealings between farmers and buyers for transactions on volumes, prices, contracts, and timing.
Proceeds from sponsorship represent a five-fold increase from the GHS21,500 ($5,555) realized in 2014 to GHS131,000 ($33,850) (including a private corporate sponsorship of 112,000 [$27,903]) in 2015, signalling increasing private sector interest in the marketing opportunities presented by the event.

The event is hosted by Ghana Grains Council, with support from USAID ADVANCE and the Agriculture Technology Transfer project.

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FIRST PERSON

USAID Promotes Record Keeping Among Farmers

During one of the Outgrower Business training sessions, participants (above) try their hands on manual record keeping using templates developed by USAID/ADVANCE

Photo credit: ADVANCE Project, Tamale Office

"I am applying all the business skills ADVANCE taught me. I keep records of my day-to-day business transactions; I know how much I paid as farm wages to all my farm hands during the farming season. I never knew farming is a business, but now I know my farm is my business and will adhere to all business principles," testifies Ibrahim Alhassan

Record keeping is key to profitability and sound farming operations yet very few farmers in Ghana seem to attach much importance to it. Farmers typically commit information about their farming activities to memory. They calculate profits from costs and incomes based on guessing rather than from properly kept records. These methods harbor myriad shortcomings.

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USAID/ADVANCE is working with its beneficiary farmers to keep accurate record of farm acreage, costs of inputs, labor, equipment cost, purchases, sales, profit, and loss to enable them to make better decisions regarding their farming operations.

In May 2013, USAID/ADVANCE trained 120 outgrower businesses (OBs) on manual record keeping of farm activities using project-developed templates. In June 2013, the project assigned 35 student interns from the University of Development Studies to provide further support to the OBs until they became conversant in the use of the templates. In March 2014, 51 OBs were selected by the project to receive laptop computers installed with a sales and service tracker software, through a grant, so that they can computerize their record keeping and have accurate data for decision making.

A year after the training and intervention, 44-year-old Ibrahim Alhassan, an OB beneficiary working with 203 smallholder farmers had this to say: *"I did not know that record-keeping skills [are] crucial to better manage the business — by measuring inputs and outputs and keeping costs down and earn higher incomes. Since I did not keep accurate records of my activities, it became difficult for me to calculate my profitability each farming season and also to expand the business operations. The trainings and the programs installed on the computer [have] enabled me to develop farm budget for farming activities, develop investment data on services rendered to my out growers during the cropping season. It has provided me with a sound basis for decision making in terms of crop selection, costs, and returns on input investments. In addition to this, the student Intern from the University for Development Studies assigned to me supported immensely with new office systems and procedures. I give all the thanks to USAID/ADVANCE for taking me to this level."*

Now Alhassan keeps records on field activities – plowing services, input credit distribution and use, asset inventory, and cash books. He is monitoring his income and expenditure, which helps him reduce the cost of production and increase income.

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SUCCESS STORY

Female Smallholder Farmer Succeeds Thanks to USAID/ADVANCE

Photo credit: ADVANCE Wa Office

Margaret in one of the plowed fields she supervised to be used as a demonstration plot

"*Because of the yield I made in 2014 with the support of USAID/ADVANCE, my late husband's family has allotted me five acres to add to the five acres I already have and they are willing to add more land if only I am willing to accept it*," testifies Margaret Tabla, a smallholder farmer in Bussie, in Ghana's Upper West Region.

Margaret Tabla, a 45-year-old widow and mother of six, is an outgrower farmer working with Outgrower Business [OB] Manager Augustine Sandow Ambotima. Margaret cultivates five acres of maize and three acres of soybeans. She started working with the first phase of ADVANCE project in 2012 and has since continued with the project's second phase.

Prior to joining ADVANCE, she recorded very low yields—an average of 0.1 MT/acre of soybean and 0.3 MT/acre of maize. The low yields were due to the poor agricultural practices she employed such as using farmers' saved seed, planting haphazardly, inappropriately applying fertilizer and other agro chemicals, among others. Margaret did not know about good agricultural practices.

With program support and training on good agricultural practices (row planting, use of certified seed, appropriate fertilizer, and the application of other chemicals); post-harvest handling; record keeping; numeracy; farming as a business; Sell More for More, and a women's leadership program, among others, Margaret has been empowered and now sees farming as a business. Her successes thanks to USAID/ADVANCE interventions including the following:

- In 2014, she increased her acreage from three to five acres of maize, which led to a corresponding increase in yield of 0.3 MT/acre to 1.04 MT/acre, earning her an income of GHC 5,200 ($1,330USD).
- Because of her adoption of good agricultural and other practices, Ghana's Ministry of Food and Agriculture deemed her the best female farmer in maize and soybean at the district level. As her award, she received a bicycle, wellington boots, a certificate of merit, and a machete. Margaret no longer has to walk long distances from her community to others to educate farmers on the need to adopt good agricultural and other practices in their farming activities; she covers the distances with her well-deserved bicycle.
- Margaret also serves as a resource on radio programs that educate farmers on good agricultural and other practices.

Margaret's achievements have been recognized by OB Manager Ambotima, who is mentoring her to become an Associate Nucleus Farmer and ultimately, a Nucleus Farmer. Augustine has entrusted Margaret with many responsibilities: She now supervises the formation and education of farmer groups, provides extension services to Ambotima's other outgrowers, supervises the activities of the OB's tractor operators as well as monitors and supervises the operations of the Village Savings and Loan scheme that includes 82 groups in 11 communities. The Village Savings and Loan concept allows smallholder farmers to save together and then take small loans from the savings, thereby providing simple savings and loan facilities to make up for the limited access to formal financial services in such communities.

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"*Margaret has worked so well and hard that now I assign her to represent me at meetings and perform a lot of my duties as a nucleus farmer for me*," says Ambotima. Margaret's good work has also been recognized in the Bussie community. The opinion leaders, including the community chief, have nominated her to run in the upcoming National District-Level Election as an Assemblywoman to represent them at the Daffiama-Issa-Bussie District Assembly, where she previously served as a unit committee member. They have confidence that she can champion their cause. She is also currently the spokesperson for the Queen Mother of Bussie.

