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Ghana Agricultural Development and Value Chain Enhancement Project (ADVANCE)

Second Semi-Annual Report, October 1, 2010 – March 31, 2011

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30th April 2011

IMPLEMENTING PARTNERS:



Association of Church Development Projects



Motto: "Growing Two Where One Stood Before"



This report covers activities under USAID Cooperative Agreement No. 641-A-00-09-00026-00.

LIST OF ACRONYMS

ACDEP	Association of Churches Development Projects
ADB	Agricultural Development Bank
ADVANCE	Ghana Agricultural Development and Value Chain Enhancement
AEA	Agricultural Extension Agent
AfDB	African Development Bank
AGRA	Alliance for a Green Revolution in Africa
ASRuD	Associates for Sustainable Rural Development
ATP	Agribusiness and Trade Promotion
BNARI	Biotechnology and Nuclear Agricultural Research Institute
CAGA	Carrot Grower Association of Ghana
CIGMAG	Citrus Growers and Marketing Association of Ghana
CRI	Crops Research Institutes
DCA	Development Credit Authority
E-ATP	Enhanced-Agribusiness and Trade Promotion
ECOWAS	Economic Community Of West African States
EU	European Union
EWB	Engineers without Borders
FASDEP	Food and Agriculture Sector Development Policy
FBO	Farmer Based Organization
FIs	Financial Institutions
FSF	Financial Services Facilitator
FST	Financial Services Team
FTF	Farmer-to-Farmer
GAFCO	Ghana Agro Food Company
GAP	Good Agricultural Practice
GAPTO	Ghana Agricultural Producers and Trader Organizations
GAVVP	Ghana ACDI/VOCA Volunteers Program
GFSR	Global Food Security Response
GSSP	Ghana Strategic Support Program
GTZ	German Technical Cooperation
IEHA	Initiative to End Hunger in Africa
IFPRI	International Food Policy research Institute
INGO	International Nongovernmental organization
KIP	Kpong Irrigation Project
M&E	Monitoring and Evaluation
MFI	Micro Finance Institution
MiDA	Millennium Investment Development Authority
MIS	Management Information System
MOAP	Market Oriented Agricultural Program

MOFA	Ministry of Food and Agriculture
MoFEP	Ministry of Finance and Economic Planning
MOU	Memorandum of Understanding
NAAMSECO	National Association of Mechanization Service Centre Operators
NBFI	Non-Banking Financial Institution
NGO	Nongovernmental Organization
NRGP	Northern Rural Growth Program
OACS	Osudoku Agriculture Cooperative Society
OISL	Opportunity International Savings and Loans
P4P	Produce for Purchase
RAFIP	Rural Agriculture Finance Program
RTIMP	Roots and Tuber Improvement and Marketing Programme
SADA	Savanna Accelerated Development Authority
SARI	Savannah Agricultural Research Institute
SME	Small and Medium Scale Enterprise
SMS	Short Message Service
STTA	Short-Term Technical Assistance
TA	Technical Assistance
TIPCEE	Trade and Investment Program for Competitive Export Economy
ToT	Training of Trainers
USAID	United States Agency for International Development
USAID-EG	United States Agency for Development – Economic Growth
USDA	United States Department for Agriculture
VCTF	Venture Capital Trust Fund
WAFF	West Africa Fair Fruits
WFP	World Food Program

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EXECUTIVE SUMMARY

During the reporting period, the project consolidated the gains made in the first year. Generally, most targets envisaged for the period were achieved and there are strong indications that the second year's targets will all be achieved by 30th September. The project worked directly with 88 supply chains, 60 of them have been engaged since the first year whilst the rest are new ones. Within these supply chains, the project reached 16,981 producers representing 85% of the target for 2011. There are approximately three times as many cereal farmers participating as fruit farmers. The majority (99%) of participating farmers are smallholders with average farm holdings of 1.9 Ha with only 1% being nucleus and large scale farmers.

For *Maize and Soybean*, the project reached over 7,500 and 3,600 farmers respectively and supported them in various ways to improve competitiveness of their produce. The focus of support during the reporting period was on seed trails for hybrid maize, use of mechanical planters for maize and soybean, crop harvesters and threshers for soybean. Quantity of maize and soybean produced and attributable to ADVANCE is about 17,000Mt and 7,000Mt respectively during the reporting period.

In the *Rice* sector, the project had established a number of supply chains especially in southern Ghana during the first year. The project therefore focused attention during this period to production areas in mid and northern Ghana to increase production volumes and meet quality standards demanded by major buyers. We also assessed market opportunities for parboiled rice in the sub region from production areas in northern Ghana. The project assisted 3,665 actors across our intervention zones comprising 3,571 farmers 32 buyers, 17 processors and 45 aggregators, Total rice produced was 8,146.55Mt out of which 2,447Mt is attributable to intervention by ADVANCE.

In the *Fruit sector*, two major focus areas was the management of the fruit fly menace that affects quality of citrus and mango, and provision through grants for the production of 5 million disease-free smooth cayenne suckers to revamp strengthen the raw material base for the fruit processing sector. Regarding the fruit fly management program, 93 demonstration sites were set up in 113 communities across 32 districts in Ashanti, Eastern, Volta, Greater Accra and Central regions. In all about 2,000 citrus and mango farmers adopted and benefited from acquiring skills to control and manage the fruit flies using a pheromone block technology that stops them from mating. The project acquired some of the pheromone block and supported the input dealer (Splendid Agro Products) to train and set up the demonstration in all the communities.

In the area of market support services, (*Inputs, Equipment and Outreach using ICT*) the project supported 53 input and 19 mechanized service providers to increase their sales by using ICT tools for effective message delivery to farmers, aggregators, and industrial buyers. The primary focus of the outreach and ICT is to significantly reduce the costs of delivering extension information, reducing risks from investment and facilitating electronic payment to reduce risks and delays. Also, we developed strong relationships with multiple radio stations to enrich their agricultural program content, increase the depth of farmer access to extension messages and promote private sector investment in extension delivery using FM radio as the delivery platform.

With *Financial Services*, the project worked with 7,530 actors who were assisted to access various financial services. In Tamale, the project linked Stanbic Bank to two of the major nucleus farmers (Khama Farms and Bongu Seed) which resulted in GH¢200,000 credit to finance their outgrower schemes this major season. Also, in Tema, the project linked First Allied and Savings loan, Stanbic and 8 firms in the fruits sector resulting in credit of GH¢99,400 being disbursed to them. To strengthen the rural banks, the project assisted ARB Apex to develop course materials targeting Rural Banks and also trained five ARB-APEX trainers, two representatives from the Root and Tuber Improvement and Marketing Project (RTIMP), five private consultants and five Financial Service Facilitators (FSFs) from ADVANCE.

The ADVANCE *Environment management plan and PERSUAP* remain the guiding tools for all commodity teams and field staff continue to refer to them in all their activities. Key activities undertaken during the reporting period include: building capacity of all field staff to identify and report appropriately on environmental issues; trained all field officers in basic principles of environmental management to ensure they have the capacity to identify and report any potential environmental non-conformances for further investigation and adoption of corrective actions in line with USAID and Ghana Environmental Protection Agency (GEPA) environmental regulations (22CFR 216 and LI1652). All grant applications were screened for environmental compliance, whilst the project engaged some fruit processing firms to explore effective management of waste from agro-processing and conversion to manure. A volunteer is being sought to further assess the environmental and economic viability of this activity.

The project has implemented activities outlined in the *Gender* strategic plan and made progress in ensuring that the project benefits all genders equitably. During the period under review, the focus of gender activities include: staff capacity building; identifying and addressing commodity specific gender based constraints to ensure equity in production resource allocation; and ensuring that a least 30% of ADVANCE beneficiaries are women.

During the period, 43 applications were shortlisted for support under the *Grants program* to procure plowing, planting and harvesting equipment for soybean, maize and rice; upgrade and/or increase capacity of rice mills; support the production and supply of disease-free smooth cayenne pineapple suckers, and supporting the establishment and/expansion of pesticide application services.

Since 2008, 86 assignments *Volunteer Program* were completed in 33 districts with 5,933 direct beneficiaries and 116,169 indirect beneficiaries. Out of the 86 assignments, 32 are from the associate award. Specifically during the period under review, 65 assignments were identified as viable and 26 (14 ADVANCE and 12 FtF) have been completed while 6 are in progress. The rest are scheduled to take place by the end of September 2011. Also, all 58 assignments which were completed as at December 2010 were reviewed (22 ADVANCE and 36 FtF) to assess the initial impact of the program.

The project is using *Geographic Information System (GIS)* as a tool to gather accurate data to improve the efficiency of specific supply chains and improve competitiveness of the respective commodity value chains. GIS is also being used to support the M&E functions of the project. The project mapped and established a database for over 12,000 citrus fields and various

stakeholders are using the results. An example of how firms are using the results is that, whilst the GIS mapping shows that within a radius of 50km, Pinora can source over 133,000MT of citrus which is far above its annual installed processing capacity of 80,000 Mt, the company sourced only 50% of their installed capacity in the 2009/2010 season. However, with the database and organizational restructuring, Pinora is now processing at 80% capacity.

The focus of *monitoring and evaluation (M&E)* during the period under review was to finalize project targets, performance monitoring plan, upgrade the MIS database to facilitate easier data entry, retrieval and analysis, assess data quality and establish a strategy for data quality assurance, strengthen staff capacity to assess and attribute change, analysis and report writing, and an initial assessment of program outcomes.

SECTION 1.0 INTRODUCTION

USAID awarded the ADVANCE program in July 2009 to ACDI/VOCA through the FtF LWA mechanism under the Associate Cooperative Agreement No. 641-A-00-09-00026-00 with the goal of facilitating a transformation of Ghana's agricultural sector in select agricultural industries to achieve increased competitiveness.

The ADVANCE program contributes directly to achieving USAID's Strategic Objective 6 "Increase competitiveness of Ghana's agricultural sector in domestic, regional and International markets" as well as the results of the GFSR program which aims to increase agricultural growth, stability and food security. Activities under ADVANCE Component 1 (Enhanced Value Chain Competitiveness) contribute to GFSR Intermediate Result 1, i.e. 'Enhanced Productivity of Smallholder-based Agriculture'; while activities under ADVANCE Component 2 (Increased Market Access and Development) and Component 3 (Increased Access to Financial Services) contribute to GFSR Intermediate Result 2, i.e. 'Reduced Agricultural Trade and Transport Barriers'. ADVANCE also contributes to IEHA objective of raising rural incomes through agricultural development and to the objectives of the Government of Ghana FASDEP II policy.

This report presents the progress made during the first half of the second year of project implementation covering the period October 1, 2010 through March 31, 2011.

In this report, we summarize the broad results and achievements in the first six months of the second year's project implementation and how they feed into specific intermediate results of USAID's Strategic Objective 6. We also present the progress made with each targeted commodity by comparing achievements with targets that were set for the second year.

The report also presents progress with volunteer and grant programs, efforts in addressing issues related to the environment and gender, and finally our monitoring and evaluation activities during the period.

SECTION 2.0 SUMMARY OF RESULTS

During the period under review the program worked with a total of 88 market channels in consisting of 60 supply chains from FY 2010 and 28 new supply chains.

Within the supply chains, 16,981 producers (Table 3.1) participated in the ADVANCE program during the period under review. This represents 85% of the target number of producers for FY2011. There are approximately 3 times as many participating cereal farmers as there are fruit farmers. Of the total number of farmers reached 27% (4,611) are located in the 3 northern regions.

Table 2. 1:ADVANCE Beneficiary Producers

	FY 2010 Status	FY 2011 to date	FY 2011 Target	FY 2011 target %achievement
# of farmers	23,749	16,981	20,000	85%
Maize	10,582	7,589	15,000	51%
Rice	1,890	3,571	5,000	71%
Soya	7,232	3,621	5,000	72%
Mango	230	603	923	65%
Pineapple	367	555	1,188	47%
Citrus	3,448	3,182	4,648	68%

The majority (99%) of participating farmers are smallholders with average farm holding of 1.9 ha, while nucleus and large scale farmers make up 1%. Within the active supply chains the program engaged with 289 FBOs, 107 aggregators, 76 buyers, 58 processors, 116 input dealers, 21 mechanized service providers, 36 financial institutions and 16 radio stations.

A summary of overall results achieved, with respect to the program is presented in this section.

ADVANCE Program Goal: Increase competitiveness of Ghana's Agricultural Sector in Domestic and Regional Markets

The overall goal of ADVANCE is to increase the competitiveness of Ghana's agricultural sector in domestic and regional markets. Progress towards achievement of this goal is presented (Table 2.2). Results achieved contribute to the GFSR overall objective of Increasing Agricultural Growth, Stability and Food Security and to IEHA IR 3 and IEHA output indicators.

Table 2. 2: Program Results

Indicator	FY 2010 Status	FY 2010 Achievement	FY 2010 Target	Proportion of FY 2010 Target achieved
% rural household income increase	n/a	n/a	12	
Change in volume of purchases from smallholders of targeted commodities (Mt)	7,460	25,990	1,863	1,395%
Change in value of purchases from smallholders of targeted commodities (\$US)	1,325,820	9,479,383	754,509	1,256%
Indicator	FY 2010 Status	FY 2011 Achievement to Date	FY 2011 Target	Proportion of Target achieved to date
# of individuals benefiting directly from project activities	21,477	16,981	20,000	85%
# of rural households benefiting directly from intervention	16,730	14,006	13,000	108%
# of vulnerable households benefiting directly from intervention	6,832	7,727	11,000	70%
# of assisted producer organizations, trade and business associations	218	289	350	81%
# of women's organizations assisted	26	23	25	92%
# of agriculture related firms benefiting directly from project activities	104	239	120	199%

A total of 289 FBOs (81% of FY 2011 target), including 23 women's organizations (92% of FY 2011 target), have benefitted from program activities during the reporting period. Similarly, 239 agriculture related firms (double the FY 2011 target) comprising 9 buyers, 119 aggregators, 39 processors, 53 input dealers, 19 service providers, have benefitted from program interventions.

Purchases of all commodities from producers (attributable to ADVANCE) resulting from production during the 2010 farming season is a total of 25,990 Mt with a total value of \$9,479,383. This significantly exceeds the FY 2010 target volume of 1,863 Mt and value of \$754,509.

ADVANCE Component 1: Enhanced Value Chain Competitiveness

Progress towards achieving Component 1 of ADVANCE i.e. Enhanced Value Chain Competitiveness. Results achieved contribute to GFSR IR1, sub IRs 1.1, 1.2 and 1.3 and to IEHA IR1, IR3 and IEHA output indicators is presented in Table 2.3

Table 2. 3: Component Results 1: Enhanced Value Chain Competitiveness

Indicator	FY 2010 Status	FY 2010 Achievement	FY 2010 Target	Proportion of FY 2010 Target achieved	Remarks
Gross margin per hectare (\$)					
Maize	-	319	341	94%	FY 2010 farming season
Rice	-	1,269	1,333	95%	FY 2010 farming season
Soya	-	74	156	47%	FY 2010 farming season
Mango	-	n/a	1,295	-	FY 2011 farming season
Pineapple	-	2,955	1,947	152%	FY 2011 farming season
Citrus	-	101	68.5	147%	FY 2011 farming season
Crop yield (Mt/ha)					
Maize	-	1.7	2.0	85%	Yield figure for FY 2010 farming season
Rice	-	2.6	4.0	65%	Yield figure for FY 2010 farming season
Soya	-	1.1	1.2	92%	Yield figure for FY 2010 farming season
Mango	-	7.5	5.0	150%	Yield to date for FY 2011
Pineapple	-	56	50.0	112%	Yield to date for FY 2011
Citrus	-	4.1	6.5	63%	Yield to date for FY 2011
Indicator	FY 2010 Status	FY 2011 Achievement to date	FY 2011 Target	Proportion of FY 2011 Target achieved to date	Remarks
# of additional hectares under improved technologies or management practices	2,600	2,668	11,000	24%	-
# of beneficiaries adopting new technologies or management practices	3,600	2,410	2,500	96.4%	-
# of agricultural technologies made available	8	8	12	67%	-
# of demonstration sites created	10	94	50	188%	-
# of new technologies or management practice under research	0	0	2	0%	-
# of new technologies or management practices under field testing	0	1	3	33%	-
# of beneficiaries trained in new technologies or management practices	2,644	7,386	10,000	74%	-
# of beneficiaries trained in Farming as a Business or other entrepreneurship and business skills	2,878	5,647	10,000	56%	-

Cereal crop productivity results achieved for the 2010 farming season were as follows: 1.7Mt/ha for maize, 2.6Mt/ha for rice and 1.1MT/ha for soya. All cereal crop yields were slightly lower than the targets set for FY 2010. Maize, rice and soya yields were 85%, 65% and 92% of the respective targets for FY 2010. Lower than expected soya yield was reported to be due to poor

quality seed and late planting and limited experience in soya cultivation for farmers in the Brong-Ahafo Region. Farmers in northern Ghana also experienced extensive shattering of soya resulting in reduced output. Rice yields were affected by flooding of rice fields and bush fires in northern Ghana, drought and flooding in the Volta Region and use of poor quality seed and low yielding varieties in the Brong-Ahafo Region. Maize yields were low due to low use of inputs and use of poor quality seed. In the coming period, we will address these shortcomings by supporting input suppliers and seed producers to become more effective and improve their input supply system in general and the supply and use of quality seed in particular.

Fruit yields to date for FY 2011 are as follows: 7.5Mt/ha for mango, 56Mt/ha for pineapple and 4.1Mt/ha for citrus. These are 150%, 112% and 63% respectively of the FY 2010 targets. The relatively low citrus yield was reported to be a result of bad weather.

Yields for soya, mango and citrus were lower than the national averages (Table 2.4). Yields for rice and pineapple were higher than the national average while the yield for maize was the same as the national average.

Table 2. 4: Comparison of Crop Yields with National Average

Commodity	Crop yield (Mt/ha)	
	ADVANCE	National Average
Maize	1.7	1.7
Rice	2.6	2.4
Soya	1.1	1.5
Mango	7.5	11.0
Pineapple	56.0	50.0
Citrus	4.4	35.0

Gross margins for the respective crops were as follows: \$319/ha for maize (93.5% of FY 2010 target), \$1,268/ha for rice (95% of target for FY 2010) and \$74/ha for soya (47.4% of target for FY 2010). Fruit crop gross margins were based on the FY 2011 production season and were \$2,955/ha for pineapple (152% of FY 2011 target) and \$101/ha for citrus (147% of FY 2011 target). Gross margins for mango were not available at the time of reporting.

To date 7,386 beneficiaries of whom 1,944 (26%) were women have received training in agricultural technology or management practices. This is 74% of the targeted number of beneficiaries to be trained in FY 2011. Training was also provided for 5,647 beneficiaries including 1,831 women (32%) in farming as a business. A summary of training topics is presented in Box 4.3. A total of 94 demonstration sites (88% above the target for FY 2011) of which 93 demonstrated pest control for fruits and 1 demonstrated the use of an improved variety of maize seed.

Through the training events and demonstration sites, a total of 8 agricultural technologies and/or management practices have been introduced to farmers during the period. This represents 67% of the FY 2011 target. Technologies and management practices introduced were the use of pheromone trap for fruit fly control, use of herbicides for land preparation, minimum tillage, stone-bunding, cover

Training Topics
Training in Agricultural Productivity/ Technology
Fruit fly control using pheromone traps
Integrated pest/disease management
Integrated nutrient management
Post-harvest handling and management
Water management
Weed management
Seed production, seed selection, seedling production
Nursery management
Agrochemical handling and application
Environmental regulations
Training in Farming as a Business
Farm budgets and Gross margin analysis
Business plan development
Records keeping
Marketing
Financial management

cropping, timely harvesting, use of maize shellers for harvesting instead of striking bags of maize with sticks, and storage of maize for appropriate duration. No research on new technologies has taken place to date. However 43 maize varieties were field tested in collaboration with the Crops Research Institute.

Following exposure to the technologies and practices listed above a total of 2,410 beneficiaries have adopted at least one new technology or management practice which has been applied to a total of 2,668 ha. While the number of beneficiaries adopting technology is close to the target set for FY 2011, the number of additional hectares under cultivation is only 24% of the set target. It must be noted that records of farm area have been based on farmer's estimates of their farm sizes rather than actual physical measurements. A citrus farm mapping study conducted in FY 2010 showed that farm size estimates could have an error of up to 40%. GIS mapping coupled with crop cut survey methodology will be used during the 2011 farming season to obtain accurate farm size data and to determine a correction factor for estimating farm size. This will contribute to improved accuracy in data on cultivated areas and yields for the FY 2011 production season.

ADVANCE Component 2: Increased Market Access and Development of Local and Regional Markets

Progress towards achieving ADVANCE Component 2 is presented in Table 2.5. Results achieved contribute to GFSR IR2, IEHA IR3 and IEHA output indicators.

Table 2.5: Component 2 : Increased Market Access and Development of Markets

Indicator	FY 2010 Status	FY 2011 Achievement to date	FY 2011 Target	Proportion of FY 2011 target achieved to date
# of private public partnerships established	1	0	1	0%
# of beneficiaries adopting a more market oriented attitude	-	12,903	20,000	65%
Volume of commodities sold to WFP by beneficiaries	3,275	0	200	0%
Value of commodities sold to WFP by beneficiaries	971,862	0	60,000	0%
# of business service providers receiving project assistance	46	118	60	197%
# of beneficiaries accessing BDS services	6,422	12,246	15,000	82%

118 business development service providers comprising 19 mechanized service providers, 53 input dealers, 10 radio stations and 36 financial institutions received assistance from the program. This is 97% above the target for FY 2011. Support to mechanized service providers was primarily in the area of increasing patronage of their services by linking them to aggregators and producers participating in ADVANCE supported supply chains. Support to input dealers consisted of training in input service provision and assisting them to undertake promotional activities to increase their outreach and customer base. Radio stations benefitted from technical support to improve the content of their agricultural programs, linkages to sponsors for their agricultural programs and sponsorship to participate in stakeholder fora. In the case of financial institutions, opportunities were provided for direct interaction with producers, assistance provided with monitoring of loan recipients and introduction to the use of SMS technology in their banking operations among others. In all 12,246 value chain actors comprising 12,076 farmers, 91 aggregators, 34 processors, 7 buyers, 38 input dealers benefitted from business development services such as input supply, training, tractor services and linkages to markets through dedicated supply chains. This forms 82% of the target for FY 2011.

The market oriented approach promoted by ADVANCE continues to gain traction among program participants. Evidence of this behavior change during the period under review is presented in Box 4. 1. A total of 12,720 program beneficiaries, comprising 12,464 producers, 94 aggregators, 21 buyers, 9 processors, 40 input dealers, 8 mechanized service providers and 11 radio stations exhibited at least one of these behaviors during the reporting period. This is 65% of the target for FY 2011.

Box 4. 1: Market oriented behavior demonstrated by beneficiaries

Producers	Aggregators	Buyers/Processors
<ul style="list-style-type: none"> • Making good on contracts with buyers and maintaining loyalty to aggregators who pre-financed their farming activities; • Nucleus farmers use of SMS messaging technology for communicating with producers in their respective supply chains • Nucleus farmers investing in equipment for use by their outgrowers 	<ul style="list-style-type: none"> • negotiating for inputs on behalf of their supplier farmers; • borrowing from financial institutions and subsequently on lending to their supplier farmers; • expanding their supply sources and searching for new markets for their produce • funding the creation of demonstration farms on good agronomic practices for farmers 	<ul style="list-style-type: none"> • use of SMS messaging technology for communicating with producers in their respective supply chains
Financial Institutions	Input Dealers	Radio Stations
<ul style="list-style-type: none"> • taking a chance with providing credit to farmers through a group lending pilot • requesting to be linked to additional farmer clients after achieving a 90% repayment rate, of loans provided to farmers in northern Ghana, during the 2010 farming season • training aggregators on financial management 	<ul style="list-style-type: none"> • providing input credit to farmers; • providing discounts to farmers for bulk purchases of inputs • using festivals as a platform to educate farmers on proper use of agrochemicals • input dealers pre-financing field demonstrations for the benefit of farmers; • paying for airtime on radio to reach out to customers. 	<ul style="list-style-type: none"> • increasing the agricultural related content of their programs

No sales have been made to the World Food Program during the reporting period. However discussions are ongoing between ADVANCE and the WFP concerning the Purchase for Progress (P4P) program. Under the P4P, the World Food Program is interested in purchasing grain directly from smallholders participating in the ADVANCE program as well as from the Ghana Grains Council through the warehouse receipts scheme. A representative of ADVANCE is a member of the P4P steering committee.

ADVANCE Component 3: Increased Access to Financial Services

Progress towards achieving ADVANCE Component 3, i.e. Increased Access to Financial Services is presented in Table 2.6. Results achieved contribute to GFSR IR2 and IEHA IR3.

Thirty six (36) financial institutions were engaged through ADVANCE interventions during the reporting period. These included 6 commercial banks, 25 Rural and Community Banks and 5

non-bank financial institutions. The focus of engagement with the financial institutions within the reporting period has been to support them to increase their lending to the agricultural sector through strategic alliances with key lead buyers/aggregators and processors and also to provide support in monitoring loan repayment through follow up on beneficiary farmers.

Table 2. 6: Component 3 : Increased Access to Financial Services

Indicator	FY 2010 Status	FY 2011 Achievement to Date	FY 2011 Target	Proportion of FY 2011 target achieved to date
# of firms that invest in improved technologies	3	5	20	25%
Value of firms' investment in new technologies	\$100,263	\$102,474	\$600,000	17%
# of beneficiaries who received loans	2,432	5,246	5,000	105%
Value of loans to beneficiaries	\$409,815	\$387,080	\$1,000,000	39%
# of beneficiaries with improved access to financial services	4,074	7,563	10,000	76%
# of financial sector professionals trained on financial products	0	0	120	0%
# of financial services introduced	2	1	1	100%

During the reporting period 7,563 beneficiaries (mainly smallholder/individual farmers and aggregators) accessed financial services such as opening of savings accounts, credit facilities and financial management training. This is an increase of 86% over the number of beneficiaries in FY 2010 and 76% of the target for FY 2011. A total of 5,246 beneficiaries of which 35% were women received credit during the reporting period. This credit was in cash and kind with a total value of \$387,080 of which 28% was accessed by women. While the total number of beneficiaries who have accessed credit to date exceeds the FY 2011 target by 5%, the value of credit received is comparatively low (39% of the FY 2011 target). The average loan per beneficiary is \$74 compared to an average of \$190 targeted for FY 2011.

Of the total value of credit disbursed 38.3% was provided by financial institutions while the remaining 61.7% was provided by supply chain actors i.e. nucleus farmers (32.3%), input dealers (18.4%) and processors (11%). The number of financial institutions providing credit to actors in supply chains, represents 20% of the total number of financial institutions engaged during the reporting period. The low participation of financial institutions may be a result of their discomfort with lending to the agricultural sector especially to producers but also because the farming season is yet to begin. It must be noted that at least two rural banks have achieved excellent repayment rates for credit disbursed to producers and are keen not only on repeating the loans for the FY 2011 but also increasing the number of beneficiaries of their loan facility.

One new financial service based on group loan concept is being piloted by South Akim Rural Bank in the West Akim District. The group loan concept was designed to enhance commitment of members in beneficiary farmer groups to pay back credit facilities acquired from the rural bank. A total of 72 farmers from three Farmer Based Organizations have received \$18,346 credit to maintain their farms and purchase inputs.

During the reporting period, 5 firms (UWAI, Kobiman Farms, Pee Farms, Edenic Mills and Splendid Agro Products) invested a total of \$102,474 in improved technologies to support increased productivity and quality of produce in the maize, soya, rice and citrus sectors. UWAI invested in 5 power tillers; Kobiman and Pee Farms invested in tractors; Edenic Mills invested in rice processing equipment, while Splendid Agro Products invested in pheromone traps for fruit fly control. The number of firms investing to date is 25% of the FY 2011 target while the total investment to date is 17% of the FY 2011 target of \$600,000. The bulk of these investments were made possible through matching grants from the ADVANCE grants program.

SECTION 3.0 PROGRESS MADE WITH SPECIFIC COMMODITIES

In this section, we report on the progress made to-date for the commodities targeted by the program, including maize, rice, soybean, pineapple, mango and citrus. A common thread that runs through ADVANCE activities in all these commodities is that there are clear, but different constraints that slow or impede investments in making the particular commodity chain more competitive. Often these include lack of robust markets to supply and finance high quality seeds and other inputs and equipment, inadequate adherence to good agricultural practices (GAPs), poor or inadequate post-harvest facilities, and/or weak commercial linkages due to breakdown of trust.

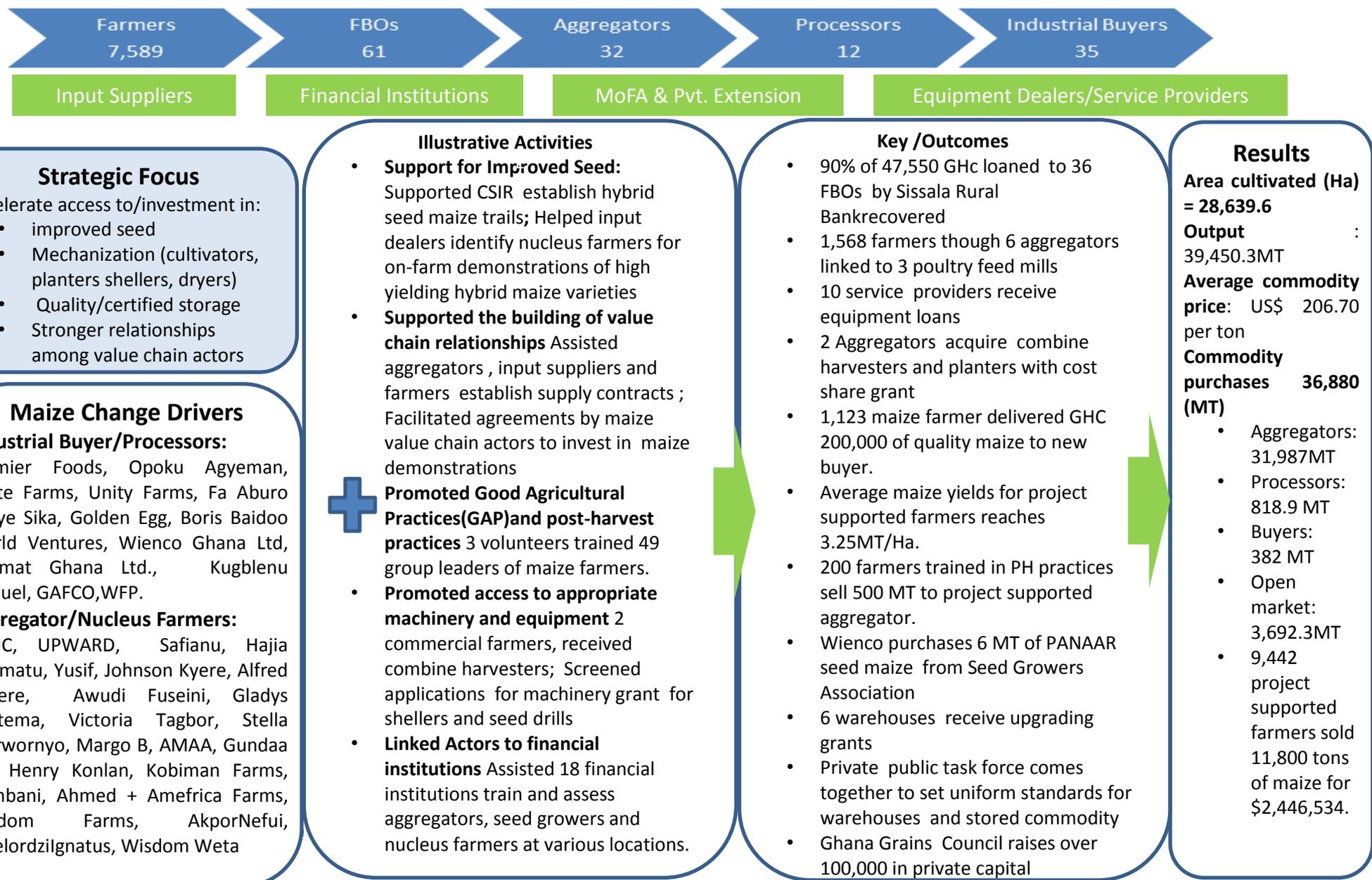
The challenge ADVANCE faces in meeting its transformation objective, is not in providing these missing elements---this has been done before---but to understand why the market and private sector actors are not investing in overcoming these constraints on their own. Aside from distortive policies which are addressed elsewhere in this report, the answer lies in the behavior of firms, their willingness to take risks, and the strength, or lack thereof in the relationships they have with other firms.

Much of the work carried out in each of the ADVANCE commodities combines the introduction of new technologies with a range of activities that strengthen the linkages between and the quality and reliability of the relationships among value chain actors and service providers to build trust, and willingness to invest by value chain actors.

The remainder of this section summarizes these activities by commodity.

3.1 MAIZE

Table 3. 1: Summary of Maize Value (Minor Season) Chain Activities, Reporting Period Oct 2010-March 2011



In the period under review, the ADVANCE project worked with 7,729 private sector Actors in the maize industry made up 7,589 farmers, 61 Farmer Groups, 32 Aggregators, 12 Processors and 35 Buyers. Table 3. 1 above summarizes the significant actors, outcomes and results achieved during the reporting period.

Three interrelated factors were identified as the major constraints to transformation in the maize sector during a strategic assessment and planning session conducted by the ADVANCE maize-soya team. These are the lack of availability of reliable quality high yielding seed; the low level of mechanization for production but particularly post-harvest processes and weak access to quality storage facilities.

The value chain/competitiveness approach used by the ADVANCE team is based on identifying actors with the incentives to overcome these constraints, and facilitating the investment and the commercial relationships among these actors and service providers to overcome these constraints.