"*I owe all these achievements and successes to USAID/ADVANCE. If not for ADVANCE I will not have reached this far. Thank you very much ADVANCE*, says Margaret.

CASE STUDY

Helping Farmers Overcome Climate Change Threat

A demonstration on the use of a ripper - one of the climate smart interventions that prevents soil depletion

Photo credit: ADVANCE Project, Tamale Office

"I had a message which said there was going to be a heavy rain, I therefore decided not to apply weedicides to the weeds on my farm that day because the rains would wash them off. Truly, it rained heavily that day, and I am so glad I didn't ignore the message." - Juliana Boakyewaa from Duayaw Nkwanta in the Brong Ahafo Region,

The USAID-funded Agricultural Development and Value Chain Enhancement (ADVANCE) project, implemented by ACDI/VOCA, is supporting the scaling up of the maize, rice and soybean value chains to achieve a greater degree of food security in northern and southern Ghana and benefiting 113,000 smallholder farmers. The project is achieving this through increased agricultural productivity, market access and trade and an enabling environment.

Climate change is one of the challenges to improving farmers' production. To address this, USAID is implementing some interventions to help farmers adjust to climate change and at the same time improve yields. The interventions include training on minimum tillage and cover crop techniques, promoting early maturing seed varieties, and subscription to daily weather forecast.

Considering the fragility of soils in Northern Ghana, the minimum tillage technique prevents depletion of the soil's fertility. USAID/ADVANCE acquired two rippers and two no-till planters as land preparation options for farmers. The project collaborated with John Deere/AFGRI to train operators and staff on the use of the equipment. Thirty demonstrations plots were set up to show 2,192 farmers the advantages of using a ripper in ploughing and a no-till planter that disturb the soil minimally as opposed to conventional ploughing and planting respectively.

In addition, six community-based cover crop demonstration plots were set up across the three northern regions with technical assistance of a cover crop expert to make 172 farmers aware of the benefits of using cover crops to accumulate organic matter.

Another project intervention is the use of early-maturing local maize varieties which are adaptable to lower rainfall and increased drought. The varieties include "Abontem" with 75-80 maturing days; "Omakwa", 90 days; and Pioneer 30Y87 matures within 95-100 days. Using these varieties reduces the risk of loss in case of reduced rainfall.

Further, with project support, almost 5,000 farmers are accessing daily weather forecast which is helping them determine the likelihood and intensity of rains in planning their farming activities. This means that the farmers are avoiding wasting agricultural inputs, and reducing their risk due to erratic and/or late rain fall.

The USAID-funded ADVANCE and Agriculture Technology Transfer (ATT) Projects have collaborated to set up four training centres to help farmers learn more about the various climate-smart farming practices and try out appropriate equipment.

By project close in 2018, 20,690 farmers will be reached with climate-smart agriculture. The project is monitoring how farmers' increased adoption of its practices improve yields and bring about economic benefits.

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FIRST PERSON

Improved agricultural practices increase yield

Sayibu is happy with the yield he got from an acre maize farm. Behind him are the bagged maize.

Photo credit: Adam Aronow, Peace Corps volunteer with the ADVANCE Project

"The other farmers are impressed with the yield I got and are committed to do same on their farm in the upcoming planting season. I am going to invest more money in buying seed, fertilizer and other agro chemicals for a two acre farm I intend to do in the next season. Investing in technology is very good. We cannot overlook it," says Sayibu Abdul Rahman

The skills and basic knowledge acquired by farmers, through training on good agricultural practices has significantly improved their yields and their income.

Sayibu Abdul Rahman is a farmer in Dindo, a rural community in the Kumbungu District of the Northern Region. He had been cultivating an acre and an acre and half of maize and rice respectively for the past seven years, but lacked the skills and knowledge to increase his yields and get a sustainable income to support his family. Sayibu, like many smallholder farmers, employed traditional methods of farming: using seed saved the previous year from his farm without proper spacing. "*I broadcasted* [throwing the seed onto the field] *the maize before the tractor will plough the field and that buried the seeds. Sometimes I dibbled (poked holes) and put in the seed by hand – the spacing was not even. In some part of the field, the plants will be crowded. I did not know how to apply fertilizer properly either*," said Sayibu.

The USAID Ghana Agricultural Development and Value Chain Enhancement (ADVANCE) Project, implemented by ACDI/VOCA, with support from Technoserve, ACDEP and PAB Consult, trains farmers and farmer-based organizations (FBOs), to increase the scale and efficiency of their farms with improved production and post-harvest handling practices. This ranges from using improved seed varieties and other inputs, to mechanized shelling and threshing, storage, and facilitating market access.

In 2015, Sayibu was one of 11,653 smallholder farmers USAID ADVANCE, in partnership with the Ministry of Food and Agriculture, trained on good agricultural practices and post-harvest handling using demonstration plots. The farmers learned row planting and spacing, using improved seeds, proper application of fertilizer and other chemicals. They also learned about shelling harvested maize on a tarpaulin to reduce contamination and losses, as well as basic business practices like negotiating prices for their produce and keeping proper records of their farming activities. "*The training on good agricultural practices and post-harvest handling has helped me know the importance to plant my maize in rows for easy weeding, pest control, fertilizer application and harvesting*," remarked Sayibu.

Applying the good agricultural practices learned on a one acre maize farm more than doubled Sayibu's yield from 0.6 mt to 1.4 mt. Sayibu is convinced that applying good agricultural practices leads to increase in yield. He intends to invest in seed, fertilizer and agro chemicals for increased yield.

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SUCCESS STORY

Mary Anabila – An epitome of Women Empowerment

Mary Anabila sitting on her tractor.

Photo credit: ADVANCE Project, Bolga office

In Northern Ghana, farming equipment such as power tillers, rotary weeders, donkey carts, reapers, tractors and warehouses are usually owned by men. Even the matching grant scheme run by USAID ADVANCE to enable beneficiaries purchase such farming equipment are more easily accessed by men. So when in July 2015, 58 year old Mary Anabila, project beneficiary aggregator raised an amount of GHC40,000 (US$11,351.77) as 30 per cent leverage to acquire a tractor, the project saw it as a great achievement and a positive step towards women empowerment.

USAID ADVANCE, implemented by ACDI/VOCA together with Technoserve, ACDEP and PAB Consult, among other things supports beneficiaries with matching grants to purchase various farm equipment including tractors, power tillers, harvesters, threshers, rice mills, planters, dibblers, donkey carts among other small equipment (tarpaulins, moisture meters and weighing scales). Beneficiaries pay 30 per cent of the cost of the equipment whereas USAID ADVANCE pays the remaining 70 per cent.

Usually, grantees either borrow or access credit from financial institutions to pay their part of the leverage. In the case of Mary Anabila, she paid the leverage from savings she had made from her aggregation business.

"I decided to get a tractor to help provide timely ploughing for the smallholder farmers from whom I buy maize. When they get their fields ploughed early enough they will be able to plant at the right time so that I can buy from them at the right time. The timely ploughing service can even let them increase their acreage so that I can get more grains to buy." says Mary.

Mary indicated that apart from using the tractor to provide timely ploughing services for her smallholder farmers, the tractor helps convey farmers produce from the farm to either the warehouse for storage or market for sale. She charges for that service which is giving her extra income. "*All I need to do is to fit a trailer to the tractor and it is ready to carry produce to the warehouse and other places for those who hire it,*" says Mary.

Mary works with 430 (258 females and 172 males) smallholder farmers from whom she buys maize. She started working with USAID ADVANCE in 2011 during the project's first phase. Project interventions she has benefitted from include an 80 mt warehouse, a sheller, a tarpaulin, a moisture meter and a weighing scale. All these equipment are helping her maintain product quality for her end market. In addition to the 80 Mt wareshouse, she has two other improvised storage facilities to meet the storage needs of surrounding communities.

As part of the project's gender strategy, USAID ADVANCE is mainstreaming gender equity at all levels of the project. It continues to sensitize and pursue equitable access to resources by all genders especially women smallholder farmers to increase productivity, income and wellbeing of their families and Mary is an example of this effort.

"ADVANCE has opened my eyes to become more business minded. Now I know how to manage my business better. I am a widow but I can afford to buy anything I want to support my family. I am even taking care of the needs of other family members. I advise all women to be hardworking and honest in whatever they do so that they will become great in future," remarks Mary.

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FIRST PERSON

Setting an example for Ghanaian youth to enter Agriculture – Prince Danso

Prince at one of USAID ADVANCE Supported agricultural event

Photo credit: Adam Aronow, Peace Corp volunteer with ADVANCE Project

Despite numerous strategies adopted by the Ghanaian government and other agricultural stakeholders to attract the youth into agriculture, most young people in Ghana shy away from farming with the perception that farming belongs to the elderly. Therefore when USAID ADVANCE discovered 27 year old Prince Owusu Danso engaged in commercial farming, the project took a special interest to support him.

The USAID ADVANCE project led by ACDI/VOCA and supported by Technoserve, ACDEP and Pab Consult, is a key part of the Feed the Future initiative in Ghana. It is targeted to reach 113,000 maize, rice and soybean smallholder farmers to achieve greater food security. The project builds the capacity of commercial farmers through an outgrower business model it has developed to enable them better manage and expand business service operations that profitably assist smallholder farmers.

Prince Owusu Danso is the youngest nucleus farmer working with the USAID ADVANCE Project. After completing his technical education in 2007, Prince started his own farm at Ejura in the Ashanti Region. He cultivated an acre maize farm with seeds and fertilizer bought on credit. From that one acre, he harvested 0.8 Mt. Happy with that yield, Prince increased his acreage to two the following year.

"I recently completed a 16-bedroom house at Ejura and am taking care of the education of four siblings. I have become a role model for the young men in Ejura who approach me to learn from my experience. I advise the youth that farming is good and rewarding, especially if one applies the best agricultural practices, he will get good yields. Farming is not only for old people, young people like you can also go into it," said Prince.

After eight years of hard work, Prince has a 45-acre maize farm and works with 239 smallholder farmers who he provides fertilizer and weedicide on credit. Though Prince was making some improvement in his farming business, he acknowledges that coming into contact with USAID ADVANCE in 2015, has taken his business to the next level. The project has trained him and his smallholder farmers on best agronomic practices including row planting, use of certified seeds, and proper application of fertilizer as well as other agro chemicals. Through the training, his smallholder farmers are realizing good yields which enable them repay him for the services he provides them. The project also assisted him to prepare a business plan and linked him to Esoko Ltd and Ignitia Ghana Ltd which to receive weekly SMS on agronomic tips, market prices of commodities and weather information respectively to better plan and organize his planting and schedule other agronomic practices. The project connected him to two buyers – Spice Farms and Akate Farms- both poultry farms. Last year, he supplied 10 Mt of maize valued at GHC135,000 (US$3,750) to Spice Farms. Arrangements have been made to supply Akate Farms this year.

USAID ADVANCE has also supported him with a Samsung Galaxy Tab and a Pico projector which he uses to profile his farmers, teach them good agronomic practices and keep records. He counts on us for more knowledge and innovations.

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SUCCESS STORY

Private Sector Firms Support Farmers' Technology Adoption

Photo credit: Godfred Nyamekye, ADVANCE II, Tamale Office

An Agricultural Extension Agent of the Ministry of Food and Agriculture educating farmers on good agricultural practices at Gbulung, Northern Region

"*This year, the field activities have been very good promotion for sales especially in the Upper East Region. Sales are likely to be more than doubled due to farmers' exposure through the demonstrations, input promotions, farmers' sales days and radio sales promotions,*" said Roland Quaye, Wienco.