Availability of Seed Achieving sustainable, private sector-driven improvements in the seed market is essential to the transformation of the maize sector envisioned by ADVANCE. For this reason, ADVANCE support to the seed industry includes support to Crops Research Institute (CSIR) and two private sector maize hybrid seed importers, Pioneer and Panaar, in a dual strategy to monitor and accelerated the process by which a new seed variety is introduced, tested and certified, while assisting private companies establish their own proprietary networks through mills. Aggregators, nucleus farmers and outgrowers for seed varieties for which they have obtained preliminary approval to import (but not to sell commercially).

Mechanization Access to appropriate machinery, equipment and land preparation services

Another element of critical importance to the transformation of the sector is the introduction of higher levels of appropriate mechanization, and ensuring that this trend continues by supporting a robust private sector market for machinery sales, rental services, and repair.

Two, (2) large scale farmers, Kobbiman Farms and PEE farms received combine harvesters, 5-row mechanised planters and a tractor under our Grants scheme to improve their productivity as

No. of actors reached in reporting period

Farmers reached	7,589
FBOs	61
Aggregators	32
Processors	12
Buyers	35
End markets	12

Production Results

Area cultivated (Ha) = 28,639.6

Output (MT)

Expected output:	65,101.5MT
Actual output	39,450.3MT

Output attributable to ADVANCE:
44.3% of the actual output

Commodity purchases (MT)

Aggregators:	31,987MT
Processors:	818.9 MT
Buyers:	382 MT
Open market:	3,692.3MT
Total:	36,880-2 MT

well as that of their outgrowers. A published invitation for applications towards the award of grants to acquire equipment and machinery to upgrade maize and soybean production was also done. Please see details in the Grants section of this report.

Improved Storage

The lack of quality storage facilities contributes considerably to the degradation of grain quality from the farm gate to its terminal market and is responsible for losses in excess of 20% of the grains value post-harvest. The lack of storage facilities of any kind lead to significant price dampening effects, particularly during bumper harvests. At the same time, consumer and industrial buyer demand is increasing for quality grain that meets Ghana and international standards for broken grains foreign matter, moisture content, aflatoxin, levels etc. The WFP has begun buying grain from ADVANCE-assisted groups during the reporting period, but their quality requirements are high and cannot be met unless grain is stored well.

To address the storage and storage quality constraints during the reporting period, the ADVANCE team:

- Continued to support the Ghana Grains Council in its activities, to develop and enforce uniform standards for warehouses and stored grain; supervise the construction of new and upgrading of existing warehouses to meet these standards; establish a trading and receipt tracking platform for stored grain; and develop a warehouse receipting pilot with public and private sector support (see text box);
- Selected three warehouses for upgrading grants and two warehouse operators for grants to construct new warehouses. All five grants were made requiring a 30% cost-share by the owner-operator;
- Coordinated and continue to

Ghana Grains Council (GGC)

The GGC is supported by a grant from ADVANCE and an initial grant from the USAID West Africa Agricultural Trade Promotion (ATP) Project. The GGC is a private industry association whose purpose is to operate as an advocacy group for the grain industry to government, promoting the competitiveness of this industry while ensuring small holder benefits; and as an industry self-regulatory body operating a warehouse receipting system (WRS). This WRS will serve as the foundation for a future commodities exchange, but in the short term will build the foundation for such a system by standardizing the quality of stored commodity and providing a low risk platform for receipt financing.

To date, with ADVANCE support, the GGC has or is:

- Elected a board of directors representing a diverse group of stakeholders in the grain trade and support industries Generated over 100,000 Ghc in membership revenue.
- Drafted grain and warehouse standards that have been accepted by MOFA, the WFP and MCC/MIDA for new warehouse construction.
- Engaged support of two commercial banks for their receipt financing scheme.
- Supervising construction and upgrading of five warehouses
- Participating in a joint public/private sector taskforce on the establishment of industry standards for an eventual commodity exchange; Procuring the soft- and hard-ware for a commodity transaction and receipt tracking platform, which should be in place by August 2011.

coordinate with the WFP to develop and enforce reasonable standards for commodity quality and to ensure that both traders and small farmer FBOs are able to meet WFP procurement requirements. ADVANCE team member Kweku Korantang represents ADVANCE on the WFP P4P taskforce;

- Coordinated and continue to coordinate with other development partners who are constructing and or upgrading storage facilities to Ghana Grains Council standards. They include the 30 MCC-MIDA Agribusiness centres that are currently under construction using GGC guidelines and 30 AGRA funded community level storage facilities in Northern Ghana under ACDI/VOCA's Masara N'Arziki program

The ADVANCE team has placed a priority on accelerating investments in improved storage with the expectation that most of these facilities will be available by the end of the 2011 major season maize harvest.

Building Stronger and more complex business relationships

Investment required to accelerate growth and transform the maize industry, while ensuring continued benefits to small scale farmers, occurs either through completely integrated market channels where a single firm acts as equipment and input supplier, extension service provider, and buyer; or through multi-firm collaboration. The Masara N'Arziki program is a fully integrated model, in which the farmer only supplies land and labor. The ADVANCE program is collaborating with Masara N'Arziki, but this model has little chance for replication as there are currently no other firms as large or as well capitalized willing to invest in developing a fully integrated production model. The ADVANCE maize-soya team has focused during the reporting period on strengthening relationships among value chain actors and between them and service providers, in order to increase investment in maize productivity. Strengthening these relationships often requires efforts to overcome mistrust that exists between value chain actors. To overcome the breakdown of trust between supply chain actors that has often characterized the maize chain, ADVANCE has assumed the role of "honest broker" in order to rebuild commercial relationships built on the trust that comes from successful transactions. ADVANCE activities during the reporting period to strengthen multi-actor agreements included:

- ***Agreements respected.*** The terms and conditions of over 80% of MOUs between maize supply chains actors in northern Ghana were respected by their principals.
- ***Aggregators supply quality maize*** ADVANCE FBFs linked forty six aggregators including 22 members of the Association of Maize Aggregators at Agogo, (AMAA) participated to GAFCO to fulfil a start-up purchase of 500Mt of maize with an anticipated 1,500Mt of quality maize for future delivery
- ***Maize financial analysis training empowers farmers.*** Sixteen nucleus farmers with their 100 outgrowers were trained on gross margin analysis in the soybean growing areas in northern Ghana. Combined with improved access to price information through platforms like Esoko, such trainings have been responsible for the improved negotiation capability of farmers with buyers.
- ***Private investment in demonstration centers.*** Thirteen aggregators, five FBOs, and six nucleus farmers in the Techiman and Tamale areas co-invested in establishing demonstration centers in the proper use of herbicides, improved seed, good agronomic practices, and tractor services

- **SMS initiative helps aggregator** supported by ADVANCE. Boris Baidoo is providing extension and price information services using SMS technology to his 223 farmers of which 42 are women.
- **Conflict mediation skills make for stronger relationships** ADVANCE field staff have been trained in conflict mediation and have successfully brought parties to a conflict back together to come up with mutually agreeable solutions that respected the terms of agreements made. Over the life of the project, this conflict mediation function will be transferred to private service providers.
- **6Mt of seed maize worth \$36,000 was sold to Wienco** as a result of one meetings ADVANCE organized for stakeholders' to strengthen linkages between them.

Good Agricultural Practices (GAPs) and post-harvest practices

A crucial element of rebuilding the commercial relationships between supply chain actors is ensuring that buyers receive the quality they expect and require.

1. Price premiums and training

High quality standards of produce, (less/no stones, few dis-coloured

and/or broken grains etc.), was realized from suppliers within the supply chains of maize to the SFMC and UWAI this harvesting period. This is the result of training for a total of 1,729 aggregators on post-harvest handling methods including time for harvesting, use of storage chemicals and handling after harvest. An incentive for adherence to the required standard was the offer of a slightly higher price of GHC36 for a 100kg bag compared to GHC31 for white maize at the same time.

2. The 15 aggregators and end market of two nucleus farmers supported by ADVANCE shared or benefited from improved knowledge on the use of farm records keeping, farm management, farm budgeting etc. Such farmers can now improve their agricultural practices. This was the result of work done by three, (3) volunteer short-term technical assistants who trained 49 maize farmers on these topics. In other developments, 848 producers of maize were also sensitized on farm budgets and marginal analyses in the three northern regions.

Access to finance

Ensuring sustainable access to a wide range of financial services is a pillar of ADVANCE's efforts to enable the investments needed for the sector's transformation, as well as its sustainability strategy.

Aggregators: Pariahs of the maize value chain?

ADVANCE maize team members led by volunteer Joshua Wienstein analysed operational costs and margins for maize to test the hypothesis that aggregators are cheating farmers. Structured interviews were conducted among 20 female aggregators located along trunk roads and off-the road locations around Techiman. The research investigated aggregator costs, quantified aggregator expenditures and revenues and calculated margins.

The study found that aggregator net margins, range from 6% to 20%, which can hardly be considered exorbitant. Further, the fragmented nature of maize production makes aggregators an important and necessary component of the chain.

ADVANCE supports aggregators by strengthening their capacity to provide more and better quality input, extension, and equipment services to small and medium scale farmers. Project support to aggregators has included technical assistance and training, linking aggregators with seed, input and equipment companies and financial institutions. Several aggregators are now investing in the upgrading or construction of Ghana Grains Council certified warehouses.

Aggregators, nucleus farmers of seed and some financial institutions, (Procredit and Sinapi Aba), were brought together to interact in an ADVANCE-sponsored “maize stakeholders meeting”. Since then ProCredit, Sinapi Aba and Stanbic Banks have continued to show interest to finance the activities of this supply chain in the coming year. ADB and AmalBank have joined the Ghana Grains Council, and they – in addition to Stanbic Bank - have indicated interest and willingness to participate in the GGC warehouse receipting system. Such interactions have also resulted in stronger business relationships based on well understood product requirements and responsibilities of all actors in the supply chain. For more detail on financial services activities carried out during the reporting period, see section 5.3.

Related Studies conducted during the period under review

During the period, a study was conducted to assess the growth opportunities in the livestock and fisheries feed sector. The study recommended a list of priority commercial feed mills, poultry farmers with commercial feed mills and soybean processors who are key stakeholders in building the domestic-based maize and soybean value chains. The study also identified the types of assistance that could be included in proposition for each of a list of priority stakeholders. These recommendations are guiding planned interventions in the sector in the coming period. A second study was conducted on maize aggregators in the Techiman area, see text box.

Mapping of locations of Maize and Soybean Supply Chains Actors

Another activity undertaken to enhance the competitiveness of maize and soybean was the mapping of more 15 key processors and 12 nucleus farmers of soybean and maize to build the database by the Project’s Geographic Information Systems (GIS). The data collected is currently being processed. This will improve the traceability of the commodities and give useful initial information to potential investors in the sector.

The private investments that made significant contributions to the overall increases in yields and production include the initiatives of the FBO, Masara Narziki Farmers Association (MAFA), in northern Ghana and several large scale maize farms scattered across the country. ADVANCE is talking to MAFA to explore possibilities for the building on their model and experiences as well as on the implementation of the Warehouse Receipting System.

Table 3. 2: Overall progress and achievements relative to maize targets for the period

Constraints in the value chain	Expected outputs/outcomes	Achievement in reporting period
Limited availability of quality seeds	250Mt of quality seeds, 10% of contracted growers producing for industrial buyers using hybrid seeds 10% increase in certified seed sales	Year 1 on-station trials of hybrid maize seeds completed with signs of promising varieties from private seed dealers. Trial results inconclusive and will be repeated in coming season. 38Mt tons of Mamaba hybrid seed obtained from work done with 30 seed growers. Seed now being sold from Kumasi to interested farmers.
Low trust and weak	2,000 farmers with formal contracts	7 FBOs, (with 49 members), in the in the

Constraints in the value chain	Expected outputs/outcomes	Achievement in reporting period
value chain relationships	<p>and 3,000 with informal agreements</p> <p>10 aggregators involved in formal contracts with buyers and farmers</p> <p>At least one buyer-aggregator channel applies performance incentives</p> <p>At least 2,000 farmers accessing high quality inputs through contracted 75% of farmers remain in contract scheme after year 1</p>	<p>Upper West Region signed and fulfilled contracts for the purchase of yellow maize, 150Mt of yellow maize supplied under this contract. For ensuring high quality produce, yellow maize farmers received a premium price of GHC36)/Mt compared to prevailing price of GHC310/Mt as performance incentive.</p> <p>One nucleus farmer, Henry Konlan, (with 235 outgrowers) and Baba Yara Buying Company in the Northern Region signed contracts for the purchase of white maize. 300Mt of white maize was purchased under this arrangement</p> <p>Total of 284 farmers were involved in written/signed contract farming. Another 6000 involved in verbal/unsigned farming into 10 identifiable maize supply chains</p> <p>Number of farmers/actors remaining in contract relationship will be monitored with onset of season in the coming reporting period.</p>
Poor adherence to Good Agricultural Practices(GAP) and post-harvest Practices	<p>An average of 3Mt/ha for the 5000 farmers involved in some kind of contract farming. At least 60% of the produce of farmers meets quality standards. 5000 farmers receive Technical Assistance in maize production</p>	<p>Average yield of 3.2 Mt/ha from the 6,465 farmers engaged in PY1 observed.</p> <p>60-70% increase in quality standards of produce from farmers reached observed.</p>
Limited access to appropriate machinery and equipment and services such as land preparation, pest and weed management	<p>2000 farmers have access to mechanized land preparation services</p> <p>30 private (pest control)</p> <p>Service providers linked to input providers, trained and delivering services</p> <p>2000 farmers have access to harvest and post-harvest services</p>	<p>More than 1000 farmers provided with access to mechanized planters with the provision of 25 manual, 5 motorized and 2 tractor-drawn pneumatic planters during reporting period.</p>
Limited access to finance	<p>2,000 farmers access input finance</p> <p>10 firms receive equipment loans</p>	<p>2 nucleus farmers, (Kharma farms and BASSA), are being assisted to acquire inputs</p>

Constraints in the value chain	Expected outputs/outcomes	Achievement in reporting period
		and machinery loans for the production of maize. Input financing and equipment loans actually acquired will be monitored and shared in next reporting period.

Key challenges and mitigation action taken

Expectations among selected actors of direct physical support remains a major challenge. This makes it difficult for such actors to appreciate the facilitation approach of the ADVANCE strategy. Mitigation includes ensuring clarity, consistency and transparency in all messages to such actors, and demonstrating value added of non-financial contributions by ADVANCE (intangible interventions like relations building, investments in innovations, etc.” We have shared information on the project’s facilities and tools (Grant facility, Technical Assistance through the volunteer program etc.) with selected actors and believe that they will appreciate this as a form indirect financial support.

There remains a high risk aversion, especially among smallholder farmers’, resulting in late/non adoption of innovations to take advantage of emerging opportunities. We are addressing this through on-farm demonstrations where benefit-costs analyses are shared with the actors to ensure they understand the benefits. Knowledge dissemination through training, field days and farmer/farm visits were also used towards addressing the slow/low adoption of innovations.

Financial institutions show reluctance to extend credit directly to farmers due to the high loan default rate among such category of actors in the past. ADVANCE is encouraging loan administration through aggregators, who seem to be more efficient/trusted by bankers. Aggregators have given credit to farmers in kind, (in the form of fertilizer, seeds and plough services), and have evolved several other social/informal means of recovery, something that financial institutions have not yet determined how to replicate.

Lessons Learned

3. Seed introduction, in order to have a positive impact during the life of the project, must be pursued by supporting CSIR trials and the introduction of improved but not yet fully certified seed varieties through producer networks like Masara N’Arziki
4. Many maize value chain actors are operating at their management capacity ceiling. In some cases, significantly scaling up will require greater investment in improving management capacity by aggregators, processors and industry associations. The ADVANCE team will source more long term volunteers to strengthen the management capacity of maize processors in the remaining semesters
5. Development partner and donor activities can unwittingly diminish incentives to invest by value chain actors. One ADVANCE partner withdrew her grant request after receiving a larger subsidy from another project. Another input company stopped investing in the provision of private extension messaging when a fully subsidized alternative was offered. ADVANCE will continue to prioritize sustainable approaches that support and incentivize

investment by the private sector, and will encourage other development partners to follow similar principles.

3.2 SOYBEAN

Table 3. 3: Summary of Soybean Value Chain Activities (minor season), Reporting Period Oct 2010-March 2011



During the reporting period, the ADVANCE program worked with a total of six soybean supply channels in the reporting period. Included in these channels are private sector participants made up of 3,621 farmers, 76 farmer groups, 12 aggregators and 10 processors. The reporting period was favorable for soybean producers but challenging for processes, especially those dependent on imports, as global prices reached decade highs.

The ADVANCE team is dedicated to increasing the productivity and competitiveness of the soybean value chain. Analysis conducted during the reporting period clearly demonstrated that with proper plant density, soybean production can be profitable even for small farmers. Proper planting density, however, requires mechanized planters and while the ADVANCE soybean team is assessing manual planters, profitable small holder soybean production is more likely if farmers are able to produce on contiguous plots large enough to pull a PTO driven planter.

During the reporting period, the soybean team evaluated year one activities and outcomes and refocused its strategy. The ADVANCE soybean *value* chain strategy is focused on:

- *Production:* introduction of mechanized planters through grants, collaboration with MoFA to train farmers on GAPs, and links with private operators to provide threshing services led to improvement in yields and minimization of post-harvest losses.
- *FBO and nucleus farmer capacity building* to encourage economically viable private block farms and more efficient access to inputs and aggregation of product

SOYBEAN AT A GLANCE

No. of Actors Reached in Reporting Period

Farmers reached	3621
FBOs	76
Aggregators	12
Processors	10
Buyers/End markets	12

Production Results

Area cultivated (Ha) = 10, 208.6

Yield (MT/Ha)

Expected yield: 1.2

Actual yield: 1.1

Output (MT)

Expected output: 14,416.6MT

Actual output: 9912.9MT

Output attributable to ADVANCE:
6939.09, (70% of the actual output)

Commodity purchases (MT)

Aggregators: 3,367.1 MT

Processors: 1,893 MT

Buyers: 126 MT

Open market: 2,524 MT

Total: 7,910.1 MT

- *Multi-Stakeholder relationships* Strengthening buyer, aggregator, input and equipment service provider and producer relationships builds off of project lessons learned from the rice and maize sectors and is the most effective means to facilitate producer access to productive inputs. With scale-up, access to financing will be required. During the reporting period, the soybean team facilitated and monitored 12 multi-stakeholder relationships for mutual compliance.

The soybean team carried out activities in all the above areas during the reporting period.

Table 3. 3 summarizes significant field activities, outcomes, and results from the reporting period. Given the production calendar, activities in the soybean value chain during the reporting period focused on harvest and, post-harvest related issues.

Even though there were early indications that the local demand for soybean would be high, (due to reports of disasters and crop failures in high producing countries like Brazil and Australia), many local processors were unable to respond with appropriate mitigation plans. Ghana nuts, for example, could not implement a planned own-farm cultivation of about 1500Ha due to a lack of timely access to finance.

ADVANCE provided cost-share grants to 4 nucleus farmers (UpWARD, Kharma Farms, PEE farms and Kobbiman Farms) to purchase tractors and planters during the reporting period. Twelve smaller aggregators/farmers/FBOs were assisted with access to credit from several value chain actors (Vestor Oils and Golden Web Co. Ltd) required to purchase produce and tarpaulins to ensure high quality of threshed produce.

In the reporting period, 12 MOUs were developed, discussed and signed between various VC actors. Ten of these, (see Box 1), were adhered to by farmers in spite of some challenges including price of the produce. At the peak of the sales period, (March, 2011), soybean prices rose to an all-time high of USD 430-530/Mt. on the Techiman and Tamale markets. This attractive price contributed to non-adherence to agreed prices in contractual arrangements of some supply chains. Staff had to attend to two conflicts related to breach or attempts to breach contracts within identified supply chains.

Key Activities carried out during the reporting period include the following;

A Study: ‘Soybean in Ghana’

During the period under review, a consultant was hired to undertake a study to review the soybean sector in Ghana. This study resulted in useful recommendations on seed supply, use of inoculants, liming and fertilizer use, production practices, post-harvest handling, commercialization and processing for soybean in Ghana. These recommendations are being taken into consideration in planning the activities and interventions for the second half of FY2011.

Machinery Provided to Enhance the Competitiveness of Soybean

Twenty five manual, five motorized, and two tractor-drawn planters as well as two combined harvesters were provided as cost-share grants to an FBO, two nucleus farmers, and PEE Farms and Kobbiman Farms respectively to enhance their work with out-growers in the coming season.

Bringing More Actors into Dedicated Supply Chains

ADVANCE has continued to increase project coverage and in turn the impact of the project on soybean value chain by scoping for new actors and related service providers. During the current reporting period, 20 additional nucleus farmers, two new aggregators and one processor were identified from the three northern regions to work with ADVANCE as from PY2011.

Other key actors in the soybean industry contacted during the period and a brief on what we did with them include:

- **N2AFRICA**, a large scale, science research project focused on nitrogen fixation for smallholder farmers growing legume crops in Africa. N2Africa is reportedly making 32% increases in yield of soybean fields treated with inoculants in Ghana. N2 Africa's goal of reaching 6,000 soybean farmers this year is in line with ADVANCE's overall goal to increase the competitiveness of the commodity. ADVANCE is working with N2AFRICA to set up demonstrations to show the efficacy of inoculants during FY2011.
- **SolarHarvest** and **ScanFarm**. These are agricultural companies which were originally set up to produce biofuel but have now taken on maize production. ScanFarm reportedly has a 51% stake in Ghana Nuts, our key end market in soybean supply chains, and plan to cultivate about 400ha of soybean in June 2011. ADVANCE is working with these companies as nucleus farmers to provide services to nearby smallholder farmers to cultivate of soybeans more efficiently.



Education on the Use of Farm Budgets for Effective Pricing of Produce

Approximately 1,218 farmers were trained on how to analyze their productivity using templates developed by ADVANCE. This training has significantly enhanced pricing and timing of sale of soybean this season by farmers and aggregators. The training is designed to address the inefficiency of production at the farm level, which has led to high, non-competitive pricing with farmers leading to low margins.

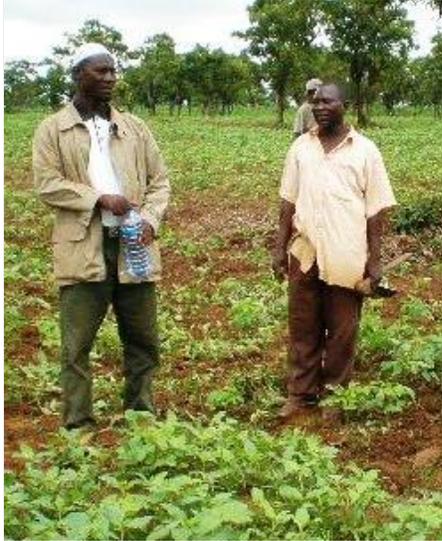
Challenges and Mitigation Strategies

1. Compared to other food/cash crops, the use of soybean in the farming systems of the areas of production is very limited. Smallholder farmers, who form the majority of producers, find it highly risky to choose to cultivate or invest in upgrading of the soybean which -- when not bought by an investor -- cannot be used by themselves. Assuring

farmers of end markets through stakeholder meetings at which the owners of these markets pledged to buy the produce often served as the motivation to crop soybean.

2. Availability of good quality and pure seed remains a general challenge, particularly for the smallholder farmer who has no means of importing improved seed from elsewhere. Some large users of soybean imported seed from abroad and ADVANCE will continue to encourage this, especially for end markets and nucleus farmers who will pass on this seed to smallholder farmers. In the longer term, ADVANCE will continue the dialogue with research institutions towards finding sources of certified seed.
3. Mechanising many of the drudgery operations (such as sowing to the recommended rates, harvesting and threshing) is a priority for the majority of soybean small holdings. We have started experimenting with small manual planters and will continue to encourage input dealers to do trials with these small machines for an eventual mitigation to the challenge.

You Win, I Win



Mujib, left, with the group leader of the Bimbilla Outgrowers

“I was a mere farmer who never thought of going close to financial institutions. However, with advice from ADVANCE I gained the courage to approach financial institutions and have benefitted a lot. Initially I was farming for the sake of farming because I did not have any plan, but I now have a business plan. I am no longer thinking of just farming soybeans but making it possible to process the crop in our communities in the near future.”

ADVANCE has linked me to buyers who now chase me to buy my production. My outgrowers are happy about the business and proud of our collective achievements. Thank you ADVANCE for the opportunity.”

Mallam Husein Muhib, Owner of Kharma Farms Enterprise

Telling Our Story

U.S. Agency for International Development
Washington, DC 20523-1000

The number of farmers participating in the outgrower scheme of **Hussein Muhib**, owner of Kharma Farms Enterprise, rose from 140 in 2009 to 456 in 2010. This resulted in a fivefold increase in soybean production as well as increases in yield rate. This may only be the beginning.

In 2009 Muhib cultivated a total of 70 acres of soybeans on his own farm and provided plowing services for 140 other farmers. He aggregated a harvest of 94MT, which he sold to Ghana Nuts Ltd. and other smaller buyers.

The Kharma Farms model of producing soybeans aligns with the USAID ADVANCE- project’s design for transforming the supply chain. The project, implemented by ACDI/VOCA, addresses efficiencies in the value chain.

In this case out-growers were chosen based on Muhib’s experience as an evening school teacher. They were mostly parents of his pupils who were unable to purchase basic school supplies such as exercise books, pencils, etc.

Kharma Farms offered tractor services to plow one acre for any interested parents who wanted to be part of this outgrower scheme. Each member of the scheme also got seed from Kharma Farms. Repayment was to be a 100kg of soybeans at harvest from each outgrower. This left enough to compensate for the seed and tractor services as well as the children’s school supplies and more. Outgrowers had the option of selling their remaining harvest to Muhib or other buyers. In their first year of operation, participating families were impressed at soybeans’ profitability, earning on average GHC650-780/acre, and many adopted it as their main income-earning crop from then on.

In 2010, upon learning about Muhib’s business model, USAID’s ADVANCE project linked him to Royal Danemac, a processing facility in Kumasi and helped arrange a loan of GH¢13,000.00 (US\$9,000.00) from ACDEP, an NGO network in northern Ghana. With this amount, Muhib could provide additional plowing services for the 456 outgrowers to produce 170MT of soybeans. The average incomes of participating outgrowers also grew to GHC800-1200 per acre.

3.3 RICE

Having successfully established supply chains in the ADVANCE rice zones, particularly in southern Ghana, the project expanded assistance to production areas in mid and northern Ghana to increase production volumes and meet demands from major buyers identified as partners. We also focused on assessing market opportunities for parboiled rice in the sub region from production areas in northern Ghana. Activities were carried out to strengthen relationships and improve the performance of actors in identified supply chains.

Over the reporting period, much of the minor season rice production was from irrigated fields at Asutsuare, Dawhenya, Ashaiman, and Afife, and these provided most of our production and output figures. At Okyereko in the Central Region, farmers were unable to crop their fields in the minor season due to a broken irrigation dike.

During the period, the number of actors in our assisted rice value chains increased to 3,666 across our intervention zones made up of 3,571 farmers, 46 aggregators, 32 buyers and 17 Millers, Table 5.3.1 below summarizes the significant actors, outcomes and results achieved during the reporting period.

The rice commodity team reaffirmed the importance of the import competition channel as the principal market channel driving investments in upgrading the rice sector. There is considerable unmet demand in Nigeria for parboiled rice, but political barriers to free export of Ghanaian rice restricts this as an opportunity.

Access to improved seed and inputs, low levels of mechanization, particularly of rice threshing and poor milling quality, and weak relationships between rice farmers and firms willing and able to invest in increasing smallholder rice productivity are the principal constraints to growth and investment in the rice sector.

The value chain/competitiveness approach used by the ADVANCE team is based on identifying actors with the incentives to overcome these constraints, and facilitating the investment and the commercial relationships among these actors and service providers to overcome these constraints. Table xxx on the next page

Some statistics for the reporting period

Farmers reached – 3,571

FBOs - 93

Aggregators - 46

Buyers-32

Millers -17

Production Results

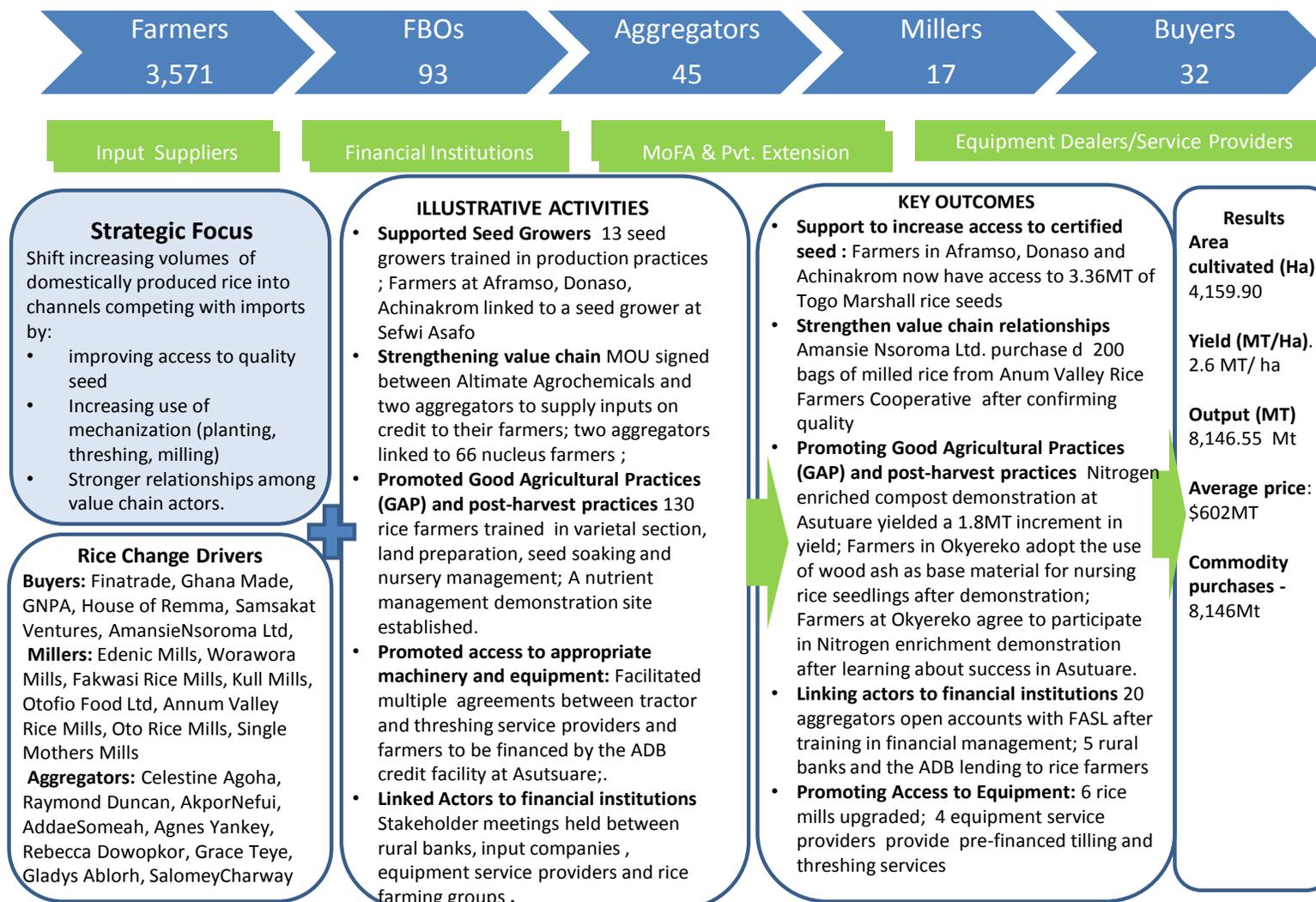
Area cultivated (Ha) = 4,159 Ha

Output (MT) 8,146MT

Commodity purchases (MT) 8,146

Yield: 2.6MT/Ha

Table 3. 4: Summary of Rice Value Chain Activities (minor season), Reporting Period Oct 2010-March 2011



Availability of Seed

ADVANCE supported the training of 13 seed growers by rice seed expert Cletus Achaab at Asutsuare and Akuse. Topics treated were: seed selection, cultivation, harvest, conditioning and processing, storage, quality control, certification standards, distribution and marketing.

In the Ashanti Region, farmers at Aframso, Donaso and Achinakrom were linked to a seed grower at Sefwi Asafo to purchase 3.36Mt of Togo Marshall seed specified by Thonket Ltd, the buyer in the supply chain.

Access to appropriate machinery, milling equipment and land preparation services

Farmers who benefitted from a credit facility from the Agricultural Development Bank (ADB) at the Kpong Irrigation Project also received land preparation services from Andynomafo Tractor Services. ADVANCE worked with the tractor service provider and ADB on a payment model for services rendered. In total, 280ha belonging to 200 farmers were ploughed for the minor season at a cost of GH¢200 per hectare. ADB has credited the account of Andynomafo Tractor Services with an amount of GH¢56,000. Prior to this agreement, the tractor service provider had difficulties with payment for services by farmers. Similarly, farmers from the Ashaiman Irrigation Farmers' Cooperative Society who supply paddy to aggregator, Salomey Charway had 14ha of rice fields ploughed by tractor service provider, Mr Lopke. An agreement and MOU were signed between the agricultural committee of the Ashaiman Irrigation Farmers' Cooperative Society and Mr Lopke for ploughing services and for upfront payment.

Farmers from the Ashaiman Irrigation Farmers' Cooperative Society who supply rice paddy to aggregator Salomey Charway had 14Ha of their rice fields ploughed by Mr Lopke, a tractor service provider. We facilitated the agreement and signing of an MOU between the agricultural committee of the Ashaiman Irrigation Farmers' Cooperative Society and Mr Lopke to render ploughing services to the farmers and receive payment up front.