Year after year, Northern Ghana farmers continue to reuse their seeds, even with decreasing results. Improved varieties of seeds have become available, allowing farmers to have as much as a four-fold increase in yield. However, access to these certified or improved seeds, fertilizer and pesticides remains the largest constraint for farmers to improve their yields and increase their profits.

To increase the supply of improved seed – especially in Northern Ghana - USAID's Agricultural Development and Value Chain Enhancement project (ADVANCE) partnered with 18 private sectors firms and Ghana's Ministry of Food and Agriculture and provided training in good agricultural practices to 13,609 farmers (7,285 males and 6,294 females) through 180 demonstration sites. The private sector firms including Wienco, Dizengoff WA, Chemico, Pioneer Hi-Bred, Yara Ghana Ltd., Heritage Seeds, Lexborg Ltd., Meridian Agric Services, Simple Prince Company Ltd., Antika Enterprise and N2 Africa/SARI contributed seed, fertilizer, herbicides and inoculants. By contributing these inputs, the private sector firms promoted their products to the farmers, increased sales and received feedback for improved product design and distribution. Making available the inputs to farmers led to the sale of 172.8 mt of seed, 31,714 bags of fertilizer and 21,124 litres of other agro chemicals valued at GHC₵4,670,787.00.

To ensure that their outgrowers learn and adopt appropriate technologies and/or management practices, 80 nucleus farmers joined in the private sector support. The farmers provided land, land preparation services and contributed herbicides and weedicides to manage the demonstration plots.

Through this private sector support, yields obtained on the demonstration sites for maize, rice and soybean were 2.9 mt/ha, 4.4 mt/ha and 2.9 mt/ha respectively far above the latest national average yield of 1.72 mt/ha, 2.64 mt/ha and 1.64/ha respectively according to MoFA SRID.

With this kind of knowledge acquired at the demo sites during the training and field days, should farmers adopt the new technologies and management practices, they have the potential to increase their yields from an average of 1.5 to 2.6 mt/ha, 2.5 to 4.2 mt/ha and 0.98 to 2.0 mt/ha for maize, rice and soybean respectively, and subsequently their incomes. The collaboration has also created awareness and demand for seed, fertilizer, herbicides and inoculants among smallholder farmers.

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SUCCESS STORY

ADVANCE-Supported Radio Stations Disseminate Agricultural Information

Through radio, USAID/ADVANCE reaches farmers with relevant and timely information on good agronomic practices and other agricultural-related issues. Photo Credit: USAID ADVANCE Tamale Office.

" I always listen to the farmer's program on North Star Radio every Saturday evening from 7.00 – 8.00 pm each week. The program showed me how to protect my crops from pest's infestation and how to apply weedicides correctly and in the right quantities. This year I had 12 bags on my 1-acre maize farm after doing everything right as taught by the MoFA Officer on North Star," says Sulemana Zakaria, a maize farmer at Saanvuli in the Tolon District of the Northern Region

The USAID-funded Agricultural Development and Value Chain Enhancement (ADVANCE) project is led by ACDI/VOCA and supported by Technoserve, ACDEP, and Pab. The project is a key part of the Feed the Future initiative in Ghana and is poised to reach 113,000 maize, rice, and soybean smallholder farmers to achieve greater food security. USAID/ADVANCE partners with rural radio stations to equip its targeted farmers with relevant and timely information on good agronomic practices, market prices, and other agricultural-related issues.

It is sometimes difficult for radio stations to provide regular and solid agricultural programming due to challenges in attracting sponsorship for such programs. The USAID/ADVANCE project, through small grants for the effective dissemination of information, is supporting 25 radio stations with a combined listenership of over 200,000. Since the project wants the radio stations to continue agricultural programming even after it ends, it has equipped them with technical knowledge and the ability to use and expand this knowledge. This effort has led to a sponsorship from U.S.-based technology company, ZenoRadio.

ZenoRadio is supporting four radio stations – Radio Builsa, Radio Justice, ADRS FM, and W93.5 FM in the Northern, Upper West, Upper East, and Brong Ahafo regions – to deliver agricultural airtime. In addition, ZenoRadio is providing the stations with free streaming services through their ZenoLive platform. ZenoLive allows radio stations to stream broadcasts live, store streamed content for future access, and utilize a dashboard to manage phone-ins from listeners tuning in from the Internet or a U.S. telephone number at no cost.

The USAID/ADVANCE project and ZenoRadio are looking to scale the initiative and create deeper partnerships with rural radio stations to ensure a wide dissemination of information to smallholder farmers across Ghana.

To allow for more information sharing on best agronomic practices, project beneficiary farmers in northern Ghana have formed 841 listenership groups (90 percent of participants are women) with project facilitation. To allow beneficiaries to listen to the agricultural programs, USAID/ADVANCE has provided the groups with 1,000 radio sets.

By 2018 when the project ends, USAID/ADVANCE will reach over 300,000 listeners with timely agricultural information through radio broadcasts in the Northern, Upper East, Upper West, and Brong Ahafo regions.

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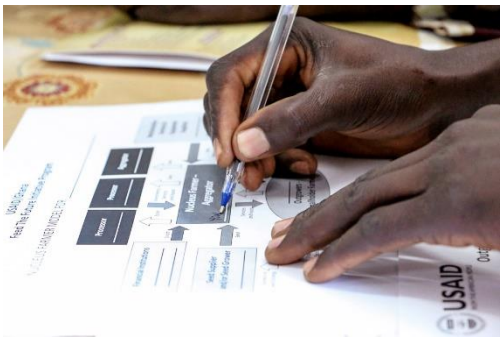
SUCCESS STORY

Input Credit Model Helps Increase Yield



A nucleus farmer studying the Nucleus Farmer Model that helps them provide agricultural services to smallholder farmers

Photo credit: Lauren Bell, Peace Volunteer assigned to ADVANCE Project, Tamale

"All the smallholder farmers repaid their credit in full. That helped me greatly to repay the credit I accessed from Sinapi Aba Savings and Loans. I wish to extend this to many more of my smallholder farmers in other communities and I encourage other nucleus farmers to adopt this model. Thanks to USAID/ADVANCE for introducing the input credit model," said Alhaji Hussein Muhib, Outgrower Business Manager.