Six rice millers have been approved for milling upgrades. In addition the ADVANCE team is working with Prairie Volta Ltd, and MCC-MIDA to provide PVL with a \$1 million milling upgrade in exchange for PVL repayment in-kind with \$1million of de-stumping and seed distribution services to over 300 farmers and 600 hectares.

Value chain relationships

ADVANCE facilitated the signing of an MOU between Altimate Agrochemicals and two aggregators, Agnes Yankey and Gladys Ablorh, to supply inputs on credit to their producers for a four month-period. This agreement was made easier because Altimate Agrochemicals received full payment for USD9,066 as cost of inputs provided on credit to an aggregator last year.

To demonstrate their commitment to invest in their suppliers, two ADVANCE-assisted aggregators, Kwame Somea and Hawa Seidu, accepted to fund demonstration farms at Kansakrom and Aframso in the Bibiani and Mampong districts respectively, to enable their producers to improve on their agronomic practices, increase yields and quality of produce.

Cooperation was also encouraged among value chain actors who perform similar functions. Aggregators such as Bertha Adzakpa who do not have large markets and capacity to purchase

huge volumes of paddy were linked to larger aggregators with bigger purchasing capacity. Bertha is now working with a larger aggregator (Celestine Agoha) and supplying her with 1Mt of paddy every fortnight.

Four new supply chains are being developed for buyers who require assistance to improve their supply sources. An approach adopted is to show case better performing supply chains as examples for new actors. For instance, Samsakat Ventures Ltd has been presented as an example for Amansie Nsoroma Ltd to study. Amansie Nsoroma Ltd met with the Anum Valley Rice Farmers Cooperative proposed by ADVANCE and has promised to work with and buy their produce. Quality specifications have been discussed and already Amansie Nsoroma Ltd has purchased 10Mt of milled rice from the producers to show commitment.

Good Agricultural Practices (GAPS) and post-harvest practices

ADVANCE also worked with two aggregators, Rebecca Doworpkor and Agnes Yankey, to train 130 farmers from the Osudoku Agricultural Cooperative Society at Dzigbordi and Akuse in good agronomic practices. A rice production expert, Moses Hammond was contracted to undertake the training through a cost sharing arrangement with the aggregators. Training topics were: seed varietal selection, land preparation, seed soaking and incubation, nursery management, transplanting, nutrient management, water management, weeds management and pest and disease control.

Market demand for parboiled rice in Nigeria

A recent E-ATP report on parboiled rice in Ghana indicated that Nigeria has a deficit in parboiled rice of 1.6 million Mt, presenting a market opportunity for parboiled rice from Ghana. The findings also showed that major Nigerian buyers such as IRS rice mills and Olam Ltd Nigeria, who import parboiled paddy rice from Thailand, are interested in accessing such supplies from Ghana. ADVANCE is currently working to determine cost implications and economic analysis of this venture and also identifying willing aggregators and buyers to take advantage of this opportunity.

Similarly, 70 farmers (41 males and 29 females) from the Okyereko Rice Irrigation Cooperative were trained in the use of gravity suspension of seed and wood ash to establish seedling nurseries. Based on successful demonstration of nutrient management practices at Asutware last year, another demonstration was undertaken at Okyereko to equip farmers with relevant skills for the coming cropping season.

Access to finance

Relationships built between First Allied Savings and Loans Ltd (FASL) and aggregators who benefitted from business loans is growing due to high loan repayment rates. As a result, the bank has invested in training 20 aggregators from Asutware in financial management with support from ADVANCE. This training is expected to assist the aggregators to improve financial management, recording of transactions and generally improve their bank relations. Following the training, all the aggregators have opened bank accounts with FASL. ADVANCE has been working to engage more financial institutions to increase the options available to rice value chain actors. As a result, meetings to engage the Dangme Rural Bank to provide financial services to farmers at Dawhenya, Asutware and Ashaiman are proving successful.

ADVANCE worked to engage more financial institutions to increase the options available to the actors in the rice value chain. A series of meetings were held with the Dangme Rural Bank to provide financial services to rice farmers at Dawhenya, Asutsuare and Ashaiman.

Challenges

Side selling threatens willingness of aggregators to invest in production. A well-performing aggregator (Agnes Yankey) lost about USD4000 as a result of side selling by five farmers at Asutsuare. Agnes is interested in strengthening her supply chain, so she pre-financed rice production for the minor season last year. However, some of her suppliers side sold their paddy, and this threatened her willingness to continue building her relations and commitment to the farmers. This situation affirms the position of some aggregators who have also had similar experiences and therefore do not want to develop formal relationships with their supply base.

Broken irrigation dike limits production of Okyereko farmers to one season Okyereko Irrigation Project had its irrigation dyke broken by flood waters from heavy rainfall last major production season. In most cases, fields get flooded due to inability to regulate the amount of water running through the production areas. To date, the Irrigation Development Authority, which is responsible for providing maintenance to the irrigation site, has not been able to fix the broken dyke. The situation will therefore made it impossible for the farmers to maintain two cropping seasons, and reduce them to one cropping this coming season.

Difficulties in finding a ready buyer for 615MT of rice paddy at KIP is causing ADB to reconsider financing rice production at Asutsuare The ADB took delivery of over 615Mt of paddy from farmers at the KIP as repayment for loans disbursed to them for production. However, the bank has been unable to find buyers for the paddy over the past six months and this is piling up warehousing costs. This experience is causing the bank to reconsider financing rice production in the area.

Lessons Learned

An important lesson in making offers to value chain actors is the need to also point out potential associated risks and not only the benefits. We have learnt that when different actors are linked to work together for their own good, they sometimes blame facilitators for the slightest challenges they face in working together. An example is when an aggregator was introduced to an input dealer and defaulted in payment for agro-inputs collected on credit for her producers. The input dealer persistently called ADVANCE demanding payment for the inputs as linkage to the aggregator had been encouraged by us. We must make clear that while we can encourage transparent and ethical practices that build reputations as trustworthy individuals and entities, all inherent risks of commercial relationships must be borne by both sides of a transaction.

3.4 FRUITS

In the period under review, the ADVANCE project worked with private sector participants made up of 4,450 actors in the fruits sector as follows including 4,340 farmers, 69 Farmer Groups, 20 Aggregators, 21 Processors and buyers. Table 3.4 below summarizes the significant actors, outcomes and results achieved during the reporting period.

Four factors were identified as the major constraints to transformation in the fruit sector during a strategic assessment and planning session conducted by the ADVANCE fruits team. This strategic assessment was informed by a recently completed assessment of fruit processing companies funded by ADVANCE. Driving constraints to growth include:

- Weak business and operational management capacity of processors
- Weak backward linkages from processors to producers with rent seeking behavior practiced by both sides
- Low use of GAP regarding pest control for mango and citrus; low availability of technologies to better control for disease
- Insufficient supply of disease free genetic material to support re-emergence of the smooth cayenne pineapple industry

The value chain/competitiveness approach used by the ADVANCE team is based on identifying actors with the incentives to overcome these constraints, and facilitating the investment and the commercial relationships among these actors and service providers to overcome these constraints.

Some statistics for the reporting period

Farmers reached – 4,340
FBOs - 69
Aggregators - 20
Processors/buyers - 21

Production Results

Citrus

Area cultivated (Ha) = 4280 Ha
Output (MT) 2,927MT
Commodity purchases (MT) -2927MT

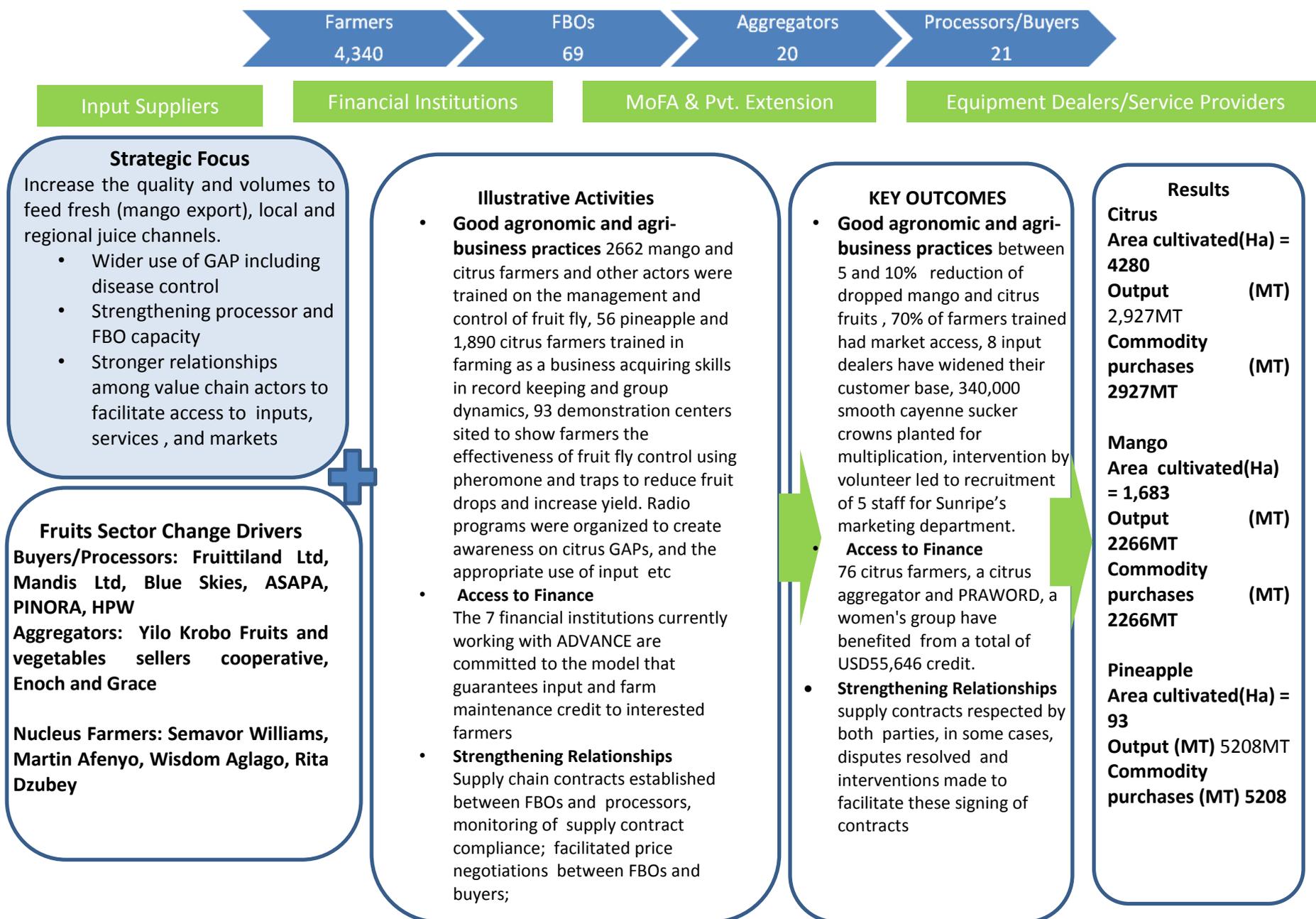
Mango

Area cultivated (Ha) = 1,683
Output (MT) 2266MT
Commodity purchases (MT) 2266MT

Pineapple

Area cultivated 93 Ha
Output 5208MT
Commodity purchases 5208MT

Table 3. 4: Summary of Fruit Value Chain Activities (minor season), Reporting Period Oct 2010-March 2011



The setting up of Fruit Fly trap demonstration sites was one of the major activities carried out during the reporting period to combat fruit fly infestation in all the mango and citrus growing areas. This was part of efforts to improve the quality of citrus and mangoes produced using the three prong approach of sanitation, trapping and protein bait sprays. Collaborating with EMQAp, MoFA, GTZ and the Ghana National Fruit Fly Control Committee, 8 representatives from ADVANCE participated in a three day training workshop and were equipped with new strategies, skills and knowledge to effectively assist farmers to address fruit fly attacks currently suffered by the farmers in our operational areas.

During the reporting period, 93 demonstration sites have been set up in 113 communities across 32 districts in Ashanti, Eastern, Volta, Greater Accra and Central regions. In all about 2,000 citrus and mango farmers adopted and benefited from skills in controlling fruit flies with special emphasis on stop mating pheromone blocks technology currently promoted by an input dealer, Splendid Agro Products. ADVANCE acquired the block traps for the demos from Splendid Agro Products and collaborated with him to train and set up demonstration sites in 113 selected communities.

Fruit flies attack is one of the major setbacks against high yields in most citrus and mango growing communities that ADVANCE operates. The demonstration sites have exposed the farmers to the efficacy of the technology. As a result, 1,092 traps were set on 202 acres of selected farms trapping 2.4 million fruit flies. Weekly monitoring has shown that there has been between 5 and 10% reduction of dropped fruits. Farmers are therefore excited to acquire the traps and increase production in the coming season. Through further discussions, Splendid Agro Chemicals has agreed to give discounts to FBOs that make bulk purchases of the fruit fly traps for their members. The results of the demonstrations were broadcasted by radio, using various FM stations located in the communities largely informing farmers about the efficacy of the traps and consequently leading to adoption.

3.4.1 MANGO

To meet market demand of mango and to improve quality and quantity, support was extended to new production areas in the BrongAhafo Region. A scoping exercise to identify potential actors within the mango value chain took place during the period. In addition to 15 large scale farmers identified, 196 commercial mango farmers (m=161, f=35) belonging to seven FBO's in the Techiman, Kintampo, Atebubu, Ejura and Nkoranza districts were identified and are benefitting from the project activities especially on fruit fly control to improve fruit quality for both export and processing. Collaborating with the Ministry of Food and Agriculture (MoFA) and the GTZ the farmers have been trained on how to make good presentations on Radio Stations for raising of awareness on the Fruit Fly menace and also the establishment of pheromone demonstration plots in selected farmers' fields. A processor, HPW Ltd who is ready to buy mango from these FBO's for drying and export has been identified and linked to them.

A number of value chain meetings were held between two processors, Sunripe and Blue Skies and the three mango FBOs in the Dangme West, YiloKrobo and ManyaKrobo Districts. These meetings were intended to strengthen their relationship and also establish a supply contract between the processors and the producers. The meetings also offered the processors the platform for them to disseminate their specifications for buying fruits, and pricing regimes. This resulted in the haulage of 988 MT of mangoes to the processors valued at USD333.3/MT.

Mango trees in the Volta Region however have not fruited in the last 3 years. This year however saw most Mango farms producing fruits at various stages. Within the period under review over 400 mango farmers have been identified but the project is working effectively with 162 which is made up of 15 women and 147 men. The main activities carried out with them were promoting GAPs, building market linkages and relationships among various actors such as the producers, processor (Kingdom fruits) input dealer, service providers like MOFA and ATOMA and carrying out of various demonstrations on fruit fly prevention. Through that, 2 input dealers, Doelyne and Victory Agro have been connected to Splendid Agro Chemicals to buy and make the stop mating pheromone traps nearer and available to farmers for replication of the successes of the demonstrations established. Most farmers have acquired traps on their own and started working on their farms again to ensure that the farms are cleared and huge canopies well-trimmed.

Challenges

1. Non-adherence to contract agreement by Sunripe due to inability to procure and pay promptly as agreed in the supply contract. This has engendered mistrust and weakened the value chain making facilitation strained and difficult. FBOs have hence discontinued fruit supply to Sunripe, the ADVANCE fruit team is discontinuing its support to Sunripe, pending considerable demonstration of commitment to upgrading by Sunripe management.
2. Although the fruit fly demonstration has shown the potency of the traps, what remains is increased adoption of the traps by farmers before the major season. Efforts will be made to encourage the FBOs to purchase the traps in bulk in order to ensure that most farmers combat the flies in unison especially farmers who have large sized farms who are not able to cover with the recommended number of traps.
3. It is very difficult using the motor bikes as a means of transport in the dry season to reach some of the farms especially in the Volta Region because most of the road in the zone is under construction.
4. Expectations of some of the actors are very high especially concerning the grant issues.
5. The banks are moving slowly and cautiously in building the required trust in the model. The expectation is that with the availability of market for the commodities and moral guarantee from ADVANCE, financial institutions will hasten credit facilities to the value chain actors and farmers after the current season. The banks require that buyers, input firms and processors commit more to the working with the banks to provide security for credit offered to farmers.

Lessons Learned

1. While supply agreement is a good step forward in relationship building between processors and producers, it is not an end in itself because working capital constraint has affected the ability of some processing factories like Sunripe Foods Ltd to procure and pay according to the terms agreed in the supply contract. Therefore the installed capacity of processing plants may not translate into ability to procure process and pay for fruits promptly unless its internal operational challenges are dealt with.

2. The unwillingness of the lead processing firms to do full disclosure, constrains our ability as a project, to undertake full due diligence to assess their ability to procure fruits and pay promptly as specified in the supply contract.
3. There is the need to identify more processors and have them linked to the FBO's to help strengthen the chain. This is because most of the mango produced is either processed for export or local consumption as they are seen as the key actors that drive the mango value chain.
4. Entrepreneurs are willing to take advantages of opportunities. For instance, an aggregator, Samuel Kwabla, took advantage of excess supply of mangoes in the Somanya area as the processors and exporters could not lift the fruits fast enough. Samuel entered into an informal supply relationship with Integrated Tamale Fruit Company (ITFC) resulting in the movement of 240 MT of mangoes to Tamale for drying, creating 8 weeks employment for 12 young workers.

3.4.2 CITRUS

ADVANCE has been particularly active in the citrus value chain within the reporting period. This is the first citrus season since our engagement with the key actors in the value chain.

During the reporting period, within all 17 districts in our operational areas in the Eastern, Central and Ashanti regions, ADVANCE engaged extensively with MOFA Regional and District Directors and extension agents in all our activities. 3 district directors and 12 AEAs have participated in three commodity based value chain meetings in the Ajumako, Assin North and Assin Central and Atiwa districts.

In the above operating areas, 3,182 citrus farmers, 44 FBOs, 9 input dealers, 3 buyers, and 3 processors have been linked by ADVANCE to contribute to and mutually benefit from increased growth in the citrus industry. Processors in the citrus value chain have a demand of 283,000MT/year. Within the reporting period, 115,000 MT has been met although the season has not yet ended and the minor season is also on the way. Currently farmers are producing at an average yield of 4.1MT/ha, making gross margins of USD195.5. ADVANCE has reinforced interventions such as Farming as a business, Fruit fly control and GAPs to improve crop yield in the citrus industry and has put in measures to facilitate access to input and services to increase yield to an average of 6.5MT/ha, with a gross margin of USD390.00 instead. To date, 1,890 citrus farmers benefitted from business development training sessions. They acquired such skills as record keeping, group dynamics, fruit fly control and marketing to enhance their farming business. As a result of the linkages facilitated by ADVANCE 1,894 citrus farmers had market access and sold to buyers in their respective value chains and 8 input dealers continue to widen their customer base. These input dealers benefitted from huge platforms created at our value chain workshops to interact with their customers.

As a strategy to enhance financial credit to key players in various value chains, ADVANCE encourages farmers and other value chain actors to establish and maintain accounts and good relationships with financial institutions. The value chain actors are encouraged to open bank accounts to facilitate payments through the banking system. Most of the FBOs currently make monthly contributions to their group accounts to qualify for credit facilities. Members of FBOs are particularly encouraged to open accounts with Opportunity International Loans and Savings limited because of their readiness to offer special credit facilities to citrus farmers. 72 citrus farmers have benefitted from a USD18,347 maintenance credit facilities from South Akim Rural Bank to properly manage the loans the farmers were further trained in such areas as Group Dynamics, Farming as a Business, Financial Literacy and

Accessing and Managing Agricultural Credit Facilities. Also the 7 financial institutions that are currently working with ADVANCE are committed to the model that guarantees input and farm maintenance credit to interested farmers at relatively lower interests. Aggregators and buyers are also committed to make payments for purchases from beneficiary farmers through the contacted banking institutions. Within the reporting period 76 citrus farmers, one citrus aggregator, and PRAWORD benefitted from a total of USD55,646 credit. This comprises USD22,313 for citrus farmers, USD16,667 for the citrus aggregator and USD16,666 for PRAWORD.

Three district value chain meetings were held in the Central region in the Ajumako-Enyan-Essiam, Assin North and South and the Atiwa Districts in collaboration with GTZ and the MoFA central region directorate. Over 200 major citrus value chain actors profiled in the districts had the opportunity to deliberate on the citrus value chain. They represented farmers and farmer based organizations (FBOs) from 131 communities, processors - Fruittiland, PINORA, radio stations - Obuoba FM, Hope FM, Input dealers - Assopiah Agrochemicals, KAKs Agrochemicals, Dizengoff Ltd and Splendid Agrochemicals, banks - Opportunity International Loans and Savings Ltd, Enyan Denkyira Rural Bank, ProCredit Ltd, Atiwa Rural Bank, Traditional heads and MoFA. All the actors indicated their contributions to the value chain and sought clarification from one another on key issues affecting their activities and the industry at large such as lack of reliable market, inability of processors to honor supply agreements, unwillingness of banks to give credit to farmers, poor farm maintenance culture and damaging effect of fruit flies. The meetings also afforded the actors opportunity to establish business links and also share experiences. Obuoba FM for instance later on air informed listeners about collaborations with ADVANCE and Golden Stork an input dealer, in running their AkuafoMmbo Show where farmers can participate in live radio discussions of GAP and related topical issues through text messages. Some of the farmers confessed they were not aware there were so many buyers and aggregator who are ready to buy their citrus. They considered the meetings a very good platform for them to do business. ADVANCE encouraged all the key actors and MOFA to support similar such value chain meetings quarterly. As a result of the workshops, a citrus value chain committee has been formed. The committee meets every month to deliberate on issues affecting the industry.

SMSGH has been linked to Pinora to develop an SMS platform. The SMS platform is being used by Pinora as an external and internal communications system in order to send out and receive information to famers and field staff. The PINORA team also participated in a one day Training of Trainers (TOT) session that benefitted their field officers and six farmer groups currently enrolled in the farmer school at PINORA. Other citrus farmer groups in West Akim, Kwaebibrem and Birim districts will be enrolled later in the year to be trained on fruit fly control using sanitation, protein Bait and stop mating pheromone blocks technology. Splendid Agro Products is currently collaborating with ADVANCE to promote the technology. A one acre demonstration site was set up to serve as training ground for the groups. ADVANCE however facilitated a meeting between PINORA and 21 members from Dorkorkyiwa Citrus Farmers group which will enable the group to be part of the next batch of farmer to attend the farmer school.

Within the Abura-Asebu-Kwamankese district the Project worked with 1500 farmers (500 lime farmers and 1000 Citrus farmers). Facilitating the signing of the supply chain contract between Fruittiland and CIGMA in the form of an MOU formed the basis for CIGMA's relationship with Fruittiland. The MOU was to ensure that the relationship is not compromised but strengthened to enable the citrus farmers at Abura, Asebu Kwamankese District of the Central Region participate in the development of Fruittiland citrus supply value chain. Together with LIGMA, a total of 1,361MT valued at USD523,604 was sold to

Fruittiland and another processor, Mandis. This was less than the target of 8,000MT of fruits for processing and came about because of grievances raised after the signing of the MOU between Fruittiland and CIGMA. These were mitigated leading to a further supply of 155MT of fruits by CIGMA.

ADVANCE also facilitated business to business relationship with Mammud an aggregator and also a member of the Aflao Orange Sellers Association and PINORA. Currently the association aggregates 550 MT of citrus for PINORA and is willing to aggregate for Fruittiland also.

Within the reporting period 70 citrus farmers including 10 women and 60 men from Obuasi Cooperative Citrus Growers and Marketing Association benefited from an agro input promotion organized by Chemico Agro Chemicals at Obuasi. The farmers indicated that it was an opportunity for most of them to be introduced for the very first time to agrochemicals that were specifically developed for citrus. The Farmers took advantage of the occasion and acquired genuine citrus specific herbicides and foliar fertilizers. Dizengoff was also linked to citrus farmers within our operational area and they participated in the value chain meetings to introduce their products to farmers.

Within the reporting period 72 farmers purchased USD2,291 worth of input from promotions held by Tails and Details Agro Chemicals for three FBOs. The chemical purchased included Citroboost, Multi-K, Deltapax and Round-up from Dizengoff. The farmers received the input directly from the input dealer as part of the loan package from South Akim Rural Bank.

Fighting the Fruit Fly menace

Fruit Flies are perennial pests of fruits affecting Mangoes, Citrus and Vegetables amongst others. They cause economic damage to fruits and the farmers lose about 70% of the fruits on the citrus trees. These huge losses incurred by the farmers affect the revenue that they get after the fruiting season.

As part of the ADVANCE Project's goal of helping to fight the Fruit flies in the fruit industry in the country, it collaborated with the National Fruit Fly Committee to set up fruit flies Demo sites in the ADVANCE operational zones.

On the whole, 93 Fruit flies Demo sites were established on a total of 202 acres in 113 communities across 32 districts. An average of 10 traps was used on each 2-acre citrus farm. The establishment of the Demo sites involved the hanging of Pheromone Traps and the strict adherence of farm sanitation.

The demo sites facilitated the organization of farmer field days on the demo sites to train farmers on site in the use of the pheromone traps and farm sanitation for the control of fruit flies. A total of 2000 farmers were trained during these farmer field days. It brought together two of the leading agro-input dealers in the fight against fruit fly. The trainings were facilitated by Mr. Ransford Attatsi of Splendid Agro Inputs and Mr. Wilfred Tse of Chemico Ghana Ltd. The training helped spread and instill the need for all actors to fight the fruit flies together. A total of 1092 traps were set, trapping over 2,382,434 fruit flies which have since been sent to committee for analysis.

In a study carried out by Mr. Ransford Attatsi, the following outcomes were realized:

TREATMENT	Percentage of Damaged Fruits	TOTAL YIELD	
		m/tons per acre	m/tons per hectare
Control (No Traps)	70.00	2.75	6.62
5 STOP MATING Pheromone Traps /acre	24.30	5.84	14.02
Quantity of fruits saved by the use of the STOP MATING Pheromone Traps		3.09	7.4

From the findings above, a farmer with 5 traps on his 1 acre of citrus will reduce the damage of fruits by the fruit flies from 70% to 24.30%. This has really caught up with the farmers and they are asking for supply sources where they could purchase some of the Pheromone Traps for their farms. Mr. Atta Yaw from AburaTwakwa who had his farm used as one of the Demo Sites made the following remarks to some to the farmers who were at the farmer field days in his farm. “Since these traps were hanged in my farm, the number of fruit drops has reduced and the traps are catching the flies so well. Since these traps are so effective, I will get some for my farm during the minor season”.

The significance of these positive results is that, CIGMA (Citrus Growers and Marketing Association) is planning a bulk purchase of the traps at discounts promised by the supplier, to raise revenue for the Association. This will help association members save some costs which otherwise would have been incurred through individual purchases of the traps as well as earn the association some revenue.

Challenges

1. Actors that are willing to invest in the value chains are impatient with what they consider as the slow response of ADVANCE in investing in services and programs that require cost sharing with the actors. This situation poses a big challenge to our strategy that centers on sustainability.

2. The Executives of CIGMA had some grievances with the Officials of Fruittiland Ltd over the supply chain contract that was signed between the two actors. This led to the late signing of the MOU by both the Executives of CIGMA and the officials of Fruittiland Ltd hampered and stalled the relationship between the two actors for a period. After the late signing, poor communication led to both parties not fully honoring the agreements in supply contracts. Fruittiland, had problem with their production line and that drastically reduced the volume of fruits sourced from producers during most part of the season. Not properly communicated to the producers resulted in heavy losses where tons of fruit got rotten because they waited for the processors, out of loyalty, instead of quickly finding alternative market linkages.

Lessons Learned

1. ADVANCE should not rely solely on one leading firm when dealing with producers. When the dependent firm failed to meet the expectation of producers the blame game will start and the

project is the easiest target. We should continue to engage producers to the available market at various degrees. If one fails others will quickly step in to rescue the situation from deteriorating.

2. As a project our engagement with government agencies should be done on official basis when their technical support is needed. When dealing with such agencies in the value chain, there should be a clear explanation of the Project policy of not giving out direct support or funds to actors so as to not allow their activities negatively affect the progress of the project. There was a situation where a government agency in the value chain before the establishment of the fruit flies demo sites were given the responsibility of selecting farms in their operational areas for the establishing of the Demo sites but did not cooperate because they wanted to be financially rewarded for that service.

3.4.3 PINEAPPLE

The ADVANCE fruit team strengthened its collaboration with Fruittiland within the reporting period and facilitated technical support in pineapple production and group formation for 50 farmers in the Assin North district where the factory is located. ADVANCE FBFs provided technical assistance and training in sourcing of planting material, FBO capacity building and GAP around proper input use. During the period, Fruittiland submitted a proposal for the allocation of 2,000,000 smooth cayenne suckers from the ADVANCE project's sucker multiplication initiative for the processors. ADVANCE also facilitated an arrangement where 4 FBO from Awutu Senya District entered into contractual agreement with Fruittiland. During the period, the Bontrase FBO made a supply of 17 MT of smooth cayenne and 19.2MT of sugar loaf to Fruittiland for their test run.

With the expectation of minimizing cost and maximizing profit in pineapple production, 169 pineapple farmers in the Akuapem South and Awutu Senya districts in the Nsawam and Bawjiase areas of our operation participated in 4 demonstrations that sought to multiply smooth cayenne suckers using smooth cayenne crowns as alternative planting materials and also mainstream nitrogen enriched compost and compost tea as an alternative fertilizer to boost pineapple production at a lower cost. Two farmers, Stanley Owusu of Pentacom farms and Billy Gameti of Billy farms willingly donated 3 acres of double ploughed and ridged lands, paid transport cost of conveying compost and smooth cayenne crowns from Blue Skies to Agyanoa and Amanfrom at a cost of USD160 and USD106, respectively. The farmers also purchased plastic mulch and MAP (basal inorganic fertilizer) worth USD152. Agrogate Agrochemicals also provided an insecticide for drenching the crowns after planting. 4 ASAPA members also donated 5 crates of fresh pineapple juices for the activities. As a result, 340,000 smooth cayenne crowns have been planted on 6.8 hectares after the pineapple demonstrations and Blue skies has observed a sharp increase in the sales of their compost. It is expected that sucker multiplication will commence after 15 months when the first fruits from the crowns would have been harvested. Farmers would then have access to more suckers since each plant can produce at least five suckers.

To provide adequate services to farmers in the Nsawam and Bawjiase areas of our operation, work was continued with 29 agricultural related firms engaged in input supply, processing and tractor services during the period. As a result, 2,898 farmers who have been organised into supply chains continued to access various markets, input services, technical training and assistance from the project activities. The farmers are made up of 471 pineapple farmers, 230 mango farmers, and 1500 citrus farmers. Purchases made from smallholders for the fruits were 6,661MT valued at USD1.98 million of which pineapple purchased (2,419MT) was valued at USD322,560, mango (1679MT) valued at USD559,667 and citrus (3,074MT) valued at USD1,176,891. Buyers of fruit commodities included processors made up of

ASAPA members, Fruittiland, Mandis, Blue Skies, Sunripe, ITFC and women aggregators who sell at the local market.

KAPA and Yilo Krobo Fruit and Vegetable Traders Association constitute two women groups who are beneficiaries of project activities. KAPA purchases pineapple fruits from farmers in Awutu Senya district for the local markets and for processing. The Yilo Krobo group were able to purchase about 800MT of mango during the minor season. A market linkage was created between the two women groups which resulted in the purchase of 5MT of mango by KAPA for sale at Kasoa market.

The fruit purchases of ASAPA have also shot up from USD200,000 by the end of year one to USD307,166 six months into year two due to ADVANCE facilitated linkages between them and farmers. Four ASAPA members supported the second pineapple demonstration at Amanfrom with fruit juices, learned the new technologies, advertised their products and also talked to farmers for supply of fruits.

An out grower scheme made up of 50 farmers was developed to provide a solid production base for Sunripe. This was followed by a dissemination workshop between Sunripe and 4 FBOs. Farmers after the workshop then decided to leave their fruits on the field for up to 155 days after flower induction to produce fruits with high brix and juiciness as required for processing. In a supply contract agreed with farmers, Sunripe agreed to purchase 500 metric tons of pineapple from farmers. Payment after purchasing 100 metric tonnes has delayed to date and that has broken the cycle of supply. The trust built and all support in building a credible supply chain has therefore not yielded the desired results.

A grant program by ADVANCE to provide 5 million smooth cayenne suckers to smallholders is expected to happen in the third quarter of Year 2 of program implementation. The suckers will be distributed to smallholders selling fruits to ASAPA, KAPA and Pinora, Fruittiland and Blue Skies.

Pineapple Challenges

- Delayed payments by Processors such as Sunripe, a key processor in the fruit value chain that have not been able to pay pineapple farmers for over seven months after ADVANCE's successful facilitation to link producers to the processor. This inability to meet payment schedules as specified in the supply contract has led to mistrust and a strained relationship. Producers have refused to continue with the supply and pay frequent visit to the factory to demand payment. ADVANCE has reduced the level of engagements with the key value chain driver. The ADVANCE fruit team is withdrawing its support to Sunripe as a result of unwillingness by the processor to invest in improving their internal management systems.
- The paramount challenge in this industry is the scarcity of smooth cayenne suckers for propagation. 340,000 smooth cayenne crowns as alternative planting materials have been planted over the period as we wait for the smooth cayenne suckers through the ADVANCE grant.
- High cost of inputs is also a major challenge affecting the industry. It limits their farming area as far as expansion is concern. Compost and compost tea are being mainstreamed into production to reduce input cost in production
- Limited fruits available to Processors and Aggregators.
- Poor attitude on the part of Financial Institutions towards credit for smallholders.

- The processor is willing to participate in the pineapple chain but does not have the capacity to fully kick start the production process currently.

Lessons Learned

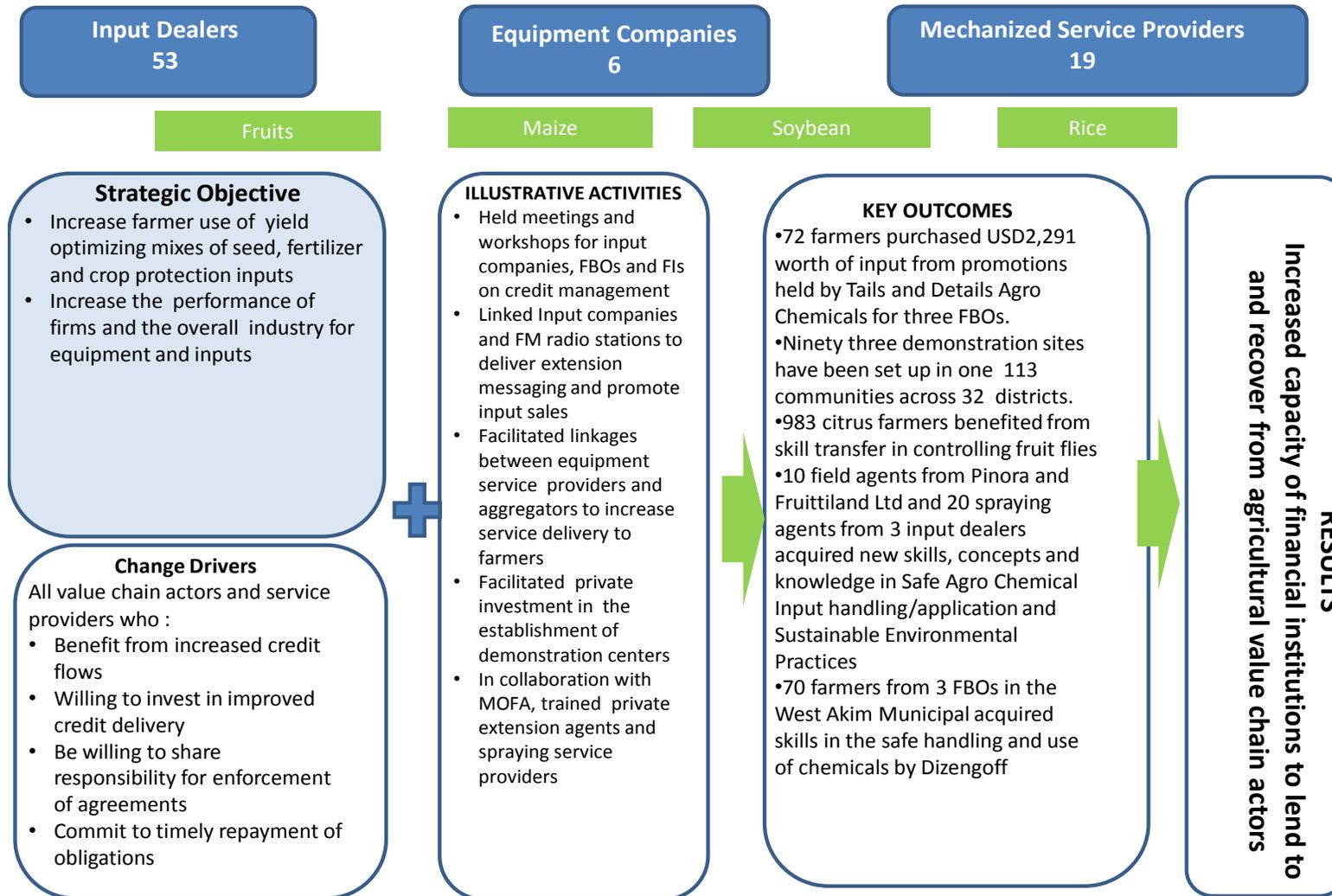
- Smallholders are willing to adopt new technologies and Good Agricultural Practices, if only they will reduce their production cost and maximize profit.
- Smallholders are ready and willing to expand their farming areas if supported and a dependable market is offered.
- Smallholders are motivated if demonstrations are cost shared.
- Firms willing to invest in new technologies and or business relationships may lack management capacity or resources to invest wholly in the chain.
- Small holder pineapple farmers are more risk averse following the industry switch from the smooth cayenne variety to MD2, which forced most of them out of the industry. Cost sharing or provision of genetic material is a legitimate means to lessen re-entry risks for farmers interested in getting back into smooth cayenne production.

SECTION 4.0 MARKET SUPPORT SERVICES

4.1 INPUTS AND EQUIPMENT SERVICES

Overview Within the period under review ADVANCE supported 52 input and 16 mechanized service providers to sustainably increase their sales, through more effective service delivery to farmers, aggregators, and industrial buyers. Table 4.1 below summarizes the significant actors, outcomes and results achieved during the reporting period.

Table 4. 1: Summary of Input and Equipment Services: Reporting Period Oct 2010-March 2011



During the first half of year two, ADVANCE:

- Engaged lead input firms to identify challenges to improving input and mechanized service access. Facilitated agreements with input dealers including, Time Tells, Victory Agro, Mercy Green, Doelyne Agro, to supply inputs on credit to those producers recommended by identified aggregators.
- Held a Citrus value chain meeting at Ajumako in the Ajumako-Enyan-Essiam district for 51 citrus farmers representing farmer based organizations (FBOs) from twelve (12) communities, Opportunity International Savings and Loans Ltd, EnyanDenkyira Rural Bank, PINORA, several agro Input dealers including KAKs Agrochemicals and Splendid Agrochemicals, the private media including Obuoba FM and Hope FM as well as representatives from MoFA. The purpose of the meeting was to engage actors in identifying and investing in solutions to shared problems.
- Linked an input company Golden Stork with Obuoba FM resulting in private underwriting of the Akuafommo Show, a live call-in show teaching farmers about good agricultural practice (GAP). Farmers can call-in or send questions via sms.
- Linked input dealer (Victory Agro), with a seed maize producer, (Mr. John Owusu), '*Money in the soil*', with an FBO, an aggregator (Madam Margaret Attipoe), with the support of the district Ministry of food and Agriculture (MOFA) office. All participants agreed to collaborate to ensure timely delivery of inputs for supply to the aggregator who agreed to ensure payment to the input company. Encouraged Mankranso Citrus Cooperative to invite input companies to educate their members on GAP regarding chemical use. Chemico, a domestic input company responded and trained 50 cooperative members on types, usage and *application of Chemico* citrus specific products to increase production. The farmers have requested that Chemico link up with a local agent to make their products readily available.
- Supported seven tractors service providers, input dealers and financial institutions develop commercial relationships with farmers and aggregators. Key among them are ANDYNOMAFO Tractor Services, Abians Agrochemical Ltd, Altimate Agrochemical Ltd, First Allied Savings and Loans Limited, ADB, Dangme Rural Bank and *Splendid Agro Products*.

ADVANCE also linked Dizengoff to citrus farmers within the Eastern, Central, and Ashanti regions. Dizengoff participated in two value chain meetings to introduce their products to farmers.

Input Promotions and Demonstration Sites ADVANCE encouraged private investment by input retailers and service providers to develop promotional sales and demonstration sites. Within the reporting period ADVANCE supported:

70 citrus farmers including 10 women and 60 men from Obuasi Cooperative Citrus Growers and Marketing Association benefited from an agro input promotion organized by Chemico Agro Chemicals at Obuasi. Participating farmers indicated that it was an opportunity for most of them to be introduced for the very first time to agrochemicals that were specifically developed for citrus. The Farmers took advantage of the occasion and acquired genuine citrus specific herbicides and foliar fertilizers.

- 72 farmers purchased USD2,291 worth of input from promotions held by Tails and Details Agro Chemicals for three FBOs. The chemical purchased included Citroboost, Multi-K, Deltapax and Round-up from Dizengoff. The farmers received the input directly from the input dealer as part of the loan package from South Akim Rural Bank.
- Ninety three demonstration sites have been set up in one 113 communities across 32 districts in Ashanti, Eastern, Volta, Greater Accra and Central regions.
- 983 citrus farmers benefited from skill transfer in controlling fruit flies with special emphasis on stop mating pheromone blocks technology currently promoted by Splendid Agro Products. ADVANCE Nkawkaw acquired the block traps from Splendid collaborated with him to train and set up demonstration sites in 33 selected communities. Fruit flies attack is one of the major setbacks against high yields in most citrus growing communities that ADVANCE operates. The demonstration sites have exposed the farmers to the efficacy of the technology. As a result many farmers are anxious to acquire the traps and increase production in the coming season.
- Hajia Salamatu (an aggregator of the farmers) and Wofa Addo, an input dealer to co-sponsor a maize demonstration farm to enable local farmers learn and adopt improved farming technology particularly on the use of high yielding varieties of planting material, appropriate and proper use of agrochemicals, introduction of zero tillage and adoption of good agricultural practices. The overall objective was to help farmers to improve their yield per unit area and also reduce cost of production. As a result of new knowledge gained from the demonstration farm, farmers in Bunuso have had their yields increase from the previously 3-6 bags per acre to 10-12 bags per acre. Their cost production which before the maize demonstration farm was 320.80 has also been reduced to 228.28 per acre. The farmers expressed their gratitude to the ADVANCE program for the knowledge given to them which has helped them to increase yields, reduce their cost of production and an increase in their income levels.



Fruit Fly control trap set up demonstration by Splendid Agro Products

Capacity Development Through Training During the reporting period:

- 10 field agents from Pinora and Fruittiland Ltd and 20 spraying agents from 3 input dealers (Maranathar, Tails and Details, Kaks Agro Chemicals and an aggregator (Grace and Enoch) acquired new skills, concepts and knowledge in Safe Agro Chemical Input handling/application and Sustainable Environmental Practices. Participants were also taken through basic business management skills. Resource persons from Dizengoff, MoFA and ADVANCE staff facilitated the training workshop.

- 70 farmers from 3 FBOs in the West Akim Municipal were trained in the safe handling and use of chemicals by Dizengoff. The training was part of the package to enhance farmers' access and usage of agro-chemicals to be financed by the South Akim Rural bank.

Support to equipment service providers to employ environmentally responsible practices.

The ADVANCE input team has worked with input companies, Time Tells, Mamet, Abiens, Agro-chemical, Cepfort, Mercy Green, Doelyne and Greenshield Agro Inputs, who have opened branches in the various communities to develop environmental education programs as part of an integrated marketing strategy.

Facilitate lead firms' investment in the value chains

With ADVANCE facilitation, Mr. Julius Fosu, the owner of Altime Agrochemicals met with aggregators in the Upper West region to discuss the potential benefits to aggregators of assessing inputs on credit for their farmers for the minor season. The input dealer agreed to supply inputs on credit to aggregators for distribution to their most trusted farmers, for a period of 4 months. Interested aggregators signed MOUs detailing the repayment terms for the supply of inputs on credits.

Stimulating the Equipment Services Sector In the last semester the ADVANCE team:

- Identified 5 recipients to test maize shellers recently refurbished by GRATIS¹. These will be tested by:
 - Hamidu of Zocco Farms (tractor service provider to more than 5,000 outgrowers)
 - Gumbani Farms and Tractor Services (530 bags of maize as payment for tractors)
 - SalamatuAlhassan (6,000-7,000 bags of maize)
 - NyameNhyira Farmers Group, Bunuso, (innovative FBO that has displayed willingness to invest in innovation)
 - Gundaa Produce Company, (an aggregator/tractor services provider with more than 2000 outgrowers/clients)

The shellers will be loaned on an experimental basis to test their suitability in the given areas. This is particularly important in the north. ADVANCE is carefully introducing this equipment to ensure that actors do not see this as a 'project hand-out' and we are ensuring that the business and profitability aspects are included in discussions to ensure that tractor service operators have a business plan for providing the service.

- Initiated negotiations with Tamale Implements Factory (TIF) in Tamale to help them become more efficient and productive in the production and marketing of their equipment, particularly shellers.

¹ These shellers were purchased by the USAID funded TIPCEE project and following an initial assessment of weaknesses, were modified by GRATIS.

- Provided support to SolarHarvest Ltd is a private sector company engaged in farming to make more effective use of its tractors, plows, harrows and planter as a service provider. ADVANCE field staff have held initial discussions with SolarHarvest to determine criteria for what kind of producer or group they wish to target for service provision. The results of these discussions will lead to SolarHarvest driving the formation of farm clusters along the lines of the MazaraN'Arziki model.

Promotional Activities through Radio Programs With ADVANCE support well disseminated radio programs have been well packaged in collaboration with input dealers such as Time Tells, Mamet Agro, Greenshield Agro Input, Jubilee Radio in Keta, Radio Tongu in Sogakope and Lorldorlonyo FM in Hohoe, and Dela FM in Adidome, to hold weekly fora on agricultural issues. These programs are a valuable complement to MOFA extension services, reach large audiences at very low cost and provide a platform for farmers to get answers to their questions by calling into the program. In addition to being an effective means of delivering quality extension messaging, private companies selling inputs and or services are often willing to support or underwrite the costs of these programs. During the reporting period ADVANCE:

- Facilitated a sponsorship agreement between Golden Stork (a major agrochemical importer) and Obuoba FM in Nkawkaw. Golden Stork agreed to sponsor a weekly agricultural promotion program ‘’Akuafommo’’ From September to October 2010. The program runs on Monday evenings between seven and nine. During the sponsorship period key messages on Golden Stork products, location of factory and distribution outlets in Ghana are mentioned. Obuoba FM also discusses GAP on Citrus and Maize in and general agricultural issues including policies. During the eight weeks that the sponsorship program ran ADVANCE collaborated with MoFA Kwahu West directorate and Obuoba FM in two training and award presentation events. In all 34 males and 8 females received awards and training on chemical handling and safety. These were conducted with MoFA representation from the Kwahu West Municipal and a local input dealer (Siaw Agrochemical). The winners received Golden Stork products such as knapsacks, weedicides and pesticides. To date Golden Stork committed GHC1, 200 worth of agrochemicals and GHC600 cash to the program.
- In the Upper East Region, ADVANCE has been able to agree with an agro chemical dealer (***Simple Prince***) to invest in a radio programme to educate farmers on the safer use of agricultural chemicals as well as the education of farmers on the use of agro chemicals to attain increase in production. The outreach programme also includes staff from: EPA, MoFA, FDB and NADMO. These actors will collaborate to educate farmers on a range of topics like the safer use of agro chemicals, Safe disposal of agro chemicals, safer use of chemicals in the preservation of produce, Curtailing bush fires, etc. This program is aired on URA radio from Monday to Fridays in the evenings on a thirty minutes air time slot.

Challenges

- ***Scaling up the use of demonstration plots as a marketing tool*** Many of the smaller retailers, who are closer in proximity to farmers, tend to want the larger importers (such as Golden Stork) to cover the costs of product promotions. The inputs team is looking for innovative solutions to this challenge, including stronger linkages between importers and distributors/retailers, as well as helping stronger retail firms to promote their business name more than specific products.

- **Logistical coordination of tractor service providers** Farmers are unwilling to commit to a plowing date in advance, because of the importance of the timing of the rains in choosing when to plant. Members of the team are working closely with tractor service providers to find a way to build in flexibility to their coordination strategies without losing efficiency.
- **Accelerating new product or technology introduction** including fruit fly traps, compost, inoculants, soybean planters, etc. requires simultaneously demonstrating a demand for the new product (farmers will pay for it) while developing the supply chain and getting the supplier to invest in stocking the product. The team will be looking at creative ways to determine willingness to pay (particularly linked to demonstration plots) while also exploring different cost-sharing arrangements to lower the risk of a firm investing in a new product or service.

Strategy and Structure Moving Forward

Nearly all of the activities reported on for this period were undertaken by field staff who primarily focused on different commodities, but who still managed to target input firms and equipment service providers. In March 2011, as part of an overall structuring, a dedicated team of 7 field staff (one from each office) was formed to focus explicitly on Inputs and Equipment Services. This new structure marks an exciting opportunity to increase the number and quality of activities targeting these sectors.

The team will be targeting 3 key types of actors: Input Retailers, Input Distributors and Mechanization Service Providers. The team overall strategy is to use the high demand for key inputs and equipment services to drive investment and innovation by these 3 key types of firms. The core tactics that the team will be using to achieve this broader vision are:

- Demonstration plots as cornerstone of promotional campaigns
- Bringing together tractor owners to better plan/coordinate for plowing season
- Supporting retailers in developing business models for selling spraying services
- Link distributors and retailers to innovative new products – supporting them in market research and growing demand
- Prioritize capacity building of input and service providers as they relate to supply chains targeted by rice, maize/soya and fruits commodity teams (in order to build on investments in upgrades underway in those chains)

4.2 OUTREACH AND ICT

Overview The primary focus of the outreach and ICT Services and ICT Services team is to significantly reduce the costs of delivering extension information, reducing risks from investment and facilitating electronic payment to reduce risks and delays.

In the first half of year two, we developed strong relationships with multiple radio stations to enrich their agricultural program content, increase the depth of farmer access to extension messages and promote private sector investment in extension delivery using FM radio as the delivery platform

Fourteen (14) Radio Station Programmers were sponsored to participate in a 2-day Farm Radio Symposium held in Accra. The theme was 'Farm Radio Programming: A catalyst in addressing emerging issues in agricultural development'. Participating radio stations were encouraged to form an association or network. The symposium linked FM operators to potential underwriters; Guest panelists and events focused on improving content and increasing information flows to farmers. Commercial underwriting of agricultural programming supported by the ADVANCE project include, Golden Stork & Obuoba FM, Marmette Agro & Dela FM, Greenshield & Lorlonyo FM, Wofa Addo & Classic FM, Pinora & Nkonim FM, Wumpini & Radio Justice, Simple Prince & URA Radio, Annex A Agro & Rite FM.

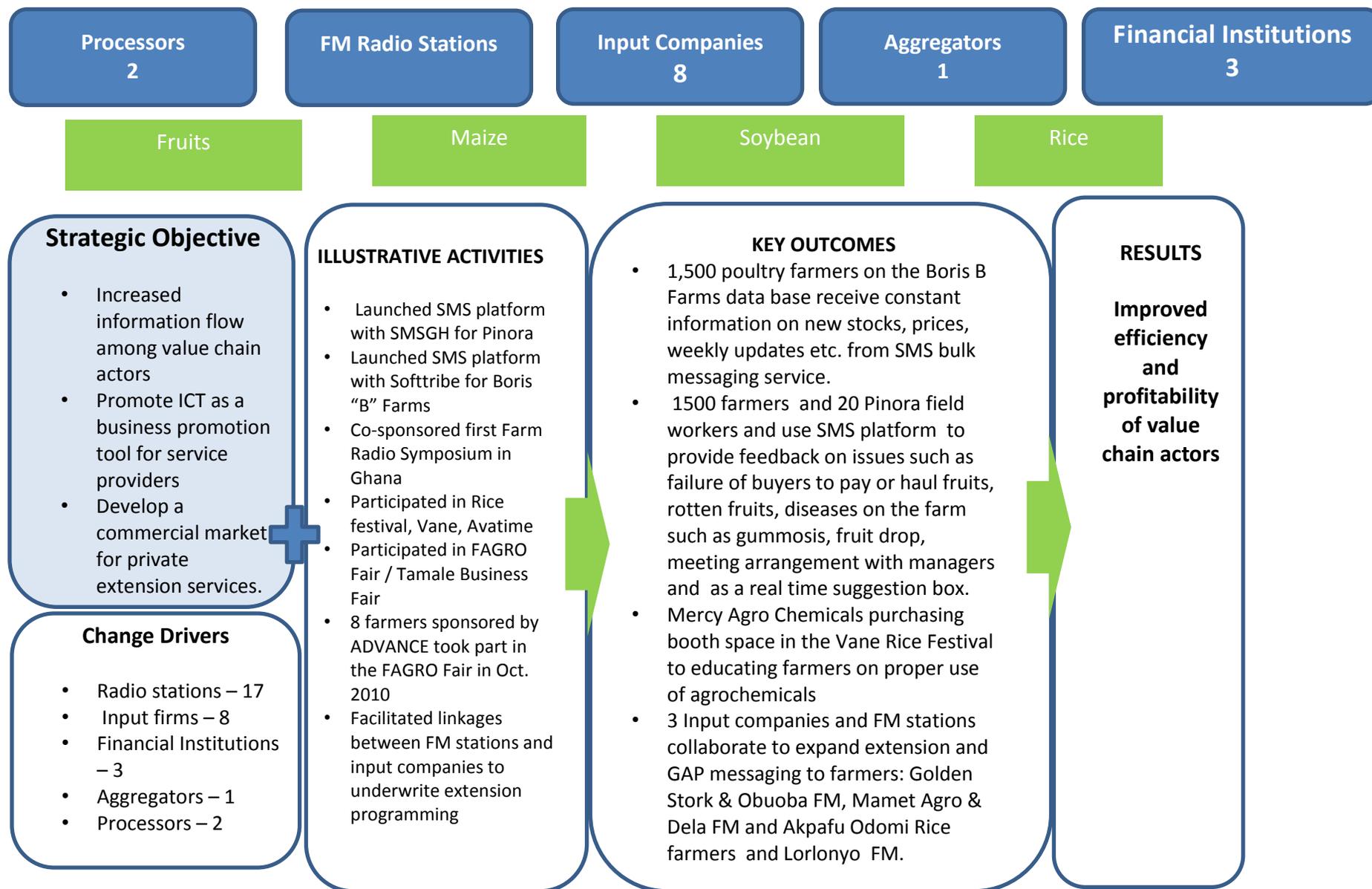
In the Upper East Region, the Outreach and ICT Services team, in facilitated negotiations between an agro chemical dealer, Simple Prince, and URA Radio to develop a farmer education program. This program covers multiple topics including education of farmers on safe use of agro chemicals, dealing with bush fires etc. The program is aired in 5 different languages (7.00 – 7.30 pm) from Monday to Fridays.

ADVANCE has introduced SMS technologies to aggregators, financial institutions and input firms to improve their internal and external communications, and extension delivery services in their businesses. During the reporting period, Boris B Farms and Pinora Ltd., signed different packages with both the Soft Tribe and SMSGH Ltd respectively.

Pinora

An ICT firm, SMSGH Solutions Ltd. has been linked to Pinora to develop an SMS platform for the company's use. The platform is being used by Pinora as an external and internal communications tool in order to send out and receive information to farmers and field staff. Farmers and field officers are able to provide feedback on issues such as failure of buyers to pay or haul fruits, rotten fruits, diseases on the farm such as gummosis, fruit drop, meeting arrangement with managers and suggestions. The system is also expected to enhance internal communication among factory staff and field workers by regularly sharing fruit checking reports and daily situational reports. It is intended to reach about 1,500 farmers by June 2011. About 300 fruit farmers in the Central, Ashanti and eastern regions of Ghana have been reached now.

Table 4. 2: Summary of Outreach and ICT Service Sector Activities (minor season), Reporting Period Oct 2010-March 2011



Boris B Farms

To provide farmers with timely information on agricultural related activities, a bulk Short Messaging Service which was initiated by Boris Baidoo Farms & World Ventures and supported by ADVANCE and Softtribe, an ICT firm was launched in Kumasi during the period. The aim of the bulk SMS is to make communication between Boris Baidoo and his farmers or customers much easier with regard to notifying them on price changes, payment schedules, terms of payment and also communicate to customers on product availability. The launch was attended by 223 beneficiary poultry farmers comprising 182 males and 41 females. Boris has sent a total of 1500 SMS so far since November 2010 to February 2011.

Asante Akim Rural Bank / Bunzale Rural Bank

ADVANCE facilitated a meeting between Soft Tribe and Asante Akim Rural Bank and Bunzale Rural Bank respectively, to introduce SMS technology in their banking operations. The benefits in using the technology were highlighted to the bank as follows:

- Loan Repayment reminder
- Reinforcing savings behavior
- Farmer group meeting etc.

Management of the bank was impressed with the product and is prepared to cost share and incorporate the technology into their banking system.

Festivals

Mercy Agro Chemicals participated in the Vane Rice Festival at Avatime by educating rice farmers on proper use of agrochemicals. Three actors – Asubonteng Rural Bank, Raymond Duncan and Lorlonyo FM are preparing to participate in the Rice festival at Akpafu Odomi (Hohoe) next month.

Trade fairs

To create a platform for key actors to participate in the Northern Business Fair, the Tamale Sub-office created a platform for key actors to network with other businesses and potential clients. Wumpini Agro-chemicals, Heritage Seed and Ghana Grains Council used the opportunity to market their merchandise and established business acquaintances.

Volunteer support

A long term volunteer from Technoserve, Richelle Mathews, completed her 8 months assignment on outreach in December 2010. Her recommendations were as follows:

- Working with FBFs to understand how to strategically use outreach interventions
- Outreach participation in commodity team meetings and field offices staff meetings
- Having one FBF be an outreach lead at the field offices
- Increased interaction between field staff and technology service providers
- Video documentaries on project achievements/ success stories
- Invite Radio stations to participate in value chain meetings
- FBFs to use outreach as a tool to reach performance targets
- Link forward thinking value chain actors to radio stations for interviews
- Focus groups/ fan clubs to understand messaging
- Increase use of volunteer program for capacity building

- Mentorship by forward thinking radio stations to build the capacity of smaller radio stations
- Track if pilots are effective and replicable

Currently, the process is on-going to recruit a volunteer to train MoFA officials in developing documentaries for use on the mobile vans provided by CIDA. Another volunteer recruitment is on-going to get a media consultant to assist Business & Financial Times to create a desk on Agribusiness issues.

Challenges

A major challenge was getting field officers to understand the value of facilitating outreach activities in their daily routines. A permanent team with representatives from all sub-offices now coordinates outreach programs with the Outreach Specialist as Team Leader.

Lessons Learned

Field Officers need to emphasise on benefits of the ADVANCE facilitation approach to our actors for them to understand the business sense in owning the change process within their businesses/organisations. Savannah Farmer Marketing Company (SFMC), for instance, opted out of the SMS program because IFDC was giving them a similar platform for free.

4.3 FINANCIAL SERVICES

Overview

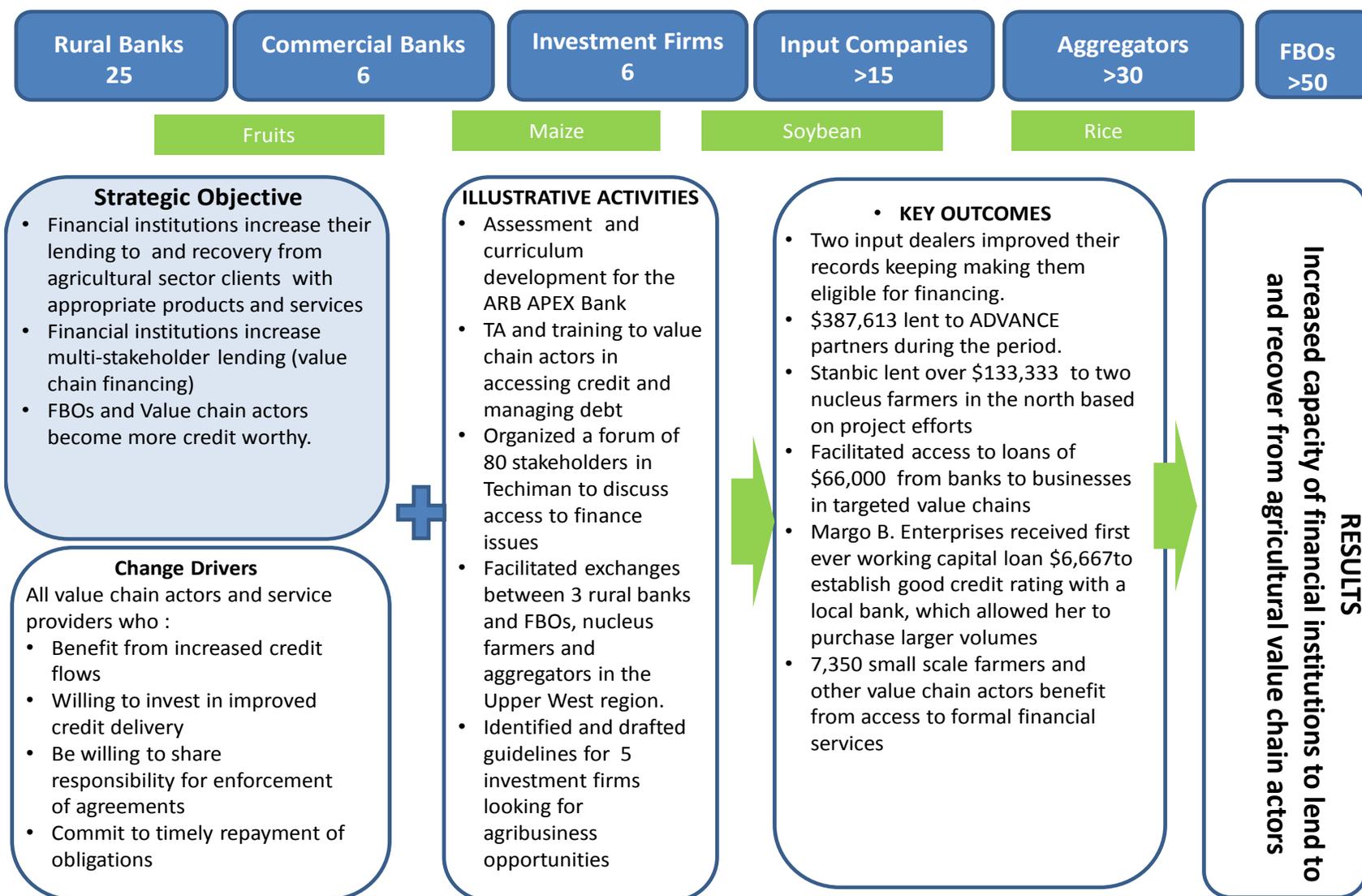
During the period under review, much effort was put into strengthening the capacity of our identified financial institution partners to deliver a broader range of services to a larger number of farms and agribusiness enterprises. In addition ADVANCE financial services team members worked with a range of value chain actors, FBOs, input dealers, aggregators and processors, and willing financial institutions to develop value chain financing products.

ADVANCE Financial Services Facilitators (FSFs) assisted farmers, FBOs and other value chain actors to open bank accounts and improve their financial management skills. Both are required by financial institutions as a precondition to secure credit facilities.

Our relationship with the ARB APEX has progressed and during the quarter:

- Developed course materials and/or toolkits related to financial services targeting Rural Banks in providing requisite services.
- Supported the training of trainers programs to roll out the course materials/toolkit developed on agricultural lending to the various Rural Banks.
- Assisted in marketing and the initial delivery of agricultural finance courses and toolkit usage.
- Facilitated the roll out of agricultural finance and educational marketing programs to various rural banks.
- Assessed their training department (personnel, training materials and delivery of trainings) and made recommendations to management to transform the insipid department.

Table 4. 3: Summary of Financial Services Activities and Outcomes (minor season), Reporting Period Oct 2010-March 2011



As of 31 March, 2011, 7,530 actors have benefited from improved access to savings and or credit services. In Tamale, ADVANCE linked Stanbic bank, Khama Farms and Bongu Seed which resulted in a credit of USD133,333. In Tema, PAB Consult linked First Allied and Savings loan, Stanbic and 8 firms in the fruits sector which resulted in a credit of USD66,267. During the reporting period USD387,613 was extended to ADVANCE partners.

In collaboration with the Business Advisory Center and Anum rural bank, trainers from the National Board for Small Scale Industries (NBSSI) conducted training for 3 input dealers and 7 aggregators on record keeping and credit management. FSFs have individually worked with various actors on record keeping systems and business planning which has helped prepare them to meet the requirements to apply for credit facilities from financial institutions.

Challenges

Weak capacity of financial institutions to assess agricultural risk and or monitor loans The capacity of rural financial institutions and commercial banks to develop and manage a rural and agricultural lending portfolio is considerably lower than anticipated and more of a challenge to overcome. Many financial institutions are unwilling to share financial information making it difficult to assess where the true deficiencies lie. In spite of initial successes, Ghana's financial institutions continue to be very conservative given real and perceived risks associated with agriculture lending. ADVANCE strategy to address this has been three pronged, assist financial institutions to more effectively identify creditworthy borrowers in the agricultural sector, assist agricultural enterprises understand how to be more creditworthy borrowers, and support value chain financing linkages with multiple value chain actors and financial institutions to ensure indirect financing in key commodity areas. To begin to address the challenge of weak financial institutions, ADVANCE sub-grantee, Technoserve is recruiting qualified long term volunteers to help selected banks improve their operations by developing needed processes and procedures.

The bureaucratic nature of ARB-Apex, can create problems when the project wants to engage the rural banks in relationship/capacity building activities. Even though an MOU is in place, Apex insists ADVANCE must obtain permission before engaging any rural bank². This process delays and potentially hinders business transactions. For example, when two rural banks requested SMS services through organizations ADVANCE introduced, APEX requested the rural banks to halt all interactions. Although formal product presentation and demonstrations were carried out per their request, we have still not received a written approval to resume serving these independent rural banks. Assisting in the capacity building of APEX's training department should prove our commitment to APEX and help ease their control over the relationship of ADVANCE and Rural Community Banks (RCBs).

Other challenges include:

² The ostensible rationale for this policy is that many rural bank extended agricultural credit under the MCC funding without the capacity to assess risk or manage these loans. The ARB Apex Bank was not involved in this process and has insisted on a stronger due diligence role.

1. High cost of capital affects interest rate: nominal interest rates are within 25%-30% per annum. Few agricultural enterprises can afford to borrow funds at this rate,
2. High cost of monitoring: Banks recognize monitoring as a key tool for recovery but complain about the cost.
3. Conservatism of traditional banks: the large commercial banks are not as flexible and innovative dealing with actors
4. Lack of trust between financial institutions and commercial actors

Lessons Learned

Lessons learned during the reporting period include the following:

- Although the Rural Banks are independent entities, ARB-Apex has a strong hold on them. A tactful and strategic relationship with ARB-Apex is important if we are to work directly with RCBs. However our involvement with the Rural Agriculture Finance Program (RAFIP) would give ADVANCE access to the rural institutions under the auspices of RAFIP.
- Financial institutions prefer providing credit to commercial actors (aggregators & input dealer) who are perceived to be less risky than farmers.