The USAID-funded Agricultural Development and Value Chain Enhancement (ADVANCE) project implemented by ACDI/VOCA and a consortium of partners – TechnoServe, Pab Consult and Association of Church Development Projects (ACDEP). The project is increasing agricultural productivity, market access and trade, and creating an enabling environment of the maize, rice and soybean value chains in northern and southern Ghana and benefiting 113,000 smallholders.

Improving yield requires that farmers have access to quality inputs such as improved seeds, fertilizer and other agro-chemicals in addition to adopting good agronomic practices. Limited access to quality agricultural inputs poses significant challenges to smallholder farmers in northern and southern Ghana who lack adequate capital to finance their production activities, resulting in low crop yields. To tackle this challenge, USAID/ADVANCE developed an input credit model to help large commercial farmers or Outgrower Business owners to provide needed agricultural inputs to smallholder farmers to improve yield.

The model starts with the project facilitating market linkages between the Outgrower Business (OB) owners and buyers. With his access to market, the OB owner finds it convenient to invest in his smallholder farmers from whom he can get the quantity and quality of produce needed for the end buyer. The investment involves providing his smallholder farmers on credit ploughing services, seed and fertilizer who repay him in cash or with produce at harvest. In case the OB owner requires credit for that purpose, the project facilitates the process by working with him to get the necessary documentation to access credit.

Through the model, OB owner, Alhaji Hussein Muhib, supported 108 of his smallholder farmers (75 males and 33 females) with soybean seed and fertilizer valued at GH₵20,000 (approx. USD5,405) accessed from Sinapi Aba Savings and Loans - to cultivate 43.2 hectares of soybean. With the adoption of good agronomic practices, the farmers increased their yield from an average of 0.5 mt/ha to 2.0 mt/ha representing 400% increase and higher than the national average of 1.3 mt/ha. "*Previously I used to get 0.5 mt/ha on my soybean farm. But as Alhaji supported me with seed and fertilizer, and trained me on good agronomic practices, my yield increased to 2.0 mt. With the current price at GH₵150.00 (approx. USD40) per 0.1mt, I am worth GH₵2,700 (USD730) after repaying my input credit of GH₵300 (approx. USD81). I have been farming for the past five years, I never knew there was fertilizer for soybean that could give high yields. My children will surely get new school uniforms*," said Sanatu Abdulai, farmer, Shellilanyili, Northern Region.

In the end, the OB owner satisfies the buyer by meeting the demand, with the quantity and quality produce from his smallholder farmers through his input investment in them.

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SUCCESS STORY

USAID ADVANCE Scales Up Mobile Financial Services for Farmers

Smallholder farmers at one of the mobile money training workshops

Photo credit: ADVANCE Project, Tamale Office

"Mobile money has helped me have access to my accounts. I can easily record the value of inputs sold in the communities. With my five agents, I serve more than 3,500 smallholder farmers in Mion," said Mohammed M. Muntaka, input dealer, Northern Region.

USAID ADVANCE is supporting the maize, rice, and soybean value chains in northern Ghana to achieve food security. As part of its work, the project encourages savings among its smallholder farmers while ensuring that easy payment options are accessible to them, especially in remote areas where there's no ready access to a bank.

Realizing that most of the farmers with whom the project works own mobile phones, the project introduced them to mobile money technology. Prior to mobile money technology, farmers travelled long distances to transact business and carried cash with its attendant risks, which was tedious and tiresome. Collaborating with service providers MTN, TiGO, and Fidelity Bank, ADVANCE subscribed the farmers to a service that enables them have a mobile money virtual wallet on their personal phones. The project explained to them the benefit of the service in enhancing their farming activities.

Outgrower business owners (OBs) who work with these farmers started to use the service after seeing its benefits first-hand. Within a year, 3,274 smallholder farmers and 65 outgrower business owners have begun using the service for various financial transactions. The OBs promptly pay for produce aggregated from their smallholders and inputs bought from input dealers through their mobile phones. Receiving their money on their mobile phone is saving the farmers from the temptation of spending it unwisely, which they occasionally did when they had physical cash. Some farmers even find the service serving as "savings account."

Less than three years since its introduction to project beneficiaries, the mobile money service has proven to be cost-effective, convenient, and time-saving. The cost charged to send money is insignificant compared to travel time and the expenses involved in transacting business in a more traditional manner. Thanks to the technology, farmers and outgrowers send and receive money on their phones without the fear of theft.

Mahamud Mohammed Muntaka of Timtooni Agro Supplies in the Northern Region is an input dealer and registered merchant who benefits from the mobile money technology. With five of his input agents also registered as merchants in five communities in Mion, Muntaka finds receiving daily sales from them via the service easy. This, according to him, has improved farmers' access to inputs in the communities and reduced his transactional costs.

The USAID-funded ADVANCE project is implemented by ACDI/VOCA and supported by partners TechnoServe, ACDEP, and Pab Consult. The project will continue to scale up the mobile money technology to allow more value chain actors in northern Ghana to make payments spending less time and resources.

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CASE STUDY

Scaling up Private-Sector Investment in Maize, Rice and Soybean Value Chains

Farmers applying Yara Actyva fertilizer on their maize field

Photo credit: ADVANCE Project, Tamale Office

"USAID/ ADVANCE has taught us how to get quality fertilizer for our farms and also stop broadcasting seed which affect yields. I thank USAID/ADVANCE and Yara for introducing the fertilizer which will help us increase our yield, said Tuohatu Abubakari, maize farmer, Tibung.

The USAID-funded Agricultural Development and Value Chain Enhancement (ADVANCE) project, implemented by ACDI/VOCA, is supporting the scaling up of private-sector investment and involvement in the maize, rice and soybean value chains to achieve a greater degree of food security in Northern Ghana. The project is working with and encouraging private-sector players to directly engage maize, rice and soybean value chain actors.

Access to input such as seed and fertilizer is a significant challenge facing farmers in Northern Ghana. For this reason, USAID/ ADVANCE is making efforts to ensure that such input are brought closer to its targeted 113,000 farmers to enable them access and apply the inputs appropriately to improve yields.

USAID/ADVANCE partnered with a leading fertilizer supplier, Yara Ltd., and trained 13,000 farmers in Northern Ghana on proper fertilizer application and other good agronomic practices. With the use of demonstration plots, USAID/ADVANCE and Yara taught farmers the right protocol for (YaraMila Actyva) fertilizer application and made available the fertilizer to ensure that with the assistance of Ministry of Food and Agriculture (MoFA) extension officers, farmers will adopt the protocols and get the best from the fertilizers.

Two weeks after setting up the demonstration plots, officials of Yara and USAID/ADVANCE paid a visit to the farmers to find out the progress of their farms. At Ticheli, Surugu and Tibung, in the Northern Region, farmers were applying the second phase of the fertilizer to their maize farm, which according to them, "has helped them improve their maize quality."

"*Previously, we used other fertilizer that did not ensure high yield so most of us were discouraged from cultivating the following year. The introduction of the YaraMila Actyva fertilizer has helped improve the maize quality. I look forward to harvesting good yields. I encourage other farmers to use the fertilizer so they can get more yields to improve their livelihood*," said Adamu Abdul Rahman, a farmer, Ticheli.

According to Yara Ltd.'s Commercial Manager, Sergio Godoy, the partnership with USAID/ADVANCE is to help smallholder farmers increase yields. "Famers have concerns that fall within the remit of what we do and as good corporate citizens, not only do we feel obliged to help their cause but we are also hopeful that through initiative like this, we can change the fortunes of the rural farmers," says Godoy.

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SUCCESS STORY

Scaling up Rice Production – The Akpabe FBO Story

Some members of the FBO trans-planting rice. The proximity of their farms to the Volta Lake is advantageous to all-year rice cultivation.

Photo credit: Lauren Bell, Peace Corp Volunteer with the ADVANCE Project

"Previously rice were harvested and packed in the community without buyers and the few buyers offer very low prices. The market linkage was a big relief for us because they were buying the paddy rice in the community at a price twice the previous price. It has really been helpful" Rose Biuw, member of the Akpabe FBO.

The Akpabe farmer-based organization (FBO) is made up of 400 farmers cultivating an acre each of rice near Volta Lake in the Northern Region. The group's proximity to the lake is quite advantageous, allowing all-year rice cultivation.

However, since its formation about 10 years ago, the group has faced a series of challenges: the group was not well organized, they lacked knowledge in good agricultural practices, farming was virtually done manually and they had no targeted market.

USAID/ADVANCE builds the capacity of smallholder farmers and farmer-based organizations such as Akpabe FBO to increase the scale and efficiency of their farm business with improved production and post-harvest handling practices. The project facilitates farmers' access to improved seed varieties and quality input, mechanization services, extension services, and end markets.

USAID/ADVANCE trained the Akpabe group members on good agricultural practices such as use of improved seed, right row planting and spacing, appropriate application of fertilizer and other chemicals, post-harvest handling practices, and how to negotiate for better prices for their produce. The project supported them with a matching grant to purchase tarpaulins under the project's small equipment grant. The tarpaulin serves as a threshing floor that prevents grain from coming into contact with the ground, stones, and other foreign material.

In addition, the project, in collaboration with J. K. Technology, a private sector vendor, introduced and demonstrated to the group the use of a one-operator power rice reaper. The reaper takes less than two hours to harvest an acre field, which usually takes a week when done manually. The group is making arrangements to take advantage of the project's matching grant to purchase the equipment. Above all, the project linked them to buyers in southern Ghana.

With their adoption to the good agricultural practices learned from USAID/ADVANCE, the group increased their yield from 1.2 mt to 1.9 mt. In the 2014 harvesting season, the group sold a total of 107.8 mt of paddy rice valued at GH₵76,400. Previously, the average quantity they could sell was 74 mt valued at GH₵4,810.

Now there is an increased demand for the group's paddy rice. Members have increased their acreage to 1.5 acres. Two hundred new members have also joined the group.

Over the next five years, USAID/ADVANCE will reach 113,000 maize, rice, and soybean farmers in the Northern, Upper East, Upper West, Ashanti, and Brong Ahafo Regions of Ghana through public and private sector partners.

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SUCCESS STORY

Internship Program Provides University Students Valuable Work Experience

Some interns during one of their trainings

Photo credit: Adam Aronow Peace Corps Volunteer with the ADVANCE Project, Tamale

"*I got the chance to gain real-world experience of the theoretical training I have had over the past years at the university. For example, as an agribusiness student, I learned income statements in school through imaginary figures and using templates. But during the internship with the ADVANCE project I had the opportunity of collecting and inputting real figures in preparing income statements for the nucleus farmers. I now have a professional outlook of myself and therefore I approach issues with a business focus. I am very grateful to the project,*" stated Ebenezer Ofori, a final year UDS agribusiness student.

Recently, it has been tough finding a job, especially when the job seeker has little real-world experience. Starting one's career with an internship can be the route to job experience.

The ACDI/VOCA-implemented USAID/ADVANCE project helps students at the University of Development Studies (UDS) in northern and southern Ghana gain experience through internships. The project provides work-study opportunities for students to apply their academic knowledge, which helps them enhance and/or develop new skills.

For the past five years, more than 100 students from UDS campuses in the three northern regions have interned with the project. The interns engaged in various assignments ranging from data collection and entry to assisting project beneficiaries with their farming operations.