SECTION 5.0 VOLUNTEER ASSIGNMENTS

ACDI/VOCA has implemented the Ghana FtF volunteer program under the FtF leader award since 2008 and the Ghana ADVANCE associate award since 2009. The volunteer programs for each of these agreements have been integrated to ensure synergy under one management team. The ADVANCE program field offices commodity teams assist in identifying and screening hosts for assignments as well as on follow-up activities of assignments after completion.

5.1 SUMMARY OF PROGRESS TO DATE

Since 2008, 86 assignments have been completed in 33 districts in Ghana with 5,933 direct beneficiaries and 116,169 indirect beneficiaries. Out of the 86 assignments, 32 were implemented under the associate award and 54 were implemented under the leader award.

Table 5. 1: Volunteer Program Statistics

Program	Target Volunteers LOP	# of Assignments Completed	Remaining Assignments for LOP	Target Volunteers FY 2011
ADVANCE Assignments	80	32	48	20
FtF Assignments	120	54	66	29
Total	200	86	114	49

5.2 VOLUNTEER ASSIGNMENTS IN THE CURRENT REPORTING PERIOD

During the period under review, 65 requests were received for volunteer assignments, with 65 being considered viable assignment topics or hosts. Twenty-four of these assignments (12 ADVANCE and 12 FtF) have been completed while six are in progress. Twenty-nine assignments are scheduled to take place by the end of September 2011.

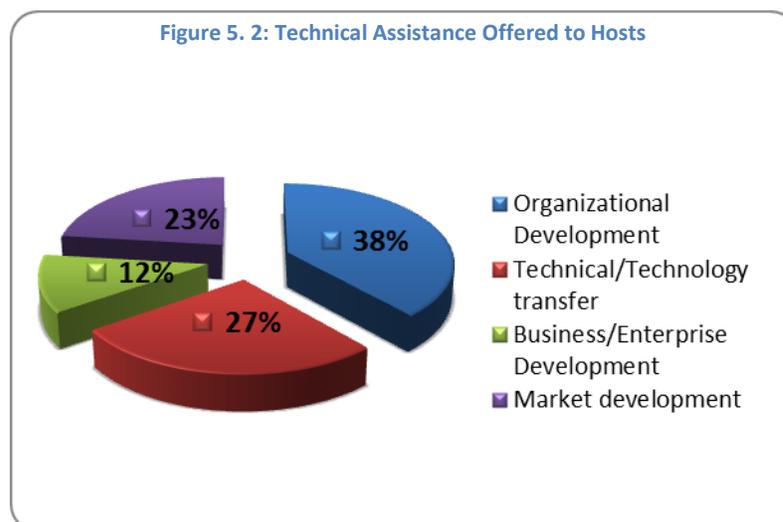
Two assignments were terminated over the past six months, one of which by the host, Kobbiman Farms. The

intern provided to Kobbiman by ACIDI/VOCA was able to develop the outgrower scheme for soybean which was the subject of

the terminated volunteer assignment. The 22 assignments completed were undertaken by 22 volunteers with 22 different hosts in 14 districts of seven regions of Ghana. (See Annex 4 and Annex 6 for a list of completed assignments and the semi-annual report-Volunteer Summaries for details of all assignments completed in this reporting period). The majority of requests from hosts (38 percent) were for assistance in organizational development, especially in the citrus industry. This was followed by technical/technology transfer which was 27 percent of total requests by hosts, specifically for the citrus, maize and soybean industries (See Figure 5. 2)

	Total	ADVANCE	FtF
Total number of requests	65	30	35
Total completed	24	12	12
Upcoming assignments	29	13	16
In progress	6	3	3
Cancelled	2	2	-
Aborted	1	-	1
Assignments in development	3	-	3

Figure 5. 2: Technical Assistance Offered to Hosts



5.3 REVIEW OF PAST VOLUNTEER ASSIGNMENTS OCT 2008-DEC 2010

During the reporting period, the 58 assignments completed as of December 2010 were reviewed (22 ADVANCE and 36 FtF) to assess the initial impact of the program.

Some beneficiaries (NAAMSECO, Seed Growers Association, Carrot Growers Association, Akim Abaam Citrus Farmers, Akim Abodom Citrus Farmers Association, Kokobeng Citrus farmers' Association and Obuasi Citrus farmers' Association) recorded significant increases in membership after volunteer assignments (See Annex 10 and Annex 11 for details). Additionally, seven of our beneficiaries recorded increases in their annual revenue.

Fourteen hosts recorded increases in annual gross sales. For example, Pee Farms' increase in gross revenue can be attributed to prudent record keeping methods and the employment of nine

new managers. The new managers will be trained by a volunteer to further build their capacity on better record keeping practices.

Five hosts have added new products/services to their businesses since a volunteer worked with them. Selasie Farms and Groceries added bread baking (Moring bread), sweet potato flour and soybean snacks to the five products they initially produced. NAAMSECO, an agricultural mechanization service provider, added advisory services to its range of services and Farmer Support Services and Community Utilizes (FASCU) added an HIV farmer awareness program to their activities. Three hosts (3K&A, Darko Farms and Upper West Agro industries (UWAI)) are yet to implement the volunteer recommendations primarily because implementation is contingent upon available working capital. ACDI/VOCA has encouraged our volunteers to consider the financial implications of the suggested changes that require additional funds. We also encourage our hosts to approach financial institutions (some are deterred by the current interest rates; 30 percent) or consider other financing options such as better record keeping, better cash flow, venture capital funds, etc. For those who require restructuring of loans such as UWAI, the ADVANCE financial services team is working with them to negotiate better repayment terms. Four hosts were having their financial records audited at the time of the survey and agreed to provide the financial data when available. During the impact surveys some host organizations were reluctant to share information on their financial records but insisted that they were making profits in their businesses. We will continue to build host confidence in the confidentiality of financial information that they provide.

Two firms have shut down since volunteer assignments were completed with them. One of these firms, shut down because they lost their major market in Europe for peanut butter and were not able to survive on their other markets. For the other, a change in management affected the distribution of their products and in turn affected sales (revenue). Additionally, Aperade Citrus farmers recorded a significant decrease of eight members due to a land dispute in the area. With respect to the OCAT³ ratings, 36 hosts showed an increase in ratings. Two host organizations that shutdown showed decreases in OCAT ratings and five firms were reluctant to provide us with information during the survey therefore their post-volunteer intervention OCAT ratings were not recorded.

Lessons drawn from past program impact assessments include:

- Management skills and financial capacity of host firms are inadequate to implement some of the recommendations that are given by volunteers. The ADVANCE program team will work to build tools that could be used by the hosts to adopt better management and financial strategies in doing business. Supporting large businesses (with management financial skills) that are linked to large numbers of outgrowers is imperative to keep those outgrowers who participate in the value chain linked to reliable markets.
- High indebtedness and lack of liquidity constrains investment in change, leaving some hosts willing but unable to make the necessary changes to make their business viable.

³ OCAT means Simplified Organizational Capacity Assessment Tool. Firms are rated based on governance, management structure and practices, human resources financial systems efficiency and sustainability levels before and after assignments.

- There is reluctance by some hosts to provide financial information on their businesses to volunteers. The volunteer program staff will continue to build host confidence in the program so they are comfortable with providing staff and volunteers with this information

Observations from our experience with the overall volunteer program implementation include the following:

- The associate award has enabled the volunteer program to help the leader award (ADVANCE) effectively reach more isolated and marginal groups especially in the poorest areas of Northern Ghana
- Business plans developed by volunteers have been useful in helping hosts to secure financial loans for investment, e.g. National Association of Agricultural Mechanization Centres (NAAMSECO)
- Awareness and appreciation of the volunteer program is increasing as evidenced by the frequent potential hosts coming directly to our offices with requests for assistance
- First time volunteers require more support to help manage their expectations. We will update the volunteer guide to capture important lessons for incoming volunteers
- Managing demand for volunteers outside of our core commodity focus is a challenge. Recollections of the previous USAID FtF program, which did not take a sectorial focus, have created expectations that the current program should assist anyone who asks for help.

5.4 LINKING OUR BENEFICIARIES WITH THE USAID FUNDED AFRICA LEAD PROGRAM

Six beneficiaries of past volunteer assignments were linked to the USAID funded Africa Lead program, which provides leadership training. The training program is aimed at inspiring innovative leaders, champions, and thinkers in African countries, who are committed to creative and new approaches to achieving food security Annex 2 for participant list)

5.5 INTERNSHIP PROGRAM

Seventeen interns from the National Service program in Ghana are working with all offices on the ADVANCE program. (See Annex 3 for list of interns.) Interns are working with the Soybean Council, the Grains Council and Radio Tongu. Examples of these internship assignments are as follows:

- Intern, Paul Amezugbe, is working on developing agribusiness radio content in the local Ewe language as well as the development of promotional events in local communities in the South Tongu district with Radio Tongu
- Intern, William Horsu, assisted the Ghana Grains Council outreach team to promote their membership drive across the country
- Intern, Victor Danso, is assisting the Soybean Council in activities planning and building a database of members of the council

SECTION 6.0 CROSS-CUTTING SUPPORT SERVICES

6.1 ENVIRONMENTAL COMPLIANCE

During the current reporting period, environmental management has been driven by demand from the commodity teams and the supply chains that the project is supporting. Key activities undertaken include:

- a. Building capacity of all field staff to identify and report appropriately on environmental issues
- b. Screening of grant applicants for environmental compliance
- c. Pesticide management
- d. Use of appropriate seed, including drought tolerant seed
- e. Management of waste from agro-processing

Environmental Capacity Building for Field Staff

All ADVANCE field officers have been trained in basic principles of environmental management to ensure they have the capacity to identify and report any potential environmental non-conformances for further investigation and adoption of corrective actions in line with USAID and the Ghana Environmental Protection Agency (GEPA) environmental regulations (22CFR 216 and LI1652). The ADVANCE environmental management plan and PERSUAP remain the guiding tools for all commodity teams and field staff is actively encouraged to refer to them throughout their activities. During the period in review, no report of non-conformances has been received.

Assessment of Environmental Impact by Grant Beneficiaries

During the period under review, potential grant beneficiaries were identified for maize, soybean and rice production equipment as well as rice mill upgrade equipment. Of the 24 shortlisted beneficiaries, 14 have been screened using the environmental review forms and the specific determinations for each beneficiary have been documented for implementation of environmental and safety mitigation measures prior to the disbursement of the grant.

All pre-selected applicants for grants on maize and soybean production equipment (Benlunuma Farms, Tahiru Meke Farms, Big Ajar Enterprise, Kuoharitou Farmers Group, Anbotima Enterprise, Ohumpong Investments Company Ltd, Agrofarms Enterprise and Kharma Farms) were assessed for compliance with the Initial Environmental Evaluation and determination of the scope of potential adverse environmental impacts using the environmental review form for ADVANCE grants. The reviews indicated the potential for adverse environmental impact for these interventions are minimal. In actual fact, the equipment is expected to improve the plant populations and reduce new land that may be converted as a result of low yields per acre. The tractors will also ensure proper land preparation that can improve yields and efficient use of available land. Notwithstanding the negative determinations, ADVANCE will support the beneficiary farmers through training on appropriate tillage practices to forestall any adverse impacts such as loss of top soil and land degradation as a result of improper tillage practices.

Fakwasi Rice Mill and Farmers Association, Anum Valley Rice mill, Akpafu Odomi Coop mixed farming society and Upper East Single Mothers Association were evaluated for Rice mill upgrades. All the mills assessed had minimal potential for any adverse environmental, health or safety impacts. In some cases, the upgrade of the mills will improve the overall efficiency of the mill and reduce fuel consumption and emissions. Although the interventions will pose minimal risk of negative environmental impact, disposal of large quantities of mill waste remains an issue of concern. A consultant will be recruited to develop alternative uses and disposal for rice husk to minimize burning which is currently the common disposal method.

Gushie Farms was assessed for rice production equipment. The risk of adverse environmental impact was determined as low after the review. The project will continue to monitor and ensure that all mitigation measures to prevent any soil fertility loss or degradation are fully implemented.

Pesticide Management

The ADVANCE project has identified the establishment and development of spray service providers, as a strategy to limit the number of untrained people handling pesticides. In this regard, the program has trained 30 spray service providers on the safe and effective use of pesticides in Akim Oda, one of the major citrus producing areas. The environmental implications of poor pesticide management and guidelines for the minimization of negative impacts were emphasized as part of the training program. Participants were also taken through the GEPA regulations on pesticides and the rights and responsibilities of spray service providers. This spray services team is the first to be supported by the ADVANCE program in collaboration with Tails and Details Agrochemicals and Dizengoff Ghana Limited. The Nkawkaw field officers will follow the progress of the operations of this team to learn from their success in the coming season and potentially replicate this in other areas where there is a growing market for this type of service. This intervention, if successful, will improve the handling of pesticides through trained applicators and reduce the number of untrained people that are exposed to pesticides.

Similarly, the project, in collaboration with the national Fruit Fly Management Committee, has carried out 89 demonstrations using Methyl Eugenol and Malathion impregnated fruit fly traps in all of the fruit producing zones in addition to training on cultural practices to manage fruit fly populations as a combined approach to integrated pest management. This method will replace the less desirable use of insecticides. Other strategies that have been used during this reporting period to enhance safe pesticide use management include collaborations with lead input firms, the EPA and other stakeholders in radio discussions on topics such as pesticide management including storage, safe-use, and disposal of used containers. A total of 70 farmers from three FBOs received training in safe handling and use of pesticides in collaboration with Dizengoff.

Use of Appropriate Seed

To minimize expansion into green-fields, efficient use of seed varieties will improve yields and reduce conversion of new land for agriculture. The main drive of the ADVANCE seed strategy is to use demonstrations and training on good agronomic practices and general seed handling to encourage target beneficiaries to increase yields without expanding the land under production. However, it is also recognised that the introduction of new seed varieties will not necessarily translate into increased productivity due to current crop management techniques being

substandard. High yielding seed varieties such as Mamaba, Okomasa, Aburohemaa, Omankwa, and Enibi for maize and Jenguma, Nangbaar, Ahoto and Quarshie for soybean do not require an increase in agrochemicals and other inputs to perform well when treated with recommended practices from the Crop Research Institute (CRI).

Use of appropriate seed can also help in the management of striga infestations. Striga is prevalent in land that has already been cultivated, and is rare in virgin lands hence the annual clearing of new lands. To avoid this situation, farmers have been advised to practice crop rotation between maize and soybean. In order to discourage farmers from clearing virgin lands, the program has also made provisions to introduce target farmers to striga resistant maize seed varieties such as Omankwa, Aburohema and Abontem and conduct training on how best to manage striga infestation.

In consultation with the Ministry of Food and Agriculture (MoFA), ADVANCE hosted a stakeholder's workshop on the Plant and Fertilizer Act that was published in September 2010. The workshop had representation from stakeholders in the seed, fertilizer and crop protection industry. The workshop was the first step towards bringing stakeholders in the inputs industry to make an input in the regulations that will be passed to operationalize the aforementioned act.

Management of Waste from Processing Plants and Crop Residue

Management of crop residue during harvesting and processing was identified during the project design phase as an area of concern. During this reporting period, 70 farmers in Okyeroko benefited from training on using ash from rice husks as mulch material for the establishment of a rice nursery. This intervention not only reduced the quantity of waste, but the results also indicated an improvement in seed germination and reduction in seedling loss as a result of using ash. In total, 63 of the farmers in Okyeroko have now adopted the use of ash for nursery development.

Blue Skies, one of the largest fruit processing companies in Ghana, also found a market for its compost after four demonstration sites were established in pineapple growing areas in the Akwapim South and Awutu Senya Districts to demonstrate the effectiveness of using nitrogen enriched compost as fertilizer. The results of the demonstrations indicated that treatments that were made with compost enhanced the soil structure resulting in suckers looking greener and healthier, an indication of possible higher yield. The increased demand in compost from the pineapple industry as a result of this exercise provides an exciting market opportunity for compost and a possibility for input firms to develop new product lines.

The fruit processing industry still faces challenges of managing the waste from operations. One such processor is PINORA which has been working with ADVANCE to find an alternative use for almost 10,000MT of putrescible waste at their processing plant. The success of these demonstrations and possible increase in market demand will help processors like PINORA convert their waste into feedstock for compost plants. A volunteer is being recruited to work on this in collaboration with Zoomlion, a waste management company. The outcome of the assignment will be available in the annual report.

Table 6. 1: Summary of Progress on Environmental Monitoring Indicators

Environmental Monitoring Indicator	Progress to Date
New land converted to agricultural use as result of project assistance	No new land has been converted to production as a result of ADVANCE, but planting season is underway and monitoring will be carried out.
# of beneficiary plots where biochar or compost applied	No Biochar treatments have been made so far however, a consultant will be recruited in September 2011 to assess its feasibility and possible development
# of plots cleared using alternative methods	Not yet available- Planting season is still underway
# of cost share agreements with aggregators, buyers, and input and service providers to provide extension services directly	None
# of beneficiary plots where conservation agriculture (low or zero tillage) adopted and applied	Pilot demonstration held in three communities (Bunusu, Bonte and Dompoase)
# of farm plots on slopes exceeding 45%	GPS coordinates being collected from target beneficiaries will be combined with remote sensing data available to identify intervention areas with such critical slopes
# of plots implementing terracing, contour farming, agroforestry or other measures on slopes exceeding 12%	GPS coordinates being collected from target beneficiaries, will be combined with remote sensing data to determine the number of beneficiary plots that fall under this category and the different mitigation methods being practiced. Information will be available by the next reporting period.
Area of forest or mangrove habitat cleared attributable to project assistance, grants or inputs	No forest area or mangrove habitat has been cleared as a result of ADVANCE.
# of agricultural plots established in protected or sensitive areas attributable to project assistance, grants or inputs	None
# of agrochemical dealers providing pesticide spray/application services	Two- Tails and Details and Kaks agrochemicals with coverage of the East Akim, Kwaebibirem and Kwahu South and West
# of farm enterprises that acquire GLOBALGAP certification as a result of project assistance # of smallholder farmers who become outgrowers to larger certified enterprises and are required to meet GLOBALGAP standards	None, ADVANCE is focused on local and regional markets that are not strict on such market requirements, however, the project will continue to monitor this closely
# of buyers and aggregators using performance incentives # of buyers and aggregators who have established clearly-defined production goals with farmers	Not yet available.
# of input dealers providing appropriate inputs to supply chains engaged by the project	54
% of introduced seed varieties that are “low-input”	Nine hybrid maize seed varieties which are ‘low input’ are currently on trial.
GMOs introduced	No GMOs have been introduced as part of the program
% of proposals screened	Sixty percent of grant proposals were screened for environmental threats during the reporting period. Screening of proposals is ongoing and will be completed for all pending grant applications before the next reporting period.

6.2 GENDER

The project has implemented activities outlined in the gender strategic plan and continues to make progress in ensuring that the project benefits all genders equitably. During the period under review, the focus of gender activities and outcomes were:

- a) Staff capacity building
- b) Addressing gender based constraints to ensure equity in production resource allocation
- c) Ensuring that a least 30 percent of ADVANCE beneficiaries are women

Staff Capacity Building

The 2010 report of the ADVANCE gender study identified staff capacity building as an imperative step toward effectively mainstreaming gender within the project. In total 54 technical staff participated in a series of two-day trainings led by Winrock International gender specialist and volunteer, supported by ACDI/VOCA gender staff. The training has equipped the technical staff with gender analysis tools that will enhance their ability to identify, address and report on gender imbalances in their field activities on various value chains.

The training was conducted in a participatory manner and staff used examples from their field experiences on the project. An outcome of this training is that ADVANCE field officers are able to identify commodity specific gender based constraints at various levels of the value chain

“Even if I am not responsible for gender directly on a program, I will be able to analyze value chain projects and presentations on other projects with a gender lens in future”- Patrick Koomson (Participant)

“The gender training has resulted in my appreciating the importance of gender analysis in project formulation and design and the need to address gender bottlenecks in projects” – Dadzie Fedelis (Participant)

Addressing Gender Based Constraints

Project staff has put together strategic interventions that can reduce gender-related constraints identified by the various commodity teams and allow women to be more successful in their agricultural businesses. One example of this is an advocacy for increased access to fertile lands for women by field officers in the North. Currently, most women in certain parts of the North only have access to productive land when their husbands die or they cultivate plots of land that are far from their homes and difficult to access. The staff has facilitated two community meetings and discussions in two districts on this issue to raise awareness on the benefits to households and the community as a whole if women are given more access to fertile lands, and are working with community leaders to find ways in which the current situation can be changed without threatening traditional cultural values. Similar activities will be extended to other districts and communities throughout the next reporting period.

Ensuring That At Least Thirty Percent of Beneficiaries Are Women

All data collected by the project is disaggregated by sex and this helps us to track areas that project interventions are not reaching all genders equitably. ADVANCE has made conscious efforts to encourage women's participation in the project and this is reflected in the indicators. Of the 17,118 individuals benefitting directly from project activities during the current reporting period, 5,216 (30 percent) are women. Of the 12,008 rural households benefitting directly from ADVANCE interventions during the period, 1,858 (15 percent) are headed by women. Of the total 2,410 ADVANCE beneficiaries adopting new or targeted technologies, 20 percent, or 471, were women. Out of 5,647 farmers trained in Farming as a Business (FaaB), or other entrepreneurship and business skills development, 1,831 (32 percent of the total) were women. Out of 5,246 beneficiaries that were accessing loans, or have had increased access to financial service 1,831, or 35 percent of the total, were women.

Based on post-training feedback from field staff, several key areas were identified as necessary to creating a solid foundation of support for gender activities. These include the provision of tools and resources that staff can have on hand, and the development of formal gender reporting indicators to track activities. The ADVANCE gender team has closely monitored field activities and actively supported field staff with practical tools to ensure successful gender integration in their project areas.

In the coming period, a gender handbook will be prepared to serve as reference material for field staff and at least two studies will be conducted to assess the effectiveness of the project strategy in reaching the different genders equitably with, an emphasis on the impact the strategy will have on women in particular.

6.3 GRANTS

During the reporting period, 43 applications were shortlisted for support to procure plowing, planting and harvesting equipment for soybean, maize and rice; upgrade or increase capacity of rice mills; organization of agricultural conferences; production and supply of disease-free smooth cayenne pineapple suckers, and equipment for pesticide application. Five applications

Women Leading the Way

ADVANCE is not only concerned with having more women in the production process but also stresses the importance of having women who will be active and vocal in contributing to increased competitiveness and development within their sector.

Margaret Attipoe, leader of the Maize Aggregators Association in Kapando, has played an important role in promoting the free flow of resources within the maize value chain in the Kpando-Bumbula area. Ms. Attipoe has been creating links between producers, aggregators, and buyers in educational institutions. She buys directly from two FBOs (Money in the Soil and Mile 19 Maize Farmers Association in Bumbula), but the bulk of her business comes from taking large orders from school feeding programs in the area, and outsourcing that demand to the eight aggregators in her association. This approach has led to significant growth in Ms. Attipoe's VC activities, and has also created stability and order within her association and the producers and market connected to it.

were processed and the grants awarded whilst the rest are at various stages of the procurement process. In all, three NGOs, 19 FBOs, and 21 individual farmers and firms, have benefitted from the grant program in the reporting period. This brings to a total of 51 direct beneficiaries since the project started.

Planters for Demonstration in Northern Ghana

In the North, ADVANCE provided 25 manual seeders to 11 farmer groups to demonstrate use of innovative equipment in small holder production of soybean and maize. This grant is for demonstration of technology to increase yield by adopting the correct plant population densities, reduce labor costs, reduce the drudgery of planting especially for women and increase supply of soybean and maize into various supply chains as well as to stimulate investment by small holder farmers in additional equipment from local vendors.

Highlights of the Reporting Period

- a. Made five grants with total value of \$50,643
- b. Twenty-eight grants in progress with total estimated value of \$1 million
- c. Total beneficiaries of grants
 - 43 Grantees
 - i. 3 NGOs
 - ii. 19 FBOs
 - iii. 21 individuals farmers
 - Direct beneficiaries: 2,031
 - Indirect beneficiaries 24.430

Upgrading Rice Mills

To enhance the competitiveness of local rice and strengthen the supply chains, ADVANCE has provided 24 pieces of various equipment in the form of grants to upgrade five rice milling facilities, increase efficiency, improve quality and also increase output. Out of 14 applications received from interested millers, five were shortlisted for further due diligence. ADVANCE recruited an independent consultant to conduct an assessment of the current milling capacity and state of the equipment at selected mills, technical upgrades as proposed in the grant applications and advise on compatibility of new equipment with the existing equipment in the mills. Based on the consultant's recommendations, ADVANCE requested quotations for the equipment and the procurement process will be completed by end of April.

Cost Share Grants for Equipment

In September 2010, the project made an announcement in the national dailies for grant applications to procure production and processing equipment for maize, soybean, and rice to upgrade supply chains. Using grant funding the project is assisting viable applicants to procure production and harvesting equipment on a cost share basis. The minimum requirement for investment by the beneficiary is approximately 30 percent of the total purchase value. In response to the announcements, the ADVANCE team reviewed over 150 applications from individuals and companies across Ghana, including 41 applications for rice equipment and over 100 applications for soybean and maize. Concept papers were received from actors known to our commodity teams, but also from new entities that had not been identified by our staff during the initial scoping exercises. The competitive process allowed the team to learn about these new actors but it also significantly delayed the review process as ADVANCE field staff needed to visit all potential beneficiaries to understand their operations in order to assess the viability of their applications.

The final selection of grantees has been made, pre-award assessments and grant documents completed, and quotations on the equipment received from equipment vendors. During the next reporting period, ADVANCE will purchase the equipment pending non-expendable property approvals from USAID.

Revamping Production of the Smooth Cayenne Variety for Local Fruit Juice Processing

To strengthen the supply chain for local fruit processing, ADVANCE contracted Bomart Farms Company during the reporting period, to produce and supply five million disease-free smooth cayenne suckers. The production will start in April 2011 with the supply scheduled over a period of 18 months. The first batch of pineapple suckers will be supplied in October 2011, with continued monthly supply through July 2012. The beneficiaries will be outgrowers of select fruit processing companies that have submitted proposals to the project for distribution of pineapple suckers to their outgrowers.

Support for Spraying Services

To improve access to spraying services which is critical in addressing disease conditions and to combat the upsurge of fruit flies, especially on citrus plantations, ADVANCE is supporting four input providers and an aggregator to develop or strengthen their businesses which provide spraying services to farmers. The project organized training for these beneficiaries on safe use of the equipment and provided a volunteer to assist them develop a business plan. These beneficiaries have been offering spraying services to farmers on a small scale to control pests, diseases and improve plant nutrition and are willing to expand this service to more farmers. The expected outcome of this activity will be new crop management practices and technology introduced to farmers, increase access to spraying services by farmers and increase yields and fruit quality of citrus

Support to the Ghana Grains Council

ADVANCE continued to provide support to the Ghana Grains Council under the existing sub agreement for upgrading six warehouses: Gundaa, Pens Food Bank, Grainleaders Company, Sahel, UT Logistics and Wienco. The procurement process for upgrading equipment including shellers, grading equipment, generators, and maize cleaners, among other required items was completed and is pending USAID approval.

Challenges

The greatest challenge in the field in regard to these grants was the lack of adequate information provided by beneficiaries about appropriate planting, and harvesting equipment required for field terrain/regions, land size, available brands, and equipment dealers in Ghana. Most beneficiaries are not familiar with the right equipment needed or available and do not have any indication of prices of the equipment. They are mostly familiar with MoFA subsidized equipment and continue to use the subsidized cost as a reference point to calculate their mandatory leveraging requirement. To get specifications for the equipment needed, ADVANCE liaised with an engineer from the Ministry of Agriculture to provide specifications for suitable equipment so that ADVANCE could proceed with the procurement process.

The information gathering mentioned above initially delayed the grant award process. The process, however, has picked up speed after project staff had a better understanding of the challenges and addressed the problematic areas.

6.4 GEOGRAPHIC INFORMATION SYSTEMS (GIS)

Overview The principal GIS activity carried out during the reporting period was the mapping of citrus producers and processors in Ghana. This data has helped processing firms gain a better understanding of the supply base for citrus and to better design and manage their input supply chain. This and additional GIS interventions carried out during the reporting period are summarized in the table below and described in the subsequent narrative.

Table 6. 2: Summary of progress made with the GIS component

Activities planned for year 2	Expected Outcome	Achievement
Map area under cultivation, variety, age, etc. of citrus fields	GIS database of 10,000 citrus fields developed and results presented at a public forum	GIS database for over 12,000 citrus fields developed; results are being used by various stakeholders.
Development of ADVANCE online GIS database	Online/enterprise GIS platform developed for the agricultural sector	On-going. Contract under procurement procedure. Citrus database to serve as base data
Support the locational mapping of aggregators, FBOs, processors & other VC actors	GIS database of ADVANCE interventions across all beneficiary districts	Refresher trainings on GIS/GPS mapping given to 4 sub-offices. Activity is on-going and some field offices have almost completed mapping their value chain actors.
Explore the possibility of partnering a private/public GIS firm to host ADVANCE GIS database	Strategic plan for selection of a strategic partner in place	Technical steering committee formed (see annex 1 for membership). Minimum requirements, selection criteria for the strategic partner and scope of work (SOW) developed. Request for proposal will soon be sent out.
Facilitate the development of interactive online GIS Database	An enterprise GIS platform developed for the agricultural sector.	On-going. Scope of Work has been sent to potential GIS firms for the bidding process.
Development of GIS toolkits and Training of MoFA MIS officers and other actors on GIS data exploration and usage	30 MoFA districts have access to ADVANCE GIS toolkits and 30 MIS officers trained	Activity is on-going. Training manual is being developed
GIS paralegal land title registration. Consultation with ILS Inc. for possible collaboration and Development of MOU with ILS Inc for the implementation of this activity	MOU developed and signed with International Land Systems Inc.	The activity is on-going. A draft MOU has been developed and provided to ILS for inputs.

Citrus Mapping Exercise

During the period under review, ADVANCE completed the citrus mapping program. This mapping and development of a database has filled part of the data gap in Ghana's agricultural sector and is helping the citrus value chain leaders develop GIS based supply chain management systems. The database is being used to identify producers and varieties as well as ascertain the locations, orchard ages, yields estimates and potential production volumes at various locations.

The citrus mapping showed that citrus might be the largest fruit segment in Ghana dominated primarily by smallholders, with an average farm size of 0.86ha. The farmers are mainly smallholders (98.45%) with 1.4% medium and just 0.13% large scale farms. From figure 2 below, the main varieties grown are the Late Valencia (90.52% of total plots) and the Mediterranean Sweet (3.59%), Red blood (2.96%) and the local variety (1.07%).

Figure 6.2 Varietal proportions of citrus under cultivation

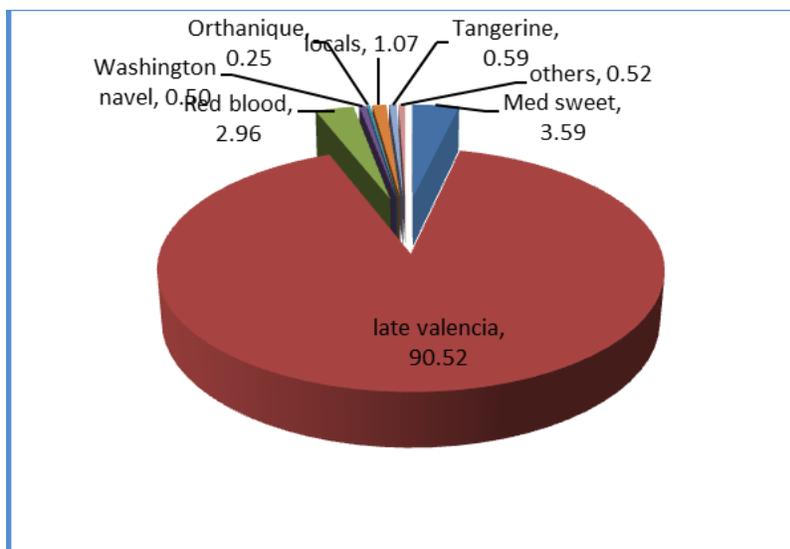
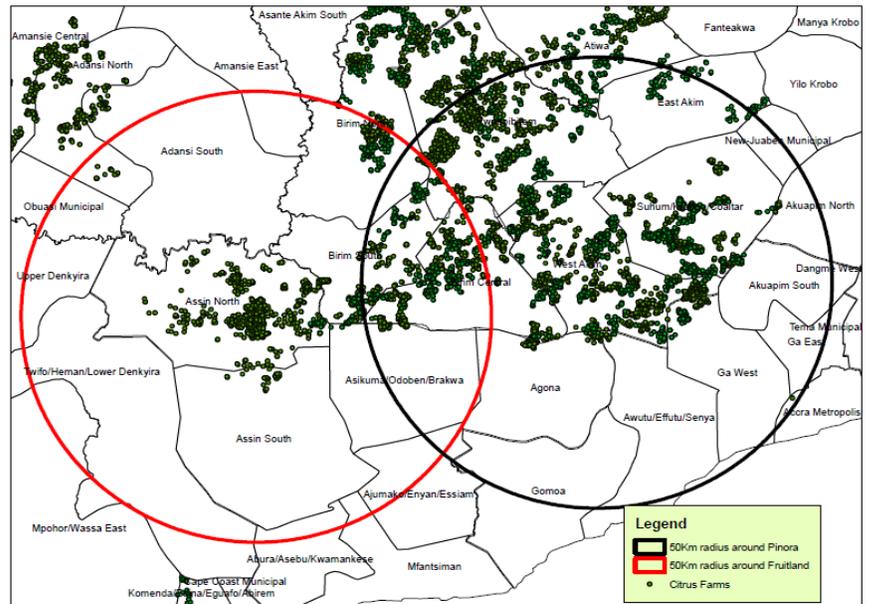


Figure 6.1: Map of potential supply coverage for two of ADVANCE's value chain leaders.



Use of GIS database by VC leaders

The value chain leaders in the citrus sector include Pinora and Fruitland. Pinora in particular has received all the citrus base data and is actively applying the underlying principles for decision making and supply chain management.

The map in Figure 6.1 shows that within a radius of 50km, Pinora for instance can source over 133,000MT of citrus which is far above its annual installed processing capacity of 80,000 MT.

However, Pinora was only able to source 50% of this installed capacity in the 2009/2010 season. With the help of the GIS database and organizational restructuring, Pinora is now processing at 80% capacity.

In Table 6. 3 a summary of the number of citrus fields and acreages mapped in 15 major growing districts are presented.

Table 6. 3: Citrus Mapping Results by Districts

#	District	# farms Mapped	# Hectares
1	Kwaebiberem	2575	2694.14
2	West Akim	1908	1596.87
3	Akyemansa	68	292.84
4	Birim North	679	947.19
5	Birim South	1118	713.09
6	Atiwa	691	595.82
7	Kwahu West	662	435.48
8	Suhum Kraboa Coaltar	839	569.03
9	Birim Central	479	367.64
10	Assin North	872	595.16
11	Ahafo Ano South	722	1098.38
12	Adansi North	146	158.42
13	Adansi South	28	24.83
14	Amansie Central	95	72.60
15	Obuasi	247	126.42
	Total	11,129	10,287.93

All the farms mapped have been delineated by variety, spacing regime, flowering pattern, productive stage (age), production forecasts, accessibility to farms etc. These digital maps, in addition to existing topographic layers, will form the core of the on-going online GIS database which the project is developing. This will be completed in the coming reporting period.

Locational Mapping of Value Chain Actors

ADVANCE is developing a spatial database for all the value chain actors that the project is working with. This is important for project monitoring and re-orienting program interventions across commodity chains and in various locations. During the period under review, the project organized refresher training for staff in four sub offices on GPS mapping techniques. GPS coordinates of all actors including aggregators, buyers, processors and financial institutions etc.

are being taken and recorded. The exercise is 90% complete in two (Nkawkaw and Techiman) out of the five sub offices.

GIS Paralegal land title registration.

ADVANCE has initiated testing of a pilot land registration systems with the International Land Management System (ILS). By leveraging GIS-based technologies, this pilot activity can lead to a full legal or paralegal registration of about 1,000 farms of mango, citrus and pineapple in the Volta, Greater Accra, Eastern, Brong Ahafo and Central Regions.

The program will involve key actors in land administration, especially the Lands Commission. Supporting farmers to have some form of title to their land will improve their own sense of security (and thus willingness to invest in upgrades) their credit rating because the only significant asset that most smallholders have is the land they occupy or own.

Ensuring access, utility, and sustainability of GIS information

In November 2010, ADVANCE organized a public presentation in Accra and shared the results of the citrus mapping program with industry players. This event generated a lot of interest and enthusiasm in geospatial applications to agribusiness. A number of recommendations were made during the panel discussion and open forum at the program. Among the recommendations was the need to:

- institute mechanisms appropriate for effective dissemination and distribution of the GIS database among potential users including farmers
- draw up sustainability plan to ensure that the ADVANCE GIS database is maintained and updated on regular basis
- design sustainability plans that include collaboration with strategic partner with strong business orientation to host a national agricultural GIS database.
- identify potential users of the GIS database and draw up programs that would generate substantial revenue. This revenue can be used to maintain and update the database.
- have a GIS standard for the agricultural sector in Ghana including certification of trained GIS surveyors. It was realized at the forum that a number of organizations have different GIS training modules and there's a need to synchronize them. Also different organizations collect different GIS data depending on the inclinations of their projects. It is therefore important that this strategic partner is able to bring all these GIS works to a single GIS portal as a means of preventing duplication of efforts among these projects
- develop an enterprise GIS platform that will allow end users anywhere in the world to access the GIS database.

GIS Technical Steering Committee

ADVANCE facilitated the formation of a national technical steering committee to oversee the implementation of the recommendations outlined above. The role and functions of the technical committee is to provide guidance and direction to the strategic partner. After the strategic partner has been selected, the committee will meet regularly with the partner and provide oversight responsibility to ensure that they perform according to the terms of the agreement that will be signed. The Current membership of the technical committee has been presented in Annex 1

Lessons Learned

The public forum held in November 2010 confirmed that it is absolutely important to share the results of any mapping exercise with stakeholders and potential users. Many organizations are aware of the data and information gap within their operations but do not have the expertise to apply modern technologies in filling this gap. Our public forum provided ample opportunity for businesses to see how GIS technologies can help address their operational challenges especially regarding managing and developing effective supply chains.

SECTION 7.0 MONITORING AND EVALUATION

The focus of monitoring and evaluation during the period under review was finalizing of program targets, finalizing the program performance monitoring plan, upgrading the program MIS database to facilitate easier data entry, retrieval and analysis, assessing data quality and establishing a strategy for data quality assurance, strengthening staff capacity in assessing and attributing change, analysis and report writing, and an initial assessment of program outcomes after one year of implementation.

7.1 PERFORMANCE MONITORING PLAN, INDICATORS AND TARGETS

During the period under review the program performance monitoring plan was updated and a final version submitted to USAID for approval. Key revisions to the document were as follows:

- Revision and/or setting of annual and life of project targets for all ADVANCE performance indicators;
- Update of Performance Indicator Reference sheets to reflect revised indicator definitions where applicable as well as baseline values and annual targets for respective indicators;
- Update on activities in the original version of the plan that have since been completed
- Removal of IEHA indicator on volume and value of international and intra-regional exports of targeted commodities and ACDI/VOCA indicators relating to establishment of new vertical linkages by microenterprises and beneficiary use of market information systems;
- Revision of performance indicator definitions where necessary to reflect program context.

Copies of the monitoring and evaluation plan have since been provided to all commodity team leaders and monitoring and evaluation officers. Further revisions to the PMP are anticipated in light of the upcoming Feed the Future Program. Initial discussions have been held with USAID's METSS team and ADVANCE will conduct data collection exercises to obtain data on FTF indicators that are not currently covered by the ADVANCE PMP.

7.2 DATA COLLECTION, ANALYSIS AND DATA QUALITY ASSURANCE

7.2.1 MANAGEMENT INFORMATION SYSTEM DATABASE UPGRADE

The ADVANCE Management Information System (MIS) database underwent further upgrades in response to feedback from the field and also to facilitate easier data entry and retrieval. Major changes included modifying data templates such that total numbers of actors disaggregated by field office, commodity, and gender could be determined instantly without having to further

export data; and incorporating data fields for supplementary indicators developed during FY 2010. User names and passwords were also obtained for commodity team leaders, project managers and technical specialists to allow them “read only” access to the database. The MIS database has been used frequently during the past three months as a source of program data especially on numbers of and background information on actors engaged. Upgrading of the database is an ongoing process and additional upgrades will continue to be made as and when necessary.

7.2.2 RECRUITMENT OF DATA ENTRY ASSISTANTS

During the period under review seven national service personnel were recruited to support the Accra and field offices with data collection and entry. This has greatly improved the time lag between data collection and data entry, the volume of data entered on the MIS database, and the speed at which the M&E team is able to respond to requests for information. It is strongly recommended that the highest performing of these individuals be retained to provide continued support in this area.

7.2.3 DATA QUALITY ASSURANCE

A data quality assessment, focused on the USAID Economic Growth indicators was conducted in October 2010. Key issues arising from the assessment were the need to ensure synchrony between ADVANCE and IEHA indicator definitions; to put measures in place to reduce incidence of double counting, especially in relation to counting of technologies introduced; to ensure that classification of households as rural or urban was consistent with Ghana Statistical Service definitions; and to improve the accuracy of counts of vulnerable household numbers and to improve timeliness of data entry on the MIS database. A second data quality assessment focusing on all program performance monitoring indicators will be undertaken in FY 2011.

A data quality strategy has been developed for the program and describes how ADVANCE will ensure the relevance, reliability, precision and timeliness of all data that is collected, recorded, analyzed, reported and used for decision making –. The draft strategy has been presented to the M&E team and will be finalized and shared with the wider program team during the next quarter.

7.2.4 HARMONIZATION OF GIS AND M&E DATA COLLECTION

In line with the program strategy of taking advantage of synergies between GIS and M&E functions, the ADVANCE M&E and GIS unit collaborated to provide refresher training on GIS mapping for all field staff. A mapping exercise was subsequently undertaken to map the locations of supply chain actors and support services, specifically, processors, buyers, input dealers, mechanized service providers, financial institutions. An additional mapping exercise is scheduled during FY 2011 to map the location and farm areas of producers in the program supply chains. The data collected will be added to the existing database for citrus and contribute to improving the accuracy of farm area records and other associated indices such as crop yields, and technology adoption for other crops.

7.3 STAFF CAPACITY DEVELOPMENT IN MONITORING AND EVALUATION

During the reporting period 2 quarterly review meetings of the ADVANCE M&E team were held. M&E officers were provided with additional training on data entry, report generation and processing of data from the MIS database. Staff was also given the opportunity to undertake peer

reviews of progress reports from field offices other than theirs and to share their observation and make recommendations for improvement. This exercise was intended to improve M&E officers' appreciation of the importance of quality reporting. M&E officers were also provided with additional orientation on data quality based on the draft data quality strategy. M&E officers will in turn provide similar training for their respective field office staff during the second half of FY 2011.

7.4: SUMMARY OF ACTIVITIES AND RESULTS FOR THE PERIOD

A summary of key planned activities and their respective status of completion are presented in

Table 7. 1: Summary of Activities Planned for 2011 and Status of Completion

M&E Component	Activity	Target	Status
Data Collection and Analysis	Update MIS database to make it more user friendly	MIS database fully operational by April 2011	Database upgraded. Used more frequently as source of information on program beneficiary profiles
	Develop and implement data quality strategy	Data quality strategy document produced and shared with program staff Program monitoring data is valid, reliable, precise and timely	Draft data quality strategy developed and presented to M&E team
	Conduct internal data quality assessment	Plan for addressing data quality issues developed and implemented	Semi-formal assessment conducted by USAID in October 2010
	GIS mapping of supply chain actors	Map of commodity supply chain actors produced	Mapping of supply chain actors excluding farmers completed
Impact Assessment	Annual data collection exercise for project outcome assessment	Progress towards achievement of project outcomes and impact determined	Data collection from sample of farmers conducted to measure household income, gross margins and crop yields
	Data collection to verify baseline data on household incomes, crop yields, gross margins and size of farm holdings	Validated data on baseline indicators of interest collected documented	Outstanding
Staff capacity development	Orientation on use of MIS database for M&E officers and other ADVANCE staff	MIS database a primary reference point for information on program status	Additional orientation provided for M&E staff. M&E staff will organize orientation for other field staff.
	Orientation on data collection using crop cut survey and calculation of crop yields and gross margins	Program has accurate data on crop yields and gross margins	Outstanding. To be undertaken in second half of FY 2011

7.5 CHALLENGES

A major challenge we have faced is obtaining accurate data on farm sizes to determine area under cultivation and also to enable calculation of crop yields, areas under improved technology and gross margins. Farm sizes to date have been based on farmer estimations rather than direct physical measurements and findings from a citrus mapping study conducted in FY 2010 show that farmer estimates of their farm sizes may have a margin of error of as high as 40%. GIS mapping of cereal and fruit farms together with crop cut surveys are scheduled to take place during the second half of the reporting year to provide accurate measurements of farm sizes.

A review of baseline data during the finalization of program targets raised some questions about the accuracy of baseline data on household incomes, gross margins and crop yields. For example, baseline household incomes were high compared to the national average. In addition, yields for rice and pineapple were considered to be rather high. In the particular case of pineapple, while the program focus is on smooth cayenne, the baseline figure did not distinguish between MD2 and smooth cayenne varieties. This posed a challenge in setting targets. A follow-up analysis of baseline data set as well as additional targeted data collection will be undertaken during the second half of FY 2011 to assess the validity of baseline data.

Ghana Agricultural Development and Value Chain Enhancement Project (ADVANCE)

Second Semi-Annual Report – Volunteer Summaries October 1, 2010 – March 31, 2011



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30th April 2011

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This report covers activities under USAID Cooperative Agreement No. 641-A-00-09-00026-00.

ADVANCE Volunteer Assignment Summaries

QuickBooks Training, with Golden Web Limited: Richard Leslie Torian, September 25, 2010 – October 16, 2010

Golden Web Limited is a limited liability company (GWEB) incorporated in 1982 and situated in Kumasi, Ashanti Region. GWEB processes; soybean, copra, sunflower seed, groundnuts and palm kernel into oil. GWEB sells most of the vegetable oil and cake on the Ghanaian market, however, about 90% of the oil and 80% of palm kernel cake is exported to the EU. In 2010, Golden Web processed 30 metric tons of soybeans daily out of the total installed capacity of 50 metric tons. Currently, production has reduced to 15 metric tons a day because of the inadequate supply of Soybean. Golden web has an oil refinery with an



Richard Torian training Mbride, the accountant of GWEB Limited on QuickBooks

installed capacity of 10 metric tons per day which can produce edible soybean oil and other vegetable oils for the Ghanaian market.

In line with the company's aggressive expansion policy to increase production capacity as well as equipping their human resource to take on roles to accommodate this expansion, GWEB has an agenda to strengthening their finance and administration department to operate more efficiently. GWEB had experienced some difficulties in using the Quickbooks accounting software they had purchased and asked for technical assistance to upgrade the skills of accounting staff. The company wants to train on effective application of finance and administrative procedures for factory operations. This will in turn ensure better record keeping that leads to better cash flow and eventually avenues for accessing finance for possible expansion. Richard Torian, an accountant, volunteered to work with Golden Web. Richard observed that QuickBooks software was not being used to its full potential by the company. Two accounting staff was trained on inventory tracking; sales order; and the full use of QuickBooks reporting capability. The following were his recommendations:

1. Golden Web should institute a better system of record management. Record management should be more planned and organized. Records and files are randomly kept in an unorderly fashion. A review should be conducted of the Golden Web record management requirements. Systems to meet these requirements should be developed and used. Records should be easily accessible, e.g. in filing cabinets, to only those needing to use them and be kept in a designated location. A numbering and category (naming) system

should be developed. Personnel should be assigned responsibility for maintaining the records.

2. The general manager should focus on improving administration. A system of continuous evaluation and improvement should be put into place. More emphasis needs to be placed to improve administrative procedures. The emphasis on improving administration needs to come from the CEO through the general manager who should lead the effort to improve procedures, record keeping, and other aspects of better administration. Employee responsibilities should be clearly understood and in writing and feedback should be provided to the employees on their performance.
3. Internal control procedures should be improved because most transactions are based on cash (large amounts of cash are handled). Currently there are no effective procedures for recording these cash sales and controlling the cash until they are deposited in the bank. The company must establish better internal control procedures to decrease the risk of losing cash and improve administration in three areas: 1) receipts from sales; 2) payments to vendors; and initial handling of bank account statements.
4. The Company should take steps to improve financial performance. For example, the gross profit for the period 1 January to 30 September 2010 (assuming accounting is correct) is approximately 20%. At least a gross profit of 25% is required for Golden Web to breakeven (net income = 0) and a greater than 25% is needed to become profitable. Reducing costs is one way of becoming profitable. Budgeting has been one approach to managing (controlling) costs in many companies. QuickBooks has an easy to use budgeting feature. It was therefore suggested that company should use the QuickBooks budgeting feature. Increasing sales and sales prices at lower direct costs is another way of increasing profitability. QuickBooks has a good capability to track customer sales and provide information on those sales and customers. It was recommended that Golden Web use this QuickBooks feature as part of their marketing program.
5. Staff of GWEB should be trained so that they are come more familiar with the features such as inventory tracking, sales orders and budgeting. After this assignment, Golden Web contracted 41solutions, an IT company, based in Accra to further build their capacity to use Quick books accounting software application effectively.

Commodity Trading Strategy, with CCH Finance House: Maurice Johnson, September 16, 2010 – October 30, 2010

CCH Finance House Limited (CCH) is a relatively new company created for the purpose of providing greater transparency and liquidity in Ghana's commodity trading and trade finance arena. Hitherto, apart from cocoa, there has been little or no aggregation of commodities across Ghana even though the country produces marketable quantities of rice, maize, sorghum and other commodities. CCH wants to set the pace and act as a catalyst to develop the standardization of risk management for commodity trade financing. This includes standardizing commodity grading and warehouse certification and backing tradable commodities with warrants. Overtime, CCH hopes that these changes will set the scene for an eventual Ghanaian commodity exchange. The project will entail working with a number of stakeholders including farmers and farmer based organizations, brokers, aggregators, exporters, financial institutions, collateral managers, logistics specialists, developmental institutions and Non-Governmental Organizations (NGO's).



Maurice Johnson (Left) with Mr. Anning, the CEO of CCH Finance House

This initiative aims to fundamentally change the supply chain dynamics for dealing with commodities in Ghana. CCH will also work to link commodities traded in Ghana directly to the formal financial system by ensuring the universality of the assets class and also safe lending to the under-financed commodities traders and supply chain. CCHFL asked for technical assistance from an experienced commodity trading specialist volunteer to assist them to develop a trading strategy and attendant safeguards in deal execution and also to create manuals for their operating systems. Maurice Johnson, a commodity trading specialist volunteered for this assignment and made the following recommendations:

- CCH should consider a strong focus on opportunity recognition and structuring/advising of transactions for placement and other, fee based opportunities. Possible products include structured trade, corporate, Private –Public Partnership (PPP) and asset-based financing. In addition, brand recognition should be expanded to encourage market knowledge.
- CCH should develop a broad network of banks, EM funds and development agencies to place debt and equity from the project and structured trade transactions developed by CCH. These will be structured and placed initially by CCH with commensurate fees.
- CCH should develop the potential to manage and place commodity traders on behalf of itself for portfolio management and 3rd parties. This will require skilled traders and

operations to handle market knowledge, appropriate pricing and effective timely settlement.

- CCH should develop the potential to manage and place asset backed derivative notes to the investor market based on a portfolio of commodity trades on behalf of itself and raise money as a fund for investors.
- Risk/Compliance are essential to any regulated organization and it is **recommended** that Risk/Compliance should not “solid-line” report to the business units or CEO but directly to the Compliance Committee of the Board of Directors.
- The Risk/Compliance group should form part of the official CCH approval process. **Each** transaction should be reviewed for risk and possible uncovered exposure by CCH to reduce risk.
- CCH should form a Transaction Approval Process (“TAP”) where the business leaders, risk group and CEO are presented with the aspects of the transaction. Transactions over a certain cash amount, tenor or with unusual aspects such as commodities stored in an unbounded warehouse facility or across national borders, etc. should be brought to the attention of the BOD.
- The CCH transactor, trader or other party should present a new or revolving transaction to the TAP for review of CCH exposure – in total and for each transaction.
- Adequate support staff should be added on as-need basis depending on business flow. It is **recommended** that all transactions should be performed in-house and on in-house equipment. Cell-phones and Blackberries or similar communication devices are NOT permitted on the floor. Therefore, each trader/transactor should have a CCH phone, laptop/computer and approved access to a central server. All emails should be from CCH hosted server for records.
- The **CCH website** should be secure and potential for cash transaction should be explored. There are other programs such as “E switch” that may facilitate cash transfer securely and with records.
- Transactions should be encrypted and safeguarded. It is **recommended** that a delegation of authority be made such that an information chain will exist in the event of emergency and dangerous conditions. In addition, offsite facilities should be identified where necessary staff can congregate to finalize or settle any outstanding issue, exposures or settlements. Copies of all necessary information and accounts should be maintained in a secure area.
- All files, electronic and paper should be protected from natural disasters. All rooms of the office facility must contain fire extinguishers and smoke alarms. Paper file containment

rooms and servers should be kept at the approved level above sea-level to prevent flood damage.

- This is a bold new business for Ghana and incorporates areas that are new to the region, highly technical and prone to mistakes and potential liability. Current staff and many of those interviewed do not have the necessary skill sets to adequately service this effort. It is **recommended** that every effort be made to train staff in a professional environment in a larger market. There are several training courses and this is but one example: <http://www.iff-training.com/understanding-commodity-markets-commodity-trading-training-course/88/>. Education grants may be available for this activity.

CCH Finance House has a provisional license from the Bank of Ghana (BoG). They have indicated that they are working on completing their operation manual after which .BoG will inspect their systems and procedures. With approval from BoG, CCH will commence operations fully after being issued license to operate. After which they will go ahead to hire commodity trade managers who will be trained.

Website Development, Vester Oil Mills: Chad McEvoy, September 16, 2010 – October 30, 2010

Vester Oil Mills Limited is located in Kumasi, Ashanti Region. The company processes soybeans with mechanical expellers into soymeal for livestock and poultry feed and crude soy oil for the paint industry. The company also produces, crude peanut oil/meal, crude palm kernel oil/meal. Vester Oil Mills Limited sells to buyers in the poultry, oil and chemical production industries in Ghana. Poultry farmers use the cake for feed and are now demanding soybean meal with less oil. The company began a door- to- door marketing strategy to reach out to smallholder poultry, oil and chemical producers in the country to increase her client base but this has become expensive. In order to reduce this advertising cost, Vester plans to reach her clients by developing a website. This will enable clients, investors and other stakeholders get access to relevant information about Vester's products and to place orders via the internet. Vester asked for technical assistance in website development. Chad McEvoy, a website developer volunteered to assist Vester Oil Mills Limited made the following recommendations

- Vester Oil Mills Limited should update the website on a regular basis and add a news item to the home page at least once every couple months.
- Vester should promote the website by adding the URL to their business cards, promotional materials and product labeling. It would be a good idea to send an email to friends and clients informing them of the website and encouraging them to visit. They should also be encouraged to follow the company on Facebook. Once Vester Mills has a following on Facebook they should begin posting semi-regular updates to the page in order to increase engagement and drive traffic to the website.
- Vester Mills should develop and should keep track of sections and features it adds to the website as the company grows. In about four years the website should be reevaluated and potentially redesigned to meet new business requirements—for example, they may wish in the future to build in ecommerce functionality that allows customers to order shipments of refined oils easily over the web.
- Vester should frequently check the new info@vestermills.com email inbox. This inbox is where the Contact Us form sends its submissions. It is important to promptly respond back to any inquiries that come via that form.

The website (<http://www.vestermills.com>) and the facebook page (<http://www.facebook.com/pages/Vester-Mills>) have improved the company's marketing operations as more customers are identified. The company has been updating information on these sites as recommended.

Promotional Plan Design and Public Awareness of Organizational Activities. With the Ghana Grains Council: Denis Lee Oguzu, August 15, 2010 – November 5, 2010

Organizational Development, Maurice Johnson, November 18, 2010 – December 18, 2010

The Ghana Grains Council (GGC) is a private-sector entity formed on the 18 March, 2010. The GGC is a private sector driven body responsible for setting warehousing certification requirements, enforcing practices and policies which includes applying uniform grades and standards to grains and pulses. Warehouse Receipts concept is fairly new in Ghana and many players in the industry are ignorant on how it works. To create this awareness and highlight the benefits of this to stakeholders, GGC needed to develop a good promotional plan and formulate strategies to create public awareness of the benefits of the council's program and to promote the Warehouse Receipt System. Denis Lee Oguzu volunteered to work with GGC staff towards realisation of this goal. Denis made the following recommendations after working with GGC for three months:

- GGC pilot should prioritize tangible results among farming communities and initiate a process leading to bringing World Food Program (WFP) on board.
- GGC should engage and involve the government, develop an arbitration system before pilot warehouses are certified and expedite the process of putting in place a legal regime.
- The Grains Council should develop a basic system for monitoring warehouse operations
- The council should consider annual stakeholder conference, clarify and agree on membership fees and WRS processes and exemplary subscription by boards to boost confidence of others.
- Increase collaboration and networking among stakeholders, follow up with warehouses on some of licensing requirements and consider electronic warehouse system to convince banks.
- GGC should expedite process for website development and email account acquisition and Agreement on slogan for GGC.
- The council should enlist assistance of risk and banking specialist to secure participation of banks and maximize opportunities presented by conferences and forums to secure wider stakeholders participation.

GGC requested the services of another volunteer consultant to assist them to formalize the warehouse receipt process. This included finalization of a viable business plan and formulation of strategies that involve the financial sector in the council's activities. Maurice Johnson volunteered to assist GGC with this assignment. Maurice Johnson recommended that GGC should establish standards and receive concession from Ghana Government as a regulatory

agency and arrange funding through a third party vehicle to retain objectivity of the GGC regulatory function. He also recommended that GGC should renovate the warehouses to generate volume to trade and work with aggregators to stock warehouses. The councils should also work with financial institutions and enlarged membership to generate passage of Warehouse Receipt Act, issue receipts and trade on commodity exchange once volume has reached critical mass. On the issue of increasing membership and reaching out to more stakeholders Maurice recommended that the GGC outreach team embarked on a membership drive exercise.

The GGC outreach team identified potential members of the council; warehouse Operators, Grain Depositors, Farmer Based Organizations, Aggregators, Grain Buyers, Processors, Feed millers, Exporters or Pest management companies, Financial Institutions, Insurance Companies, Collateral Management Companies, ICT Companies, Agricultural Input Dealers and Government. Ministries A total of 86 organizations were contacted by the team. 82 of the organizations were located in the Greater Accra Region and 4 in the Northern Region of Ghana. Out of the total of 84 organizations contacted, 27 organizations have decided to become members of Ghana Grains Council. 7 have already paid members fees and another 7 are preparing to pay membership fees while the remaining 13 are making decisions on membership category. The next line of action is to extend membership drive efforts to key stakeholders identified within the Brong Ahafo and Ashanti Regions of Ghana which are the major grain producing regions to further pursue potential members for the council.

Repairs and Refurbishment of Seed Machinery, Ghana Seed Inspection Unit(GSID) Robert Cooperrider, December 1, 2010 – December 22, 2010 and February 24, 2011 – March 12, 2011

Bob Cooperrider, a volunteer agro industrial engineer worked with The Ghana Seed Inspection Division (GSID) is the only recognized seed certification agency in Ghana that enforces seed regulations. GSID was given this mandate after the closure of Ghana Seed Company in 1989. Since then, GSID has supervised the inspection and certification of seeds in Ghana. The GSID has regional offices, one of which is located in Tamale. The office conducts inspection of seed farms, undertakes seed conditioning, seed quality assessment, seed certification and seed storage for the numerous registered seed producers in the northern region. The certified seeds are then made available to the general farming population in the region and beyond. The Tamale GSID seed processing facility does not have sufficient capacity to process the entire annual certified seed needed in time for the following planting season. The existing processing equipment is 38 years old and worn out. Processing capacity has continued to decline over time. The machines had never been refurbished with new manufacturer parts. The machines were in such bad condition that either one or both of them could fail at any time. Some new parts are available and must be purchased and installed before the 2011 processing season begins in January 2011 to hopefully keep the machines running for one more season. The American built processing line installed in 1986 was incorrectly designed and improperly installed. The line was never tested and is non-functional. The equipment is now 24 years old and in poor condition. It is not possible to restore the processing line to functionality without replacing most of the equipment and reinstalling the line. The Clipper 68D air/sieve cleaner can be reconfigured and refurbished to provide some supplemental processing capacity. This should be done before the 2011 processing season begins in January. Without supplemental processing capacity, hand winnowing of some of the crop will be required again causing many delays in preparing the seed crop for planting in 2011. Bob with the assistance of GSID/MOFA solicited for funds from the Millennium Development Authority in Ghana (MiDA) to purchase the spare parts from UK.US and Germany to refurbish the machine. Bob received the funds (\$ 14,000) from MiDA on time but unfortunately, the equipment parts could not be cleared from the ports on time when Bob arrived in Ghana. On February 24, 2011, Bob return to GSID to finally install the equipment parts to keep the seed machinery running. Both GSID and MiDA



Robert Cooperrider working on the Seed Cleaning machinery at GSID

were very appreciative of the effort of Bob. At the end of the assignment, Bob made the following recommendations:

- GSID should keep the existing machinery running for one more season of seed processing. They purchase the critically needed parts for the smaller of the two German seed cleaners to keep it running for the next processing season that begins in January. Without purchased parts this machine is subject to failure at any moment. The manufacturer has verified these parts are available. In addition, GSID should purchase new belts, pulleys, and elevator buckets for the larger of the two running German seed cleaners to hopefully extend its life one more season. No manufacturer parts are available for this machine.
- GSID should reconfigure the Clipper 68D air/screen cleaner for supplemental use. From the non-functioning American built seed processing line use three pieces of the existing equipment plus two new motors to set up the existing Clipper cleaner. The machine has been made functional. But the supporting equipment around it must be refurbished and/or reconfigured. This establishment is far from ideal. But it gives the plant some additional capacity to temporarily make up for the continually deteriorating capabilities of the two running machines.
- Ghana Seed Inspection Division should purchase two new parallel seed processing lines of modest capacity. New recommended equipment will meet current seed processing needs. This equipment will have sufficient additional seed processing to support the Ghana Ministry of Food Agriculture commitment to grow Ghana agricultural production.
- GSID should establish an entity that will provide maintenance capabilities and tools, machine parts, procedures, and budget needed to keep the facility running at peak capacity and efficiency.

Marketing Strategy and Brand Development with Sunripe Food Processing Limited – Abu Sayeed - 25 August, 2010 End: 19 October, 2010

Sunripe Food Processing Limited is a privately owned limited liability company. The company has which has three brands of products fruit juice. The premium plus brand is made of 100% fruit juice with no additives, preservatives or coloring. It includes drinks suitable for infants, and cancer preventive remedies. The Gold Star brand contains 50% juice for the price sensitive market and the Silver Star brand, 25% real juices in fizzy drinks and energy drinks. As an entrant in the juice industry Sunripe had to develop a strategic marketing and brand development plan that allows the business to concentrate its limited resources on the greatest opportunities to increase sales and achieve a sustainable competitive edge over juice brands. Abu Sayeed

volunteered to help Sunripe in her branding and marketing strategy. He assisted Sunripe to address the short falls in their marketing model made the following recommendations:

- Sunripe should develop sales manual, distribution operation manual, training manual, trade returns policy, sales operations manual and merchandising manual to guide the marketing team in their marketing operations.
- Sunripe should develop credit payment policy, channel operations margin and additional expenses for regional warehouse operations for the fruits.
- The company should improve on their supply chain and loyalty contract with farmers. In the juice industry, farmers are the key factors that ultimately drive the industry. Sunripe should implement or introduce sustainable contract agreements with the farmers. Options are open for the farmers due to increasing demand; therefore failure to do this will ultimately affect the business in the near future.
- Sunripe should build a stronger human resource and finance team. The company should revive its human resource policy, organizational development, payment method and re-injection of working capital.
- Sunripe should diversify its production line instead of their sole reliance on juice. Juice can still remain the major line of business for Sunripe, but at the same time the same resources can be used to produce water, jam and other products.

Operations Assessment & Business Enterprise Development with 3K&A: Heinz Zemke - 14 November 2010 – 5 December 2010

3K&A Industries Ltd was incorporated in March 2006 as a limited liability company and started vegetable mill oil operations in April of the same year. The company is situated on a 4.5 acre land, in Asenemaso, near Abuakwa in the Atwima Nwabiagya District, Ashanti Region. It operates a vegetable oil mill with a total capacity of 40MT/day. The company processes 21 tons of vegetable oil (copra oil, soybean oil, palm nut oil, palm kernel oil and shear oil) per day. Due to frail administration procedures, low productivity, poor market development and ineffective supply chain management systems all operations have ceased. Heinz Zemke assessed the financial and operational capacity of the firm, and assisted in developing a detailed administrative and operations manual for 3K&A. Recommendations from Heinz are as follows:



Heinz Zemke , with 3K&A the production Manager

Financial capacity

- The company needs about 350.000GhC to turn from ‘testing the operations’ into real ‘starting-up’
- The debts at Barclay’s bank 1,684,000GhC needs restructuring, probably repayment over a 3-5 year period or replaced by equity from an incoming investor (i.e. Anona)
- Longer term (than 3-5 months) operations need review of contractual set-up with farmers (suppliers)

Operational capacity:

- the company should install an emergency electricity generator and a bottling line to produce consumer goods
- 3K&A should develop and stabilize product quality according to market requirements

Supply Chain

- 3K&A should establish a framework contract with suppliers need to ascertain (collectors/farmers) and buyer (company) a sound relationship and reliable supply of raw materials Increased presence of the company (staff) close to the farming regions would contribute to the relationships and support productivity improvements by farmers.

Administrative and Operational Manual

- As the staff just returned from a 2 years absence, only rudimentary administrative routines exist in informal format. A set of priority rules and routines has been supplied to the Management. Training in Safety at Work, Company Routines, Office Administration, Competencies has to be considered for the 1-2 years to come, to be included in the budget and implemented once organizational capacities are filled to a larger extend.

The company has not started implementing the major recommendations that were made by the volunteer. The company currently is highly indebted to Barclays bank to the sum of GH¢ 1,684,510 and Venture Capital to the sum of GH¢ 100,000. 3K&A is looking for investors to partner in making these changes.