Of his internship, 22-year-old Twum Barima says, "*The most beneficial part of my internship was being able to apply what I have learnt in the classroom to the actual field work and having a positive impact on people's lives. I am now convinced that I chose the right career path in the field of development work. I have mastered my experience in administrative procedures and computer skills, especially Microsoft Excel during data transcription into the computer. It was great to learn how people function within the organization and how they are well-knitted as a team to ensure efficiency. Above all, I have cultivated meaningful relationships with many project stakeholders and employees in the USAID/ADVANCE project.*" All interns engaged to date by the project have similar stories about the valuable, hands-on experiences they gained during their internships.

At the start of their internship, the project provides an orientation for the student-interns and trains them on the various tasks to be assigned. Usually, interns assigned to support nucleus farmers are trained in record keeping, tracking sales and farm budget, inventory management, input investment, and production records. They spend an average of six weeks with each nucleus farmer.

Not only do the interns gain valuable work experience, they also receive monthly allowances from USAID/ADVANCE to meet some financial obligations. "*In addition to gaining knowledge in the procedures of determining crop yield, gross margin, and profiling of farmers, the monthly allowances I earned helped me a lot to meet my basic needs as a young woman*," said Rafiatu Abdul-Rahman.

"*USAID/ADVANCE has the capacity to meet both human and financial needs of the individual and the country as a whole*," the students remarked during their review of the internship.

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SUCCESS STORY

Spray Service Providers show results

Trained Sprayer using weedicide with all safety precautions in place. Photo Credit: USAID ADVANCE Tamale office

"I made GHC 1,400 from spraying farmers' field and have saved it with GN Bank towards next year's farming activities," said Ali Yahaya, spray service provider from Bulenga, Upper West Region.

As part of the project's environmental strategy, USAID ADVANCE is working to maximize safe application of pesticides and minimize the number of untrained people exposed to pesticides.

Therefore, in March 2016, USAID ADVANCE designed a training program for the proper application of agro-chemicals on farms. The application of insecticides and weedicides has three main challenges: safety, awareness, and skill. Through the training, USAID ADVANCE has certified and equipped 187 members of various communities in the Northern, Upper East, Upper West, Brong-Ahafo and Ashanti Regions to provide commercial spray services to farmers in their communities.

The spray service providers, who operate in groups of approximately four persons, have been taught how to protect themselves and others by applying safety measures, including the use of proper personal protective equipment and disposal of empty chemical containers in an environmental conscious way. In addition, they are able to spread their knowledge of the benefits, purpose, and proper identification of legal and authorized chemicals and are providing the community with skilled sprayers. Often the smallholder farmers cannot read the directions or safety precautions on pesticide labels. The sprayers know how to identify the amounts, precautions, and method of application of each chemical they spray.

The training is benefiting members of communities with access to a USAID ADVANCE trained Sprayer. In a recent assessment of the records of 131 out of the 187 sprayers, over 6,500 acres have been sprayed for over 2,400 individual farmers.

In addition to the community's benefit of higher yields due to less competition from weeds and infestation of pests, the sprayers themselves have all been able to build additional business to complement their farm income. Records of the 131 sprayers whose data was recently compiled earned a total amount of GHC 58,037. This averages a wage of GHC 443.00 per season, which far exceeds the normal income of any smallholder farmer during the off season in rural northern Ghana.

The sprayers interviewed seemed pleased with the training and the results of their new small business. "The quality of my spraying has improved a lot after the training. People I sprayed for came back to tell me their farms are so clean this year and they won't need a second application of herbicides to control weeds," said Takaanuba Wahabu of Tuna Community in the Upper West Region.

Feedback was also provided to enhance future trainings and address some of the issues the sprayers once faced back in the community.

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SUCCESS STORY

SmartCard Improves Data, Informs Project

The women's group of Diare, in the Northern Region, showing off their new SmartCards printed by ADVANCE. Photo credit: USAID ADVANCE Tamale Office

" The best, the easiest and the smartest way of interacting with your project beneficiaries and knowing how they are performing in real time as you implement project strategies over the years," says Samuel Akoi-Wontumi, USAID ADVANCE M&E Coordinator

USAID funded Agricultural Development and Value Chain Enhancement (ADVANCE) project leverages agricultural investment to scale up the maize, rice and soybean value chains. The project is targeting 113,000 smallholder farmers while at the same time reaching them with training and other benefits.

In Ghana, low literacy levels make it difficult to use normal attendance rosters to accurately count participants during training. Also, continuous tracking is complicated by the fact that most people use their family name first when registering for a training, and often omit their given name. These factors left our Monitoring & Evaluation (M&E) unit to come up with an effective and efficient way to accurately count the number of beneficiaries. To ensure optimal data capture, USAID ADVANCE introduced and distributed an identification card equipped with SmartCard technology to each project participant.

Each project participant's picture and identification number are printed on the SmartCard while the chip within the card holds essential and sometimes private information. The chip data contains the participant's age, gender, phone number, farm size, yield and sales history, number of dependents, number of trainings attended, and other information that is essential not just for monitoring but to also evaluate the success of the program and its future direction.

The results are positive: In 2016 alone, thanks to the SmartCards, M&E has tracked 62,000 people who have attended trainings. Where once a simple head count would inflate training numbers, M&E now knows the exact number of beneficiaries attending training and receiving benefits more than once. With 70,000 SmartCards in circulation, M&E is able to identify farmers who absent themselves from trainings and follow up.

With the SmartCard, capturing and analyzing data is faster and easier eliminating the risk of double counting. High quality of data is also assured with less effort and time in addition to easy identification of beneficiaries who are assigned unique ID numbers.

"As a nucleus farmer, the SmarCard helps me in providing services to my outgrowers. For instance if I hire a tractor operator to go and plough for my outgrowers, the operator is easily able to identify those he has to plough for as they present their ID cards. This ensures that my outgrowers are served first before other farmers. My women outgrowers really feel very proud when they put on the ID cards. Well done ADVANCE for that innovation, said Ernest Asoi, leader of the Kukunasor Group, Chereponi, Northern Region.