Farm Record Keeping, Farm Budget Development and General Farm Management Practices with Asuokaw and Owurakesim Citrus Farmers Associations, William Eyman - March 6, 2011 – March 19, 2011

Asuokaw and Owurakesim are one of the main citrus growing areas in the Eastern Region of Ghana. These two associations have been dormant during the periods when citrus was not in high demand. ACDI/VOCA ADVANCE Program is working with existing citrus associations and also reorganizing collapsed citrus associations by providing technical assistance in group dynamics to help strengthen these associations to take advantage of the increasing demand by citrus processing companies. William Eymam trained the two associations on farm record

keeping, budgeting and general farm management practices. The volunteer trained 6 women and 20 men of Asuokaw Citrus Farmers Association and 9 women and 18 men of Owurakesim Citrus Farmers Association on the above mentioned topics. William recommended that a follow up or monthly assessment be made by ADVANCE to assess if the members of both cooperatives are using the financial material they were trained one within one month. William recommended that a refresher course be



William Eyman in a training section with Asuokaw and Owurakesim Farmers

conducted several times for both groups by ADVANCE staff in Nkawkaw. As a result of this technical assistance, 23 out of the 26 member farmers of Asuokaw citrus farmers had access to credit from South Akim Rural Bank, worth \$3,226 on 9th October, 2010 and have been able to repay the loan ahead of the payment schedule. The South Akim Rural Bank who were monitoring offered another credit facility worth \$17,420 to the two groups.

FtF Volunteer assignment Summaries (October 2010-March 2011)

Co-operative Development and Strategic business plan development for the Northern Regional Vegetable Union: Michael Mckeown, 29th November, 2010 – 17th December, 2010.

Northern Regional Vegetable Union is a cooperative of vegetable farmers who cultivate carrots, cabbage, spring onions, garden eggs, lettuce, green pepper, cucumber and other local vegetables. Though the cooperative has been in existence since June 2009, it has not been able provide any services to members. They had no improper documentation of their activities, contracts and negotiations. Also they cooperative did not have a strategic business plan which will enable them attract financial institutions provide credit for their farming activities. Michael Mckeown a volunteer assisted the members to develop a strategic business plan. He trained thirty (30) farmers; seven (7) women and twenty three (23) men on how a cooperative should operate contract negotiation and signing, preparation of budgets and implementation of planned activities. He made the following recommendations:



Michael Mckeown interacting with executives of the NRVU

- Assist NRVU identify suppliers for seed, fertilizer and pesticides. Identification of potential suppliers should include pricing, seed quality and appropriateness for the Northern Region, availability of credit terms, and length of time to replenish inventory levels (delivery times, especially during high planting seasons).
- Look at the prospective for donated seed that can be paid for by the Union with the resulting funds being used to expand inventory or to develop other services for members.
- Assist or identify an individual or organization that can assist in the development of a budget, records and operating procedures for operating a store.
- Assist or identify a well-experienced individual or organization that can assist in the development of records and operating procedures for a savings and loan program.
- Conduct a market analysis of member's produce versus non-member production of similar produce. Identify sales outlets and potential for new outlets. New outlets may

include local grocery stores, shipping to other cities, or setting up a member-owned outlet store. Explore pricing, volume and quality barriers and opportunities.

- Assist NRVFU to identify sources of loans for use in setting up the member store and/or sources of micro-loans to the farmer-members for purchase of crop inputs.
- NRVFU needs to improve its membership records. This will be properly maintained by a computer. Assist NRVFU leadership in identifying an affordable approach for doing this.
- Assist NRVFU in exploring the possibility of assigning a development assistance volunteer from the US Peace Corps or UK VSO or similar organization.
- Periodically (quarterly), review the entire Strategic Plan with the NRVFU leadership to assess and encourage progress.

Cooperative Development, Awurade Na Aye Cooperative: Bryce Malsbary, October 5, 2010 – October 16, 2010

Awurade Na Aye is an association of 33 vegetable farmers who grow tomatoes, garden eggs and green pepper. Over the years of its existence, the association has kept little records of its operations. The members and leaders of the association aspire to operate more efficiently as a cooperative that can source ready markets for members' produce, effectively handle contract signing and negotiation, improve on their recordkeeping, develop a five year strategic plan to ensure association sustainability, generate profits and attract new members. Bryce Malsbary, worked with the association to train its members on the identification and implementation of best practices on effective business operations and also help design a five year achievable business plan. He trained forty (40) farmers; ten (10) women and thirty (30) men. Bryce recommended that;



Bryce Malsbary in training session with members of the Awurade Na Ye Cooperative

- The board establishes additional committees to equally distribute the cooperative activities and maximize the efficiency of achieving goals and objectives.
- The association should develop a board manual which contains: all legal documents, names and contact information on each board member, board policies, organizational chart, job descriptions of board members, financial record keeping and control policies, marketing activities and strategic plan.
- Develop a new board member recruitment program focused on recruiting future board members who possess the necessary skills to strengthen the quality of the board.

- Develop a new board member orientation program to acquaint new members with their responsibilities and expectations.
- Develop a skill matrix of existing members and determine what skills will be needed in the future to maximize the effectiveness of the board.
- Write job descriptions for each board officer that clearly listed the responsibilities and necessary qualifications to adequately discharge the duties of the position.
- Keep all board documents in one central secure location.
- Complete an annual board performance assessment.
- Develop a new member application and retain with the board documents.

Business Development Strategies, with Farmer Support Services and Communities Utilities (FASCU):Refugio Rochin, September 20, 2010 – October 3, 2010

Farmer Supportive Services and Community Utilities (FASCU) is an NGO that provides farmer training and assistance in agricultural production, processing, marketing, entrepreneurial activities and development within the Tain and Wenchi communities in the Brong Ahafo Region of Ghana. FASCU intends to reach out to about 2000 farmers in the rural communities in the Brong Ahafo region to contribute to the general improvement in the quality of life of the rural farmers especially the very poor, but is financially constrained. FASCU wants to develop proposals that will leverage resources from donors to streamline theirs and their clients' operations. FASCU approached the volunteer program for technical assistance on business development strategies, business plan development and proposal development and how to effectively collaborate to enable them access operational resources. Refugio Rochin volunteered to work with FASCU. He trained 4 male staff of FASCU on how to develop business strategies and effectively develop and market proposals for funding. Refugio made the following recommendations:



Refugio Rochin (Left) with Mr. Nuamah-Manager of FASCU (Middle) and other staff of FASCU

- FASCU should concentrate its energies in drafting and communicating its proposals for funding.
- FASCU should develop reports and data-base information on its two priority topics:
 - a) Warehouse Drying and Storage for Maize Growers
 - b) Land preparation assistance for farmers with few resources to have their fields prepared, cleared and developed for farming on a timely basis.
- He strongly encouraged FASCU to focus first on its plans for a “Pilot Project for Medium Scale Warehouse Drying and Storage Facilities with linkages to “Market Women” and “aggregators” in the food system (from farm to consumer).
- FASCU should finalize a proposal for a Pilot Project by adding more facts and figures regarding warehouse dimensions, grain-drying systems, farmer production, yields, market transactions, income and related.
- FASCU should develop an Operating Budget for Each Year in the Plan (as it increases membership). In that regard, advancing fundraising plans and initiatives should be a

weekly activity and conducted with clear aims and timelines. In that regard, we add our list of details below pertaining to the process needed for consistency in fundraising.

- FASCU needs to continue its ties with former donors and NGOs who have sponsored and/or worked with FASCU. Research on fundraising has shown that the best sources for funds are former and continuing sponsors and supporters. It is relatively less costly and more successful to develop funding and new initiatives with those who know you.
- Alignment is needed with others in the region and nation. For example, FASCU should consider working with PCV Wayne Tilton on business plans and see how his work is addressing his tie to the international organizations for cashew growers – especially the newly emerging initiatives for Fair Trade Cashew promotion.
- FASCU should promote a variety of ways that it can be helped. For instance, Earmarked Donations, whereby people will pay for a specific part of the project, or will pay a certain amount toward that part. Consider a way for employing in-kind Donations – e.g. non-cash volunteers consisting of eco-tourists and/or college students.

The implementation of the recommendation on the proposal writing training aspect of the assignment has led to a partnership with the Peace Corps. This partnership also resulted in winning a contract of \$4000.00 from the United States President's Emergency Plan for AIDS Relief (PEPFAR) in collaboration with the Ghana Aids Commission to sensitize the large farmer population on issues of HIV. With this project, FASCU receives training from the Aids commission; they then sensitize the heads of the farmer association who in turn extend education to the farmer community. Wayne Pylon a Peace Corps volunteer is making efforts to link FASCU to other partners who can provide assistance.

On the issue of fundraising, there have been a number of attempts directed at raising funds. With the experience gain from Proposal and grant writing from Refugio, FASCU wrote a proposal to the International Centre for Development Oriented Research in Agriculture (ICRA) and was recently selected as one of the candidates for the Platform for Partnership between Europe and Africa Research Development project. FASCU is awaiting the date for the inception workshop. The fund for FASCU has not yet been indicated but the organization mentioned that they will discuss and allocate the funds during the inception workshop.

Factory Accounting Management Systems, Ghana Nuts Limited (GNL): Deborah Forti, January 16, 2010 – February 5, 2011

Ghana Nuts Limited (GNL) was established in 2001 as a wholly owned private limited liability company. It commenced operations as a commodity trader in Soybean, groundnuts, cashew, shea nuts and sesame to Europe, UK, India and Japan. It has remained focused on their core business of processing and has installed state of the art processing machines to process RBD (Refined, Bleached and Deodorized) soya and cotton seed cooking oil. GNL has become a world-class producer of soybean oil and soybean meal, cotton seed oil and cotton seed meal as well as shea butter. GNL has a 75,000mt plant capacity of soybeans, 31,000 metric tons of shea cake and a 36,000metric tons oil refinery. The company has a total workforce of 769 people of which 337 are women. GNL also has about 14,500 out growers in the northern region and the Brong Ahafo region of Ghana respectively and has a highly qualified management team. GNL is growing at a fast rate and as such the management plans to strengthen the finance department to operate more efficiently. In view of this, GNL has plans to set up a factory management accounting system that is in line with their operations but lacks adequate knowledge on how to make this system work effective. With a large work force (769) and 14, 500 outgrowers it becomes increasingly difficult to develop efficient financial and administrative procedures that are in line GNL's business operations. Most business crumble as they grow without efficient management systems. It is indeed imperative to support large businesses such as GNL so workers plus the smallholders who work with GNL will continue to be in business. Deborah Forti, a management accountant volunteered for this assignment. She assessed the company's current administrative and finance department operations and provided recommendations for improving the work that Ghana Nuts had started with the new accounting software; ACCPAC ERP they purchased. She provided setup recommendations to support cost management and enhanced management reporting and identified the training needs of the finance staff. Deborah made the following recommendations on the ACCPAC ERP software implementation, financial reporting and analysis and production data capturing, training and organizational structure of GNL.



Deborah Forti (left) interacting with Prince Asante DMD of Ghana Nuts Limited (Right), ACDI/VOCA manager, Techiman (extreme left) and HR for Ghana Nuts (extreme Right)

ACCPAC ERP Implementation.

- Develop an ACCPAC ERP implementation plan and checklist to ensure that all activities necessary for a successful installation are completed and monitored according to target completion dates.
- Follow a phased-in approach to implementing the ACCPAC modules to ensure that the Finance department has a solid understanding of how to use the software and can serve as a resource for other user groups.
- Modify the Proposed chart of accounts to support management reporting that is effective for a manufacturing operation.
- Work with the ACCPAC ERP installer to ensure that the software is structured to support product line and cost centre reporting, and variable and fixed cost designation.
- Develop and implement a plan to phase-in manufacturing cost tracking which provides a more and more refined approach to product line cost allocation.
- Assign a project team to confirm the information needs of each business function, ensure that the data is being captured in the ERP system and that all required reporting has been designed.
- Develop and implement, within the first 3 months after ACCPAC ERP is installed, a user training plan to ensure that all users understand how to enter information, query information and generate needed custom reports

Financial Reporting and Analysis

- Expand monthly actual to budget performance analysis reports to include explanations of significant variances.
- Incorporate contribution margin reporting into supplemental financial statements as a management tool for evaluating special pricing options and the ability to cover fixed costs.
- Require the Cost Accountant to review all cost analysis developed by other Depts. before it is issued company-wide to ensure the consistency of data application and uniformity in analysis assumptions.

Production Data Capturing

- Conduct a cost-benefit analysis to quantify the financial and non-financial benefits of installing additional flow measuring devices in the production processing plant to better isolate cost and production inefficiencies.

Training

- Conduct cross-departmental in-house training sessions to increase staff knowledge about how the organizational data is used in management decision-making.

Organizational Structure

- Establish key performance indicators for awarding bonuses which require cross-departmental coordination to achieve success.

Training on Tractor Management and Operation, Pee Farms: Bill Symons- 7th – 18th October 2010 and,

Good Agronomic Practices and Postharvest Activities for Maize, Soya Bean and Peanut Cultivation, David B. Gerber, 28 October 2010 - 16 November 2010.

Pee Farms is a sole proprietorship business entity that cultivates maize, soybean and groundnuts. The company cultivates 1,200 acres of maize, 7,000 acres of soybean and 2,000 acres of groundnut. The company aims to be one of Ghana's large scale commercial farmers. However, the company had inadequate technical knowhow to train the farmers on good agronomic and postharvest management practices and how to operate their tractor equipment efficiently which are both critical to increasing productivity. With new farm machinery (3 planters, 1 LANDINI tractor and 1 CLAAS 30 combine harvester), Pee Farms requested the services of an agricultural mechanization expert with extensive knowledge in agricultural equipment, operations and maintenance. William Symons a specialist in agricultural machinery and David Gerber, a professor in agriculture (agronomy) were both engaged to assist Pee Farms.

William trained the farm machinery operators on how to efficiently use farm machinery to enhance farming activities. Thirty-eight (38) tractor operators received training related to tractor operation and maintenance. The course was for 5 hours. A small amount of time was spent with members of the community on women's use of tractors. William made the following recommendations:

- Hand cultivation and planting should be avoided.
- Possibly the best cultivator to select would be the rotary hoe. This appears to be the machine of preference by the now defunct American managed farm nearby.
- Practice secondary tillage to make fields less cloddy, reduce weed population and work toward lowering maintenance and labor costs.
- Use backpack sprayers for spot spraying in order to reduce chemical costs and a boom sprayer for general field applications to improve application effectiveness.
- Modify Sheller to work in the field with 4 people shucking the corn and each person have a glove with a spur that slices the outer vegetation so that only the cob and grain are removed from the plant.
- Provide workers with a pesticide training applicator short course. Pesticide training and applicator license short course should be offered.
- Set all equipment (sprayer, planter, cultivator and so forth) to four row standards
- Bring mechanics who work under trees and so forth in town on Pee Farm tractors to the site to work on the company's tractors

David Gerber the agronomist held two seminars where he trained thirty (30) farmers; three (3) women and twenty seven (27) men on good agronomic and postharvest handling

practices of cultivating soybean, maize and peanut and made the following recommendations:

- Preferred use is a 30 or 22 inch mechanized corn planter with metal row markers. Use of a corn jobber could replace hand planting currently being done requiring less time, until a planter is available. Also investigating is a small row planter that does have a fertilizer hopper and a row marker for marking the next row. Until better and more equipment is available, corn rows to be 30 inches apart with a kernel of corn every seven(7) inches in the row to give a planting rate of 30,000 kernels and a stalk number of 27000 plants at harvest.
- A small demonstration plot on corn using 22 inch rows with a kernel drop of 8.5 to 9 inches would determine the value of these narrow rows. On 20 inch rows a kernel should be 10 to 10.5 inches apart. A demonstration test plot is of value to determine yield, stock breakage and corn variety differences. Recommended planting depth of corn to be 1.5 inch deep.

Strategic Business Plan Development, Khama Farms: James Thomas Faber, January 26, 2011 – February 11, 2011

Khama Farms Enterprise (KFE) is a soybean production enterprise that operates in four districts (Karaga, Nanumba North Gushiegu and Savelugu Nanton districts) in the Northern Region of Ghana. The company started operations in 2002 as a major producer of soybean. With an initial 15acre farm in 2002, the company currently has about 80 acres of soybeans. Apart from its own farms, KPE also works with over 384 farmers in the four districts. KFE renders tractor services to registered farmers such as tractor services in the form of land preparation, technical advice and seeds. KFE then purchase the produce from these smallholder farmers and sells to industrial processors. KFE, since its inception had no business plan to guide the company in its operations. The company plans to improve and expand its operations to reach more farmers in the northern region and beyond and this necessitated the need for a comprehensive 3-5 years strategic business plan that could serve as a road map for the company to achieve its set objectives. ACDI/VOCA FtF program recruited James Faber, an agribusiness consultant to develop 3-5 year strategic plan that will enhance the company's services and attract potential investors. Jim's recommendations highlighted the fact that KFE should expand and improve their services to farmers so as to increase production and also continue to establish more market relationships. The business plan that Jim assisted Khama Farms to develop has enabled him to re-apply for a loan of over GH¢100,000 (US\$67,000). The loan is at the final stage of approval by Stanbic Bank. In addition, the associate award ADVANCE is assisting Khama Farms Enterprise with equipment grant facility to purchase a tractor and accessories worth about GHC 70,000.00 (US\$ 50,000). Khama is contributing 30% of the value. With this financial injection, Khama Farms will now be able to provide more plowing services to reach more farmers so as to increase production as Jim recommended.



James Faber interacting with Muhib (in white), CEO of Khama Farms and field staff.

Feasibility Study for the Construction of Packhouses and Cold Chain Facilities, Centre for Empowerment of Rural Women in Ghana (CERWIG): Dr. Richard Philip Beilock, January 17, 2011 – February 5, 2011

CERWIG is a non-governmental organization (NGO) that seeks to promote economic empowerment of rural women through the strategic harnessing of natural and physical resources for wealth creation and economic independence. CERWIG is working towards enhancing the capacity of Ghanaian women food crop producers for higher efficiencies and increase incomes. These farmers bring their produce either on individual basis or groups to local markets. From such local farm-gate markets, there are small scale women distributors who are able to mop up such small surpluses and bulk them to higher level markets usually for wholesale at primary sub-district markets. These are often located at nodal points within geographical areas on market days (one day in a week for the convergence of buyers and sellers). These farmers concurrently act as producers and marketers of farm produce and are confronted with several challenges throughout their chain of activities. These challenges include inadequate and improper transportation of food crops. This leads to reduced capacities, health hazards and considerable loss in prices. Inappropriate storage and unhygienic distribution points lead to high losses of food and incomes. Insufficient and inappropriate storage and packaging reduces the shelf life of food produce. In view of these challenges, CERWIG requested the assistance of FtF volunteer to conduct a feasibility study on the possibility of constructing packhouses and cold chain facilities in key food crop (citrus, plantain, cassava) producing and marketing corridors in three districts of the Eastern Region of Ghana and also to help raise awareness with farmers on the benefit of bulk food items and how to safely handle their farm produce to minimize losses. Based on Richard analysis, he recommended that it will not be expedient for CERWIG venture into the construction of packhouses and cold chain facilities in the short term since there are other existence facilities they can utilize. He also advised CERWIG to focus more on grains and drop citrus and plantain as there are ready market for the grains and requires less effort to store. He also recommended that CERWIG acquire some more training and advice on issues related to cooperative establishment, governance, management, revenue sharing per transaction and dividends.

Organizational Capacity Building with Bogu Seed and Fruit Farmers Association (BOSAFA) Alan James Leo, March 7, 2011 – March 19, 2011

Bogu Seed and Fruit Farmers Association (BOSAFA) is a registered enterprise that works with 781 soybean outgrowers (529-males and 252-females producing 360Ha of soybeans) in eleven communities of the Karaga and Savelugu districts of the Northern Region of Ghana. The organization produces and sells soybeans to processors and other buyers. BOSAFA cultivates 60Ha of soybeans on her own as well. In its expansion drive the enterprise is looking for better ways to manage their outgrower scheme. BOSAFA is confronted with the challenge ensuring the day-to-day management of their business, good record keeping, and other good business management practices. Alan Leo, an agricultural development specialist volunteered to assist BOSAFA. The volunteer trained four administrative staff of the organization on proper record keeping, accounting practices, effective business management practices and how to better improve their out grower scheme.



Alan Leo with staff of BOSAFA after a training session

Alan's recommendations highlighted the restructuring of outgrower management scheme for better supervision and to ensure high quality supply of soybeans from farmers. The current field staff (five) is inadequate to handle the existing 781 out growers. More staff should be hired to ensure proper monitoring and better service to the farmers. Alan also stressed on the need for BOSAFA to improve on its record keeping and accounting system through constant practice.

Non-Core Country Flexible assignments

In addition to FtF assignments that are linked to the FtF ADVANCE projects core commodities, a number of FtF Leader award assignments are reserved for non-core commodities. A summary of these follows:

Log Cultivation of Shiitake Mushrooms, with Bemcom Youth Association, Douglas James Williams, January 29, 2011 – February 24, 2011

Improving Productivity and Shelf Life of Mushrooms with Bemcom Youth Association, Dr. Sandra Williams, January 29, 2011 – February 24, 2011

Bemcom Youth Association was formed in 1996 with the aim of providing training and technology transfer to youth engaged in the production of indigenous nutritional food products so as to improve their living condition and reduce poverty in the Brong Ahafo Region. Members of the association produce only one variety mushroom the oyster mushroom (*Ostreatus pleurotus*). The farmers have recently encountered several difficulties in the production of the oyster mushrooms. The species of oyster mushrooms produced currently have a short shelf life and are easily contaminated, thus suffer from a loss of freshness within a short period after harvest. They also require farm refrigeration to keep the freshness which is nonexistent among the farming communities in Ghana. As a result of these problems, Bemcom wanted to



Sandra Williams demonstrating how to harvest oyster mushrooms

introduce its members to Shiitake (*Lentinus edodes*) mushroom variety. This variety has a shelf life of 10 days to two weeks as compared to oyster mushroom variety which has three days shelf life. Bemcom is interested in training her members on how to improve the shelf life of the oyster mushroom. Douglas James Williams and Dr. Sandra Williams, mushroom production experts were recruited for this assignment. Douglas, trained Bemcom on the life cycle and the production techniques for the cultivation of Shiitake mushroom (*Lentinusedodes*), worked with the



Douglas James William demonstrating how spawn inoculation of logs are done

host and the forestry commission representative to identify the species of trees for optimal

production of Shiitake mushrooms They identified the Cassia, *Leucaena sp.* Eucalyptus, Flame tree, *Moringa*, Ceiba, and Teak branches and stumps suitable for log cultivation in the region. He also worked with Bemcom to develop an inoculation, incubation and fruiting cycle prototype for Shiitake mushrooms and laid the framework for the establishment of a mushroom spawn laboratory to produce spawns (seeds) of Shiitake and oyster mushrooms. Additionally, Douglas held a workshop for 62 mushrooms farmers in the Brong Ahafo region comprising of 38 men and 24 women. It was at this training workshop that Douglas and Sandra presented a UV light bulb, 4 incubators , 4 spawn drill bits, a lamina flow hood 1 laptop, a projector a recipe book for mushrooms and 2 drill machines all valued at US\$3 581.50. Douglas recommended that Bemcom should monitor the progress to see how the mycelium is progressing in each of the logs and also keep adequate record for inoculation, soaking, fruiting and harvesting.

Dr. Sandra Williams worked with Bemcom to train the famers on how they can improve the shelf life of the oyster mushroom. She had a training program for Chefs, cooks, farmers, hotel managers, and other stakeholders on the nutritional benefit of mushrooms. There was also cooking demonstration with oyster mushrooms. Sandra also prepared a Mushroom recipe book which will soon be published by Bemcom. She recommended that to increase the shelf life of oyster mushroom, the mushroom should be carried loose and should not be prepackaged in little bags with drain holes in the bottom but should be packaged in open paper bags as they hand them to customers. She also recommended that the farmers should introduce sautéing which is an effective way of extending the shelf life of the oyster mushroom. She indicated that those farmers who can afford freezing should consider raw freezing, freezing sautéed mushrooms, and thawing and refrigeration as a way of keeping the mushroom edible for up to a week or more.

Annex 1: GIS Steering Committee members

• ADRA – Ghana
• GIZ-MOAP Einob solutions Ltd
• MiDA
• IFDC
• IFPRI
• GEPC
• GIZ MOAP
• SRID/ MOFA
• ACDI/VOCA-ADVANCE
• Geokings Associates
• CERGIS
• Fruitland
• HAG
• Pinora
• USAID

Annex 2: Africa Lead program Participants from the Volunteer Program

Name	Organization
George Sam Osakonor	National Association of Agricultural Mechanization Service Operators, (Ghana)
Samuel Atuahene Donkor	Awurade Na Aye Cooperative Vegetable Growers Association
Oxford Osei Bonsu	Carrot Growers Association
Representative from Eden Tree	Eden Tree Limited
Iddrisu Mashud	Northern Region Vegetable Growers Association
Jocelyn Araba Owusu	Centre for Empowerment of Rural Women in Ghana

Annex 3: Interns on the ADVANCE program

Name	Team	Office
Asamoah Isaac	M&E	Techiman
Twumasi Desmond	Outreach	Accra
Arku John Henry	Volunteer	Accra
Samuel A. Odoom	M&E	Accra
Addy Adolf Nii Obli	Fruits (Citrus)	Nkawkaw
Ansong Kissi Nelson	GIS	ACDEP
Obeng Edmund	Outreach	ACDEP
Prempeh Alexandra	Volunteer	Accra
Danso Victor	M&E	Soybean Council
Adjei Akua Adoma	M&E	PAB Consult
Baah Doris	M&E	Nkawkaw
Dzameshie A. Rashid	Rice	ASRUD
Adzoyi Fred Xorla	M&E	Techiman
Mpere Bright	Rice	ASRUD
Awume B. Mensah	M&E	PAB Consult
Baiden-Amissah Carlrita	M&E	Accra
Adjei George Yaw	GIS	Accra
Kwabena Agyemang Duah	Kobbiman Farms	Nkoranza
Victor Tetteh Agbubla	GIS	Accra
William Horsu	Membership Drive	Ghana Grains Council
Eva Adoma Kyereboah	M&E	Nkawkaw
Paul Amezugbe	Radio Tongu	South Tongu

Annex 4: ADVANCE Completed assignments (Oct 2010-Mar 2011)

Volunteer	Host	Assignment Title	Start Date	End Date	Commodity	District	Subsector	Type of technical assistance
Alexander Stainburn	Lime Growers and Marketing Association (LIGMA)	Cooperative Development and Strategic Business Plan	26-Feb-11	19-Mar-11	Citrus	Abura-Asebu-Kwaman kese	Horticulture	Organizational Development
Alexander Stainburn	Citrus Growers and Marketing Association (CIGMA)	Cooperative Development and Strategic Business Plan	26-Feb-11	19-Mar-11	Citrus	Abura-Asebu-Kwaman kese	Horticulture	Organizational Development
Bob Cooperrider	Ghana Seed Inspection Division	Repairs and Refurbishments of Seed Plant Machinery	02-Dec-10 24-Feb-11	22-Dec-10 12-Mar-11	Maize, Rice, Soybean	Tamale	Staples	Technical/Technology transfer
Chad MacVoy	Vester Oil	Website Development	01-Nov-10	20-Nov-10	Soybean	Kumasi	Staples	Technical/Technology transfer
Denis Lee Oguzu	Ghana Grains Council	Promotional Plan Design and Public Awareness of Organizational Activities	15-Aug-10	05-Nov-10	Maize, Soybean	Accra Metropolitan	Staples	Organizational Development
Heinz Zemke	3K&A Industries Limited	Operations Assessment & Business Enterprise Development	14-Nov-10	04-Dec-10	Soybean	AtwimaNwabiagya	Staples	Business/Enterprise Development

Volunteer	Host	Assignment Title	Start Date	End Date	Commodity	District	Subsector	Type of technical assistance
Maurice Johnson	Ghana Grains Council	Organizational Development	18-Nov-10	18-Dec-10	Maize, Rice, Soybean	Accra	Staples	Organizational Development
Maurice Johnson	CCH Finance House	Developing Commodity Trading Strategy	16-Sep-10	30-Oct-10	Maize, Rice, Soybean	Accra Metropolitan	Staples	Business/Enterprise Development
Miah Abu Sayeed Mahmud	Sunripe Food Processing Company Limited	Marketing Strategy Implementation, Evaluation and Brand Development	25-Aug-10	22-Oct-10	Pineapple, Mango, Citrus	Akwapim-South	Horticulture	Market development
Richard Torian	Golden Web Limited	Quick Book Training	25-Sep-10	16-Oct-10	Soybean	Kumasi Metropolitan	Staples	Organizational Development
William Eyman	Asuokaw Citrus Farmers Association	Farm Record Keeping, Farm Budget Development and General Farm Management Practices	06-Mar-11	12-Mar-11	Citrus	West Akim	Horticulture	Organizational Development

Volunteer	Host	Assignment Title	Start Date	End Date	Commodity	District	Subsector	Type of technical assistance
William Eyman	Owurakesim Citrus Farmers Association	Farm Record Keeping, Farm Budget Development and General Farm Management Practices	13-Mar-11	19-Mar-11	Citrus	West Akim	Horticulture	Organizational Development

Annex 5 ADVANCE upcoming assignments

Volunteer	Host	Assignment Title	Start Date	End Date	Commodity	District	Subject or	Type of technical assistance	Status of assignment
Albert Tchamdja	Sunripe Food Processing Company	Product Development, Quality Control and Expertise in Multi Processing Planning	01-Jun-11	28-Jun-11	Pineapple, Mango, Citrus	Akuapim South	Horticulture	Technical/Technology transfer	Terminated
Leonard Knoblock	Gundaa Produce Enterprise	Improved Financial Management and Business Planning	30-Mar-11	19-Apr-11	Maize, Soybean	Tamale Metropolis	Staples	Organizational Development, Business/Enterprise Development	Volcon recruited but yet to serve
Mark Wade	Enoch Graham	Business Plan Development, Farm Budget Development and General Farm Management Practices	20-Mar-11	02-Apr-11	Citrus	Kwaebibirim	Horticulture	Organizational Development	In progress
Michael Mcguire	Gundaa Produce Enterprise	Improve Farm Management Skills	07-May-11	21-May-11	Soybean	Tamale Metropolis	Staples	Technical/Technology transfer	Volcon recruited but yet to serve

Volunteer	Host	Assignment Title	Start Date	End Date	Commodity	District	Subject or	Type of technical assistance	Status of assignment
Ralph A. Ward	Golden Web Limited	Capacity Building in Production Management	19-Mar-11	09-Apr-11	Soybean	Kumasi Metropolis	Staples	Technical/Technology transfer	In progress
	Business and Financial Times	Agribusiness Desk			Outreach	Accra Metropolis	Flexible	Organizational Development	SOW Development
	Greenspan Farms	Farm Management Accounting system			Pineapple	Akuapim South	Horticulture	Business/Enterprise Development	SOW Development
	Tails and Details	Business Assessment and Improved Accounting system			Equipment & Input	Birim Central	Flexible	Business/Enterprise Development	Recruitment of Volunteer
	Wienco Ghana Ltd.	Feasibility Study on Processed Maize Products			Maize	Accra Metropolis	Staples	Technical/Technology transfer	Recruitment of Volunteer
	Ghana Grains Council	Outreach Strategy for Ghana Warehouse Receipts Program			Maize	Accra Metropolis	Staples	Organizational Development	SOW Development

Volunteer	Host	Assignment Title	Start Date	End Date	Commodity	District	Subject or	Type of technical assistance	Status of assignment
	Wumpini Agro-Chemicals	Business Assessment and Improved accounting system			Equipment & Input	Tamale Metropolis	Flexible	Business/Enterprise Development	Recruitment of Volunteer
	Tamale Implements Factory Limited	Training and manufacturing of Farm Implements			Equipment & Input	Tamale Metropolis	Flexible	Technical/Technology transfer	Recruitment of Volunteer
	Sissala Rural Bank	Assessment of information Technology for Banking			Finance	Tumu	Flexible	Business/Enterprise Development	Recruitment of Volunteer
	Biako Ye Citrus Farmers Association	Farm Record Keeping, Farm Budget Development and General Farm Management Practices			Citrus	West Akim	Horticulture	Organizational Development	Recruitment of Volunteer
	Somu Ye Citrus Farmers Association	Farm Record Keeping, Farm Budget Development and General Farm Management Practices			Citrus	SuhumKra aboaCoalt a	Horticulture	Organizational Development	Recruitment of Volunteer

Volunteer	Host	Assignment Title	Start Date	End Date	Commodity	District	Subject or	Type of technical assistance	Status of assignment
	Nyankumase Citrus Farmers Association	Farm Record Keeping, Farm Budget Development and General Farm Management Practices			Citrus	West Akim	Horticulture	Organizational Development	Recruitment of Volunteer
	Osenase Citrus Farmers Association	Farm Record Keeping, Farm Budget Development and General Farm Management Practices			Citrus	West Akim	Horticulture	Organizational Development	Recruitment of Volunteer

Annex 6: FtF Completed assignments (Oct 2010-Mar 2011)

Volunteer	Host	Assignment Title	Start Date	End Date	Commodity	District	Subsector	Type of technical assistance
Alan Leo	Bogu Seed and Fruit Farmers Association	Organizational Capacity Building	07-Mar-11	19-Mar-11	Soybean	Karaga	Staples	Organizational Development
Bryce Malsbary	Awurade Na Aye Co-operative	Co-operative Development and Strategic Business Plan Development	28-Sep-10	12-Oct-10	Vegetables	Bechem	Horticulture	Organizational Development
David Gerber	PEE Farms	Good Agronomic Practices and Postharvest Activities for Maize, Soybean and Peanut Cultivation	28-Oct-10	16-Nov-10	Maize, Soybean	Ejura-Sekyedumasi	Staples	Technical/Technology transfer
Deborah Foti	Ghana Nuts Limited	Factory Accounting Management	15-Jan-11	05-Feb-11	Soybean	Techiman	Staples	Business/Enterprise Development

Volunteer	Host	Assignment Title	Start Date	End Date	Commodity	District	Subsector	Type of technical assistance
James Faber	Khama Farms	Strategic Business Plan Development	26-Jan-11	02-Jan-11	Soybean	Nanumba North	Staples	Business/Enterprise Development
Michael Mackeown	Northern Region Vegetable Growers Association	Co-operative Development and Strategic Business Plan	29-Nov-10	18-Dec-10	Vegetables	Tamale Municipal	Horticulture	Organizational Development
Ralph Harold Kurtzman	John the Baptist	Rice Straw Cultivation of Oyster Mushroom, Improving Productivity and Shelf Life	28-Nov-10	18-Dec-10	Mushroom	Hohoe Municipal	Horticulture	Market development
Refugio Rochin	Farmer Supportive Services and Community Utilities (FASCU)	Business Development Strategies and Training	20-Sep-10	02-Oct-10	Maize, Soybean	Wenchi Municipal	Staples	Organizational Development, Business/Enterprise Development
Richard Beilock	Center for the Empowerment of Rural Women in Ghana	Feasibility Evaluation for the construction of Packhouses and Cold Chain Facilities	15-Jan-11	05-Feb-11	Maize, Citrus, Plantain	Accra	Staples	Organizational Development, Business/Enterprise Development

Volunteer	Host	Assignment Title	Start Date	End Date	Commodity	District	Subsector	Type of technical assistance
Sandra Williams	Bemcom Youth Association	Improving Productivity and Shelf life of Mushrooms	22-Jan-11	12-Feb-11	Mushroom	Techiman Municipal	Horticulture	Market development
William B. Symons	PEE Farms	Training of Farmer Machinery Operators	02-Oct-10	13-Oct-10	Maize, Soybean	Ejura-Sekyedumas	Staples	Technical/Technology transfer
William James Douglas	Bemcom Youth Association	Log Cultivation of Shiitake Mushrooms	22-Jan-11	12-Feb-11	Mushroom	Techiman	Horticulture	Technical/Technology transfer

Annex 7: FtF Leader Award upcoming assignments

Volunteer	Host	Assignment Title	Start Date	End Date	Commodity	District	Subsector	Type of technical assistance	Status of assignment
Scott Stovall	Praword West Coast Co-operative Farmers and Traders Society	Business Plan Development and Capacity Building in Operational Management	27-Mar-11	09-Apr-11	Citrus	Accra Metropolis	Horticulture	Organizational Development	In progress
Timothy Krupnik	CHF International	Compost Assessment and Strategic Market Development	01-Jul-11	01-Jul-11	Organic waste (input)	Accra Metropolis	Flexible	Organizational Development	Volcon recruited but yet to serve
Walter Barrett	Khama Farms	Improved Soyabean Farm Management	09-Apr-11	23-Apr-11	Soybean	Nanumba North	Staples	Organizational Development	Volcon recruited but yet to serve
William B. Symons	Sissala Tractor Owners Association	Farm Equipment Management and Operations	06-Apr-11	21-Apr-11	Equipment & Input	Tumu district	Staples	Technical/Technology transfer	Volcon recruited but yet to serve
	Farmers Organizational Network in Ghana	Strategic Plan Development			Maize, Rice, Soybean, Vegetables	Accra Metropolis	Staples	Organizational Development	SOW Development

Volunteer	Host	Assignment Title	Start Date	End Date	Commodity	District	Subsector	Type of technical assistance	Status of assignment
	Farmers Organization Network in Ghana	Development of Operational Manual and Bye Laws			Maize, Rice, Soybean, Vegetables	Accra Metropolis	Staples	Organizational Development	SOW Development
	SEEDPAG	Organizational Capacity Building and Business plan development			Maize	Effutu Municipal	Staples	Organizational Development	SOW Development
	Manful Piinu	Business Planning, Development, Proposal Writing and Capacity Building in Operational Management			Soybean	Bunkpurugu-Yunyo	Staples	Business/Enterprise Development	Recruitment of Volcon
	PEE Farms	Farm Management and Effective Record Keeping			Soybean	EjuraSekyeredumasi	Staples	Organizational Development	Recruitment of Volcon
	Vakpo Danyinu Pineapple Farmers Association	Good Agronomic Practices and Pineapple Sucker Production			Pineapple	Kpando	Horticulture	Technical/Technology transfer	Recruitment of Volcon

Volunteer	Host	Assignment Title	Start Date	End Date	Commodity	District	Subsector	Type of technical assistance	Status of assignment
	Vakpo Danyinu Pineapple Farmers Association	Postharvest Management and Marketing Strategy			Pineapple	Kpando	Horticulture	Technical/Technology transfer	Recruitment of Volunteer
	Ghana Nuts Limited	Factory Safety Precautionary Measures, Health and Environmental Management Systems			Soybean	Techiman	Staples	Technical/Technology transfer	Recruitment of Volunteer
	Kobbiman Farms	Nucleus Farm Outgrower Scheme			Soybean, Mango	Nkoranza	Staples	Organizational Development	Recruitment of Volunteer
	Association of African Agro Exporters (AAFEX)	Postharvest Management and Processing			Vegetables	Accra, Navrongo, Gomaa	Horticulture	Technical/Technology transfer	Recruitment of Volunteer
	Association of African Agro Exporters (AAFEX)	Improved Agronomic Practices			Vegetables	Accra, Navrongo, Gomaa	Horticulture	Technical/Technology transfer	Recruitment of Volunteer

Annex 8: Baseline survey data

Host	Baseline Date	Members /Owners	Employees	Clients	Family Members	Total	Net Annual Income	Annual Gross Sales	Membership	OCCAT Rating	Rural and/or Ag Loans	# Rural and/or Ag Loans	Area of Env/NR (ha)	Ind. w/Env Safety Threat
1	9/15/2010	1	45	15	183	244	\$13,493	\$269,198	0	3.2	\$1,122,667	1	0	0
2	3/24/2010	3	200	4	621	828	\$0	\$0	0	4	\$0	0	0	0
3	7/26/2010	0	6	13	57	76	\$0	\$0	0	4.6	\$0	0	0	0
4	6/28/2010	4	90	150	732	976	\$0	\$0	0	3.8	\$600,000	1	0	0
5	4/15/2010	2	28	1,500	4,590	6,120	\$0	\$0	0	4	\$0	0	0	0
6	3/16/2010	0	7	65	216	288	\$0	\$0	0	4.2	\$0	0	0	0
7	5/3/2010	20	75	5	300	400	\$133,649	\$369,040	0	4.2	\$0	0	0	0
8	11/1/2010	3	12	1,200	3,645	4,860	\$373,282	\$587,901	0	1.8	\$0	0	0	0
9	11/29/2009	2	33	6	123	164	\$730,056	\$951,731	0	3.6	\$0	0	0	0
10	2/22/2010	2	30	60	276	368	\$0	\$0	0	3.8	\$0	0	0	0
11	12/7/2009	5	3	0	24	32	\$0	\$0	0	2.2	\$0	0	0	0
12	2/11/2010	1	5	201	621	828	\$0	\$0	0	3	\$133,333	1	0	0
13	5/12/2010	2	54	47	309	412	\$132,267	\$801,475	0	3	\$0	0	0	0
14	11/18/2008	0	0	0	0	0	\$0	\$0	0	0	\$0	0	0	0

Host	Baseline Date	Members /Owners	Employees	Clients	Family Members	Total	Net Annual Income	Annual Gross Sales	Membership	OCAT Rating	Rural and/or Ag Loans	# Rural and/or Ag Loans	Area of Env/NR (ha)	Ind. w/Env Safety Threat
15	11/20/2008	1	23	5	0	29	\$81,037	\$118,807	0	4.2	\$0	0	0	0
16	2/27/2009	1	35	11	4	51	\$358,026	\$975,104	0	4.2	\$0	0	0	0
17	3/16/2009	0	0	0	0	0	\$0	\$0	0	3.5	\$0	0	0	0
18	3/16/2009	2	60	500	0	562	\$215,487	\$223,163	0	4.3	\$0	0	0	0
19	3/16/2009	2	35	200	3	240	\$159,658	\$270,789	0	3.6	\$0	0	0	0
20	4/9/2009	2	30	6	3	41	\$22,704	\$117,779	0	3.2	\$0	0	0	0
21	5/6/2009	2	3	4	2	11	\$17,984	\$18,778	0	2.2	\$0	0	0	0
22	5/11/2009	12	300	48,000	244,799	293,111	\$12,100,521	\$63,577,091	12	2.9	\$0	0	0	0
23	6/9/2009	1,200,000	15	3,000,000	0	4,200,015	\$0	\$0	1,200,000	2.9	\$0	0	0	0
24	6/26/2009	2	16	16	2	36	\$0	\$0	0	2.6	\$0	0	0	0
25	6/26/2009	5	8	385	0	398	\$0	\$0	0	3.7	\$0	0	0	0
26	10/5/2009	5	5	509	40	559	\$51,415	\$74,133	0	3.4	\$0	0	0	0
27	12/2/2009	0	0	0	0	0	\$0	\$0	0	5	\$0	0	0	0
28	12/15/2009	2,500	124	115	1,000	3,739	\$0	\$0	0	3.8	\$0	0	0	0

Host	Baseline Date	Members /Owners	Employees	Clients	Family Members	Total	Net Annual Income	Annual Gross Sales	Membership	OCAT Rating	Rural and/or Ag Loans	# Rural and/or Ag Loans	Area of Env/NR (ha)	Ind. w/Env Safety Threat
29	1/17/2010	50	150	100	319	619	\$92,791	\$107,066	50	2.1	\$0	0	0	0
30	3/2/2010	400	0	40	150	590	\$0	\$0	0	2.2	\$0	0	0	0
31	3/18/2010	4	6	2,500	2,000	4,510	\$0	\$0	0	3.4	\$0	0	0	0
32	3/30/2010	33	0	6	164	203	\$0	\$0	0	1.3	\$0	0	0	0
33	4/4/2010	0	0	0	0	0	\$0	\$0	0	2.7	\$0	0	0	0
34	4/5/2010	48	7	2,500	16,249	18,804	\$0	\$0	0	3.7	\$0	0	0	0
35	4/20/2010	141	0	300	718	1,159	\$694	\$3,035	141	2.7	\$0	0	0	0
36	4/21/2010	1	8	4	317	330	\$0	\$0	0	2.6	\$0	0	0	0
37	4/21/2010	35	0	11	25	71	\$0	\$0	0	1.2	\$0	0	0	0
38	4/21/2010	30	0	127	65	222	\$0	\$0	0	1.2	\$0	0	0	0
39	4/21/2010	30	0	10	179	219	\$0	\$0	0	1.2	\$0	0	0	0
40	4/21/2010	78	0	8	467	553	\$0	\$0	0	1.2	\$0	0	0	0
41	4/27/2010	32	0	12	191	235	\$0	\$0	0	1.2	\$0	0	0	0
42	5/19/2010	1	30	8,000	48,799	56,830	\$0	\$0	0	1.3	\$0	0	0	0
43	6/15/2010	350	0	0	2,275	2,625	\$0	\$0	0	2.2	\$0	0	0	0
44	8/3/2010	3	765	32	40,337	41,137	\$979,984	\$11,5	0	4.5	\$0	0	0	0

Host	Baseline Date	Members /Owners	Employees	Clients	Family Member s	Total	Net Annual Income	Annual Gross Sales	Member ship	OCA T Rating	Rural and/or Ag Loans	# Rural and/or Ag Loans	Area of Env/ NR (ha)	Ind. w/Env Safet y Threa t
								30,877						
45	9/1/2010	0	0	0	209	209	\$0	\$0	0	4.8	\$0	0	0	0
46	11/18/2010	25	0	5	149	179	\$0	\$0	0	1.2	\$0	0	0	0

Annex 9: Survey Data

Host	Survey Date	Increase Members /Owners	Increase Employees	Increase Clients	Increase Family Members	Total	Est Val of Res Mob by Host	# Recom d Adopt ed	Increase Net Annual Inco me	Increase Annual Gross Sales	Increase Area Improve d Technology	(O) Increase Membe rship	Increase OCA T Rating	Increase # New Prod Se rvices	Increase Annual Revenues	Increase Rural &/or Agric Loans	Increase #Rural &/or Agric Loans	Increase Area Impr Env/ NR M	# Individ improve d Env Con d	Remarks
1	3/3/2011	0	7	0	0	7	\$0	0	(\$73,056)	(\$95,1731)	0	0	-3.6	0	\$0	\$0	0	0	0	Data not provided by host
2	4/7/2011	2	3	0	0	5	\$0	7	\$0	\$0	0	0	1.8	0	\$605,855	\$0	0	0	0	
3	3/2/2011	0	0	0	0	0	\$0	0	\$0	\$0	81	0	0.8	0	\$13,000	(\$13,333)	-1	4	2	
4		0	-7	-65	-457	529	\$0	0	\$0	\$0	0	0	-4.2	0	\$0	\$0	0	0	0	
5	3/30/2011	0	7	140	205	352	\$0	5	\$0	\$0	0	0	0.4	0	\$0	\$0	0	0	0	
6	3/26/2011	0	3	1,700	18	1,721	\$0	5	\$0	\$0	0	3	0.3	0	\$493	\$0	0	0	0	
7	3/11/2011	0	-30	6	155	131	\$0	5	\$143,069	\$270,724	620	0	0.6	1	\$0	\$0	0	0	20	
8	3/10/2011	0	0	0	0	0	\$0	1	(\$13,649)	(\$36,9040)	0	0	0	0	\$0	\$0	0	0	0	Financial information to be

Host	Survey Date	Increase Members /Owners	Increase Employees	Increase Clients	Increase Family Members	Total	Est Val of Res Mob by Host	# Recommended Adopted	Increase Net Annual Income	Increase Annual Gross Sales	Increase Area Improved Technology	(O) Increase Membership	Increase OCA Rating	Increase # New Prod Services	Increase Annual Revenues	Increase Rural &/or Agric Loans	Increase #Rural &/or Agr Loans	Increase Area Impr Env/NR M	# Individ improved Env Cond	Remarks
																				provided
9	3/9/2011	1	-10	3	25	19	\$0	1	(\$13,267)	(\$80,145)	0	0	0.8	0	\$0	\$0	0	0	0	Financial information to be provided
10	3/9/2011	0	-20	0	0	-20	\$0	0	\$0	\$0	0	0	0.3	0	\$0	(\$60,000)	-1	0	0	
11	4/18/2011	0	0	0	0	0	\$0	0	\$0	\$0	0	0	0.2	0	\$0	\$0	0	0	0	
12	3/11/2011	0	0	34	329	363	\$0	2	(\$13,493)	(\$26,918)	0	0	0.8	0	\$0	(\$1,122,667)	-1	0	0	

Host	Survey Date	Increase Members /Owners	Increase Employees	Increase Clients	Increase Family Members	Total	Est Val of Res Mob by Host	# Recommended Adopted	Increase Net Annual Income	Increase Annual Gross Sales	Increase Area Improved Technology	(O) Increase Membership	Increase OCA T Rating	Increase # New Prod Services	Increase Annual Revenues	Increase Rural &/or Agric Loans	Increase #Rural &/or Agr Loans	Increase Area Impr Env/NR M	# Individ improved Env Cond	Remarks
13		-3	-12	-1,200	0	1,215	\$0	0	(\$37,328.2)	(\$587,901)	0	0	-1.8	0	\$100,000	\$0	0	0	0	Financial information to be provided
14		-1	-23	-5	0	-29	\$0	0	(\$81,037)	(\$118,807)	0	0	-4.2	0	\$0	\$0	0	0	0	Data not provided by host
15	1/26/2011	1	2	6	-1	8	\$0	4	\$40,000	\$132,560	4	0	0.5	0	\$0	\$0	0	1	0	
16	6/17/2010	61	0	7	304	372	\$0	0	\$565,055	\$571,735	0	0	0.2	0	\$0	\$0	0	0	0	
17		-2	-60	-500	0	562	\$0	0	(\$215,487)	(\$223,163)	0	0	-4.3	0	\$0	\$0	0	0	0	Data not provided by host
18	2/25/2011	0	-29	-190	0	219	\$0	0	(\$155,762)	(\$259,100)	0	0	-3.6	0	\$0	\$0	0	0	0	Firm Shut down

Host	Survey Date	Increase Members /Owners	Increase Employees	Increase Clients	Increase Family Members	Total	Est Val of Res Mob by Host	# Recom d Adopt ed	Increase Net Annual Income	Increase Annual Gross Sales	Increase Area Improved Technology	(O) Increase Membership	Increase OCA Rating	Increase # New Prod Service	Increase Annual Revenues	Increase Rural &/or Agric Loans	Increase #Rural &/or Agr Loans	Increase Area Impr Env/ NR M	# Indi v improve d Env Con d	Remarks
19		-2	-30	-6	-3	-41	\$0	0	(\$22,704)	(\$117,779)	0	0	-3.2	0	\$0	\$0	0	0	0	Firm shuttdwn
20	3/10/2011	0	2	6	0	8	\$0	2	(\$10,163)	\$3,566	0	0	0.9	0	\$0	\$0	0	0	0	
21	2/8/2011	72	708	38,000	193,800	232,580	\$0	2	(\$12,100,521)	(\$63,577,091)	0	72	1.1	1	\$0	\$0	0	0	0	Financial information to be provided
22		-1,200,000	-15	-3,000,000	0	-4,200,015	\$0	0	\$0	\$0	0	-1,200,000	-2.9	0	\$0	\$0	0	0	0	Data not provided by host
23	1/25/2011	0	-5	14	0	9	\$0	11	\$0	\$0	0	0	0.1	3	\$0	\$0	0	0	10	
24	1/29/2011	0	1	10	0	11	\$0	3	\$0	\$0	0	0	0.4	0	\$0	\$0	0	0	0	
25	1/29/2011	0	1	116	0	117	\$0	5	\$950,818	\$957,327	0	0	0.5	0	\$0	\$0	0	0	0	

Host	Survey Date	Increase Members /Owners	Increase Employees	Increase Clients	Increase Family Members	Total	Est Val of Res Mob by Host	# Recommended Adopted	Increase Net Annual Income	Increase Annual Gross Sales	Increase Area Improved Technology	(O) Increase Membership	Increase OCA T Rating	Increase # New Prod Services	Increase Annual Revenues	Increase Rural &/or Agric Loans	Increase #Rural &/or Agr Loans	Increase Area Impr Env/NR M	# Individ improved Env Cond	Remarks
26		0	0	0	0	0	\$0	0	\$0	\$0	0	0	-5	0	\$0	\$0	0	0	0	Data not provided by host
27	2/15/2011	0	1	9	0	10	\$0	10	\$28,454	\$35,350	0	1	0.2	1	\$0	\$0	0	0	0	
28	2/18/2011	46	200	20	294	560	\$0	6	\$33,045,140	\$35,789,486	0	46	0.8	0	\$0	\$0	0	0	0	
29	2/16/2011	0	0	2	0	2	\$0	4	\$0	\$0	0	0	0.4	0	\$0	\$0	0	0	0	
30	2/15/2011	0	0	2,500	0	2,500	\$0	5	\$0	\$0	0	0	0.1	1	\$4,000	\$0	0	0	0	
31	2/17/2011	1	0	0	4	5	\$0	1	\$0	\$0	0	0	0.7	0	\$0	\$0	0	0	0	
32		0	0	0	0	0	\$0	0	\$0	\$0	0	0	-2.7	0	\$0	\$0	0	0	0	
33	2/8/2011	0	0	100	650	750	\$0	4	\$0	\$0	0	0	0.5	0	\$0	\$0	0	0	0	
34	2/16/2011	4	0	20	21	45	\$0	2	(\$694)	(\$3,035)	0	4	0.5	0	\$0	\$0	0	0	0	Data to be provided
35	2/15/2011	0	1	0	48	49	\$0	3	\$0	\$0	0	0	1	0	\$68,000	\$0	0	0	0	

Host	Survey Date	Increase Members /Owners	Increase Employees	Increase Clients	Increase Family Members	Total	Est Val of Res Mob by Host	# Recommended Adopted	Increase Net Annual Income	Increase Annual Gross Sales	Increase Area Improved Technology	(O) Increase Membership	Increase OCA Rating	Increase # New Prod Services	Increase Annual Revenues	Increase Rural &/or Agric Loans	Increase #Rural &/or Agr Loans	Increase Area Impr Env/NR M	# Improved Env Cond	Remarks
	11														0					
36	3/4/2011	19	0	2	4	25	\$0	5	\$135,848	\$216,952	0	3	1.8	0	\$0	\$0	0	0	0	
37	3/3/2011	31	0	2	5	38	\$0	3	\$151,097	\$241,303	0	2	1.9	0	\$0	\$0	0	0	0	
38	3/2/2011	0	0	0	0	0	\$0	3	\$7,117	\$11,807	0	30	1.1	0	\$0	\$0	0	0	0	
39	3/1/2011	-8	0	-3	-48	-59	\$0	6	\$40,252	\$69,218	0	0	1.4	0	\$0	\$0	0	0	0	
40	4/3/2011	4	0	0	24	28	\$0	1	\$24,508	\$33,059	0	0	1.9	0	\$0	\$0	0	0	0	
41	2/18/2011	0	9	100	610	719	\$0	5	\$751,724	\$296,552	5,010	0	1.2	0	\$68,000	\$0	0	0	0	
42	3/4/2011	0	0	0	0	0	\$0	2	\$0	\$0	0	0	0.4	0	\$0	\$0	0	0	0	
43	3/2/2011	0	0	18	0	18	\$0	2	\$0	\$0	0	0	0.4	0	\$0	\$0	0	0	0	Data not provided by host
44	2/16/2010	0	0	0	0	0	\$0	1	\$0	\$0	0	0	0.2	0	\$0	\$0	0	0	0	
45	3/2/2011	6	0	1	37	44	\$0	4	\$35,694	\$45,956	0	0	2	0	\$0	\$0	0	0	0	

Host	Survey Date	Increase Members /Owners	Increase Employees	Increase Clients	Increase Family Members	Total	Est Val of Res Mob by Host	# Recommended Adopted	Increase Net Annual Income	Increase Annual Gross Sales	Increase Area Improved Technology	(O) Increase Membership	Increase OCA Rating	Increase # New Prod Services	Increase Annual Revenues	Increase Rural &/or Agric Loans	Increase #Rural &/or Agr Loans	Increase Area Impr Env/NR M	# Improved Env Con d	Remarks
46	3/11/2011	0	6	6	0	12	\$0	6	\$0	\$0	0	0	0.5	0	\$0	\$0	0	0	0	

Annex 10: Baseline data indicators

Indicator	Description
Host	Host institution or individual to whom services are to be provided
Date of Baseline Assessment	The date information was collected on the host, typically during development of a scope of work prior to a volunteer assignment, but may also be information obtained during the volunteer assignment.
Potential Beneficiaries/ Members/Owners	This is the number of members of cooperatives, associations and other member-based organizations that receive volunteer assistance. For farms and private enterprises this is the number of owners. For other organizations this is zero. This assumes that all owners and members benefit from organizational program strengthening resulting from FtF assistance.
Potential Beneficiaries/ Employees	This is the number of employees working in the host organization, who are expected to benefit from the FtF assistance.
Potential Beneficiaries/Clients	This includes individuals selling product to a volunteer-assisted firm or institution (suppliers to exporter, processors, wholesalers, grocery chains, etc.) or clients using services or products of a volunteer-assisted organization or program (extension services, financial services, input supply, etc.), who are expected to benefit from the FtF assistance.
Potential Beneficiaries/ Family Members	This is the estimated number of family members of other categories of beneficiaries. This is calculated by multiplying the total number of other beneficiaries by the average family size minus one (to correct for the individual family member already counted) in the country or region, based on available project records, survey data, or average family size for the country/region.
Potential Beneficiaries/ Total	Total of four above categories of potential beneficiaries. This is taken as an estimate of potential indirect beneficiaries. It does not capture potential indirect beneficiaries due to spread of innovations introduced through volunteer recommendations.
Baseline: Annual Net Income (US\$)	<u>For Economic Impact Objectives:</u> Host's current net annual income in US\$. May be based on host records or simple enterprise budgets or per-hectare crop budgets (partial budgets will do).
Baseline: Annual Gross Sales (US\$)	<u>For Economic Impact Objectives:</u> Host's current gross annual sales in US\$. May be based on host records or simple enterprise budgets or per-hectare crop budgets (partial budgets will do).
Baseline: Membership	<u>For Organizational Impact Objectives:</u> Number of members of membership based organizations.
Baseline: OCAT Rating	<u>For Organizational Impact Objectives:</u> See: Simplified FtF OCAT rating sheet.

Baseline: Amount of rural/agricultural loans	<u>For Financial Service Impact Objectives</u> : Host's current total value of portfolio in agricultural/rural lending in US dollars.
Baseline: Number of rural/agricultural loans	<u>For Financial Service Impact Objectives</u> : Host's current portfolio in number of agricultural/rural loans.
Baseline: Area of Environmental/Natural Resource (ha)	<u>For Environmental Objectives</u> : Area of environmental or natural resources under control or influence of host. Estimates by field staff, hosts, and/or volunteers at or before the first assignment with the host.
Baseline: People with environmental/safety threat	<u>For Environmental Objectives</u> : Number of people threatened by adverse environmental conditions (pesticide misuse, food safety threats, and water or sanitation threats) or dangerous working conditions, as influenced or controlled by host.

Annex 11: Survey Data Indicators

Indicator	Description
Host	Host institution or individual to whom services are to be provided
Date of Impact Assessment	Date of latest impact assessment.
Beneficiaries/ Members/Owners	This is the number persons who have benefited from FTF assistance, by means of being members of cooperatives, associations and other member-based organizations that receive volunteer assistance or, for farms and private enterprises, the number of owners. For other organizations this is zero. This may reflect changes from the baseline.
Beneficiaries/ Employees	This is the number of employees working in the host organization, who have benefited from FTF assistance. May reflect changes from baseline.
Beneficiaries/Clients	This includes individuals selling product to a volunteer-assisted firm or institution (suppliers to exporter, processors, wholesalers, grocery chains, etc.) or clients using services or products of a volunteer-assisted organization or program (extension services, financial services, input supply, etc.), who have benefited from FTF assistance. May reflect changes from baseline. If volunteer recommendations or introduced technology spreads from hosts to other farmers/organizations and beneficiaries are documented by survey or special study, these beneficiaries can be included here with a footnote documenting the source of information.
Beneficiaries/ Family Members	This is the estimated number of family members of other categories of beneficiaries. This is calculated by multiplying the total number of other beneficiaries by the average family size minus one (to correct for the individual family member already counted) in the country or region, based on available project records, survey data, or average family size for the country/region. May reflect changes from baseline.
Beneficiaries/ Total	Total of four above categories of beneficiaries. This is considered the total of indirect

	beneficiaries. If volunteer recommendations are not accepted/implemented or there are no benefits from the FTF assignment, this number may be zero.
Estimated Value of Resources Mobilized by Host (U.S.\$)	"Resources mobilized" are resources that FTF program managers and volunteers assist their hosts in accessing, such as various sources of credit, state assistance, PL 480 local currency, other donor assistance, etc.
Number of Major Volunteer Recommendations Adopted	Number of volunteer recommendations adopted by host, with reference to the major volunteer recommendations by all volunteers assisting the host. This equates with number of farmers, processors, and others who have adopted new technologies or management practices as a result of USG assistance.
Increase in net annual income (US\$)	<u>For Economic Impact Objectives:</u> Change in net annual income represents incremental ("With" adoption of recommendation, less "Without" adoption of recommendation) net (after subtracting production costs in both cases) income (expressed in thousand U.S. Dollars). This may be based on host records or simple enterprise budgets or per-hectare crop budgets (partial budgets will do) prepared by hosts and FTF staff or volunteers to compare the "With" and "Without" cases.
Increase in gross annual sales (US\$)	<u>For Economic Impact Objectives:</u> Change in gross annual sales by the host or the host's members/clients in US dollars as a result of changes made buy the host.
Increase in area under improved production technology	<u>For Economic Impact Objectives:</u> This is the area in hectares under improved technologies (varieties, crops, management practices, production systems, etc.) recommended by volunteers. The number of additional hectares under improved technologies or management practices as a result of USG assistance
Increase in membership	<u>For Organizational Impact Objectives:</u> Net change in organizational membership.
Increase in OCAT rating	<u>For Organizational Impact Objectives:</u> Change in OCAT rating.
Number of New or Improved Products and/or Services	<u>For Organizational Impact Objectives:</u> Number of new or improved products and/or services introduced as a result of volunteer assistance.
Increase in annual revenues	<u>For Organizational Impact Objectives:</u> For organizational development activities, this is the change in annual net revenues raised by the host through member dues, services fees, or other sources of income such as contracts or grants.
Increase in the rural/agricultural loans (\$)	<u>For Financial Service Impact Objectives:</u> Change in host's current portfolio in agricultural/rural lending in US dollars. May be based on host records or simple enterprise budgets or per-hectare crop budgets (partial budgets will do).
Increase in the number of rural/ agricultural loans	<u>For Financial Service Impact Objectives:</u> Change in host's current portfolio in number of agricultural/rural loans. May be based on host records or simple enterprise budgets or per-hectare crop budgets (partial budgets will do).
Increase in area under improved environmental/ NRM (ha)	<u>For Environmental Objectives:</u> Area of environmental or natural resources under improved management, conservation or protection as a result of changes instituted by the host.
People with improved environmental/ safety	<u>For Environmental Objectives:</u> Number of people with improvement in their environmental conditions (pesticide misuse, food safety threats, and water or sanitation

conditions	threats) or working safety conditions, as a result of changes instituted by the host.
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Annex 12: Grant Beneficiaries (Oct 2010- Mar 2011)

	Location	Beneficiary	Type	Crop	Grant Assistance	Amount
1	Northern Region	Farmers Organization Network in Ghana (FONG)	NGO	na	Organization of conference on Agricultural Value Chain Constraints for farmers and fishermen	\$1,900
2	Greater Accra	African Connections Gh. Ltd	NGO	na	Organization of a conference on the theme “Market Driven Agriculture for Accelerated Rural Economic Development”	\$14,400
3	Greater Accra	FMSL Multimedia	NGO	na	Development of website for Youth Agric Clubs in second cycle schools.	\$493
4	Northern Region	11 Farmers Associations	Association	Soybean	25 Manual Planters	\$20,850
5	Northern Region	UWAI	Firm	Soybean	Planting Equipment	\$13,000
6	Northern Region	Benlenuma Farms	Firm	Soybean	Manual planter; Tresher/Sheller	\$8,163
7	Northern Region	Tahiru Meke Farms	Firm	Soybean	Manual planter; Tresher/Sheller	\$8,163
8	Northern Region	Big Ajar Enterprise	Firm	Soybean	Planter, Tractor	\$50,902
9	Northern Region	Kuoharitou Farm	Firm	Soybean	Planter, Tresher/Sheller	\$8,163
10	Northern Region	Kharma Farms	Firm	Soybean	Tractor with Harrow and Plough	\$50,600
11	Northern Region	Sanbotimah Enterprise	Firm	Soybean	Tractor with Plough	\$44,000
12	Brong Ahafo	Ohumong Investments Co.	Firm	Maize	Planter, Tractor, Tresher/Sheller	\$17,202

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13	Brong Ahafo	Salamatu Alhassan Ent	Firm	Maize	Tractor with Harrow and Plough, Tresher/Sheller	\$59,235
14	Brong Ahafo	Gumbani Farms and Truck Services	Firm	Maize	Tractor, Tresher/Sheller	\$43,000
15	Brong Ahafo	Fakwasi Rice Mill / Farmers Association	Association	Rice	Power Tiller, Planter	RFQ in process
16	Volta Region	Abotare Ye Rice Growers Association	Association	Rice	Power Tiller, Tresher, Transplanter	RFQ in process
17	Volta Region	Okata Farms and Food Processing Limited	Firm	Rice	Combine Harvester, Rice seeder, Rice weeder	RFQ in process
18	Upper East Region	Olihert Farming Enterprise	Firm	Rice	Tractor	RFQ in process
19	Upper East Region	Simple Prince Enterprise	Firm	Rice	Tractor, Planter	RFQ in process
20	Eastern Region	Andy Namafo Farms Limited	Firm	Rice	Combine Harvester, Rice transplanter	RFQ in process
21	Greater Accra	Nelson and Sons Ltd	Firm	Rice	Combine Harvester	RFQ in process
22	Volta Region	Vakpor Farms Company Ltd	Firm	Rice	Combine Harvester	RFQ in process
23	Northern Region	Gushei Farms	Firm	Rice	Combine Harvester	RFQ in process
24	Ashanti Region	Aframso Rice Farmers Group	Association	Rice	Power Tiller, Planter, Tractor	RFQ in process
25	Central Region	Gomoa Okyereko Irrigation Cooperative Rice Farming and Marketing Society	Association	Rice Mills Upgrading	Thresher, Rice Whitener, Grader, Moisture Meter, Dryer	RFQ in process

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26	Volta Region	Akpafuli Odomi Cooperative	Association	Rice Mills Upgrading	Huller, Generator, Rice Whitener, Winnower, Moisture Meter, Dryer	RFQ in process
27	Ashanti Region	Nobeum (Anum Valley Rice Farmers Cooperative and marketing Association)	Association	Rice Mills Upgrading	Stiching Machine, Destoner, Rice Whitener, Elevator buckers, Grader, Moisture Meter, Dryer	RFQ in process
28	Brong Ahafo	Fakwasi Rice Millers Association	Association	Rice Mills Upgrading	Rice Whitener, Grader, Moisture Meter, Dryer	RFQ in process
29	Upper East Region	Single Mothers Association	Association	Rice Mills Upgrading	Parboiling vessels, Water polytank, Rice whitener, Grader, Moisture meter, Dryer	RFQ in process
30	Eastern Region	TBD - Pineapple Outgrowers linked to fruit processing companies	Farmers	Pineapples	Produce and distribute 5 million disease free field pineapple suckers	\$425,000
31	Central Region	Tails and Details Ent	Firm	Citrus	Spraying equipment	\$2,000
32	Central Region	Marantha Agrochemicals	Firm	Citrus	Spraying equipment	\$2,000
33	Eastern Region	Enoch Graham	Farmer	Citrus	Spraying equipment