Although the SmartCard was created primarily for project use, it has additional benefits. It provides a form of identification to those without one, as is often the case in rural Ghana. The cards also bring beneficiaries a feeling of community and a sense of belonging within the project. They are no longer a lone, unassisted farmer. "The SmartCard is very good. Anytime I attend a training, I put it on and it makes it easier to identify me. I don't have to mention my name, the card gives my personal details, farm size, yield and other information. I feel so proud when I wear it. In fact I even put it on when I am attending programs like outdooring, marriage ceremonies, said Fati Sulemana, smallholder farmer, Nansoni, Northern Region.

The SmartCard also boosts project efficiency, ensuring that every cedi is productively spent.

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SUCCESS STORY

USAID ADVANCE Issues over 300 Grants to Increase Farmer Efficiency

A USAID-supported tractor ploughing a field for planting. Photo credit: USAID ADVANCE Tamale Office

" We were also able to generate income through ploughing for other smallholder farmers. This year we earned about GHS4,000 and used part to pay our 30 percent leverage to acquire a tricycle. We will use the tricycle to transport produce for farmers and charge them, also providing us extra income. Thank you to ADVANCE for this support."
Says Madam Asaaro

The USAID-funded Agricultural Development and Value Chain Enhancement (ADVANCE) project supports its participants with equipment grants to facilitate the production and post-harvest handling activities of maize, rice, and soybean smallholder farmers. The past quarter has been busy for the project's Grants unit: It has awarded 330 pieces of equipment to project participants in Ghana's three northern regions. Many of these awards were tarpaulins needed to decrease post-harvest loss. The project also distributed heavy-duty equipment, such as disc ploughs, bullock ploughs, donkey carts, and rippers.

The largest portion of the matching grants went toward the 20 tractors that the project awarded. In the Northern Region, the project assisted 10 farmers purchase tractors, while in both the Upper West and the Upper East regions, five farmers benefited per region. In addition to the equipment needed to prepare land for the growing season, USAID ADVANCE distributed 16 motorbikes and 20 tricycles to ensure that Outgrower Businesses (OBs) have the ability to reach and monitor the smallholder farmers they assist. Overall, 260 smallholder farmers in northern Ghana have benefited from grants awarded between March and July 2016.

Women's group leader Madam Victoria Asaaro from the Upper East Region is a grant recipient. She shares: "Through the ADVANCE grant, our group got four bullock plows and four donkey carts. Getting this equipment helped members plough their fields on time."

The grants do not only assist farmers but also enable other programs that will support project participants in multifaceted ways. Working with the USAID-funded financing project FinGAP, ADVANCE is strengthening the Ghana Agricultural Insurance Pool (GAIP) through a matching grant. This service buys down the risks involved in farming. With GAIP, farmers can risk more by growing more and better cope with the devastation that may come in times of drought or poor weather. This insurance scheme is transitioning from being a grant-based project into a long-term, sustainable program. USAID ADVANCE has also supported the Ghana Grains Council financially to support improvements to the grains value chain by strengthening linkages and managing warehouses to improve efficiency and competitiveness.

Moving forward, the grants unit will focus on climate-smart agriculture tools and equipment that enhance an OB's ability to monitor and record information about their outgrowers. This process will be scaled up as the harvest season arrives to ensure that farmers follow enhanced practices and that they carefully track yields and costs.

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SUCCESS STORY

Tablet-based App Enhances Data Collection and Extension Services

Some participants with their tablets after one of the training sessions. Photo Credit: USAID ADVANCE Tamale Office.

In northern Ghana, the USAID-funded ADVANCE project boosts maize, rice, and soybean production, improves value chain actors' access to markets and finance, and strengthens local capacities. In partnership with the Grameen Foundation, USAID ADVANCE is piloting the Smartex App, a tablet-based solution that provides extension services to project farmers and enhances data collection.

In the latter part of 2015, the project trained 36 outgrower businesses (OBs) that support 2,300 smallholder farmers in the Brong Ahafo and Ashanti Regions. They learned how to use the tablets and the SmarTex application to assist in trainings and data collection. ADVANCE will train an additional 120 OBs to access the service; they, in turn, will provide the service to 12,000 famers in the pilot's first phase.

Each OB receives a tablet, a pico projector, and a speaker. Interactive protocols on extension service, in video and pictorial form, are pre-installed on the tablets. They are tailored to farmers' knowledge level. OBs will show these protocols to smallholder farmers using the pico projector and speakers. ADVANCE expects that these tools will widen the project's reach to include both project and non-project farmers.

"It also helps me keep records of my farming activities so I can follow the progress I am making. In addition, with the tablet, I take photos of my farmers' field so we can discuss what we observe in them during training. I thank ADVANCE so much for this opportunity. I am now an "ICT farmer," says nucleus farmer, Prince Danso.

The app can also track a community's progress as it moves from good agricultural practice (GAP) trainings to setting up demonstration farms. Throughout the season, trainings and field days will draw upon information on the tablet. At harvest, a survey will be conducted using the tablet, and that will track any behavior change, adoption practices, and actual yields that will then be compared against the baseline and lessons transferred to the next season. To make the system sustainable, ADVANCE encourages those farmers reached by the tablet-based extension services to repay the services for the season with half a bag of produce.

Nucleus farmer Prince Danso has received a tablet and explains that, "The tablet is really helping me. I train my farmers (239) and others on good agricultural and post-harvest handling practices (land selection and preparation, row planting and spacing, appropriate fertilizer application, as well as pest and weed control) using the videos on the tablet, which I show with the pico projector."

ADVANCE also uses the tablets to collect data, replacing manual farmer registration traditionally done with pen and paper. Previously, these forms, attached with farmer photos, would be manually re-entered into the system at the project office. But now, by collecting, entering, and uploading data in one step, the tablet saves time, effort, and errors. Further, the M&E unit is assured that less information will go missing or contain errors. Better data collection will help the project focus on where and how to plan future trainings.

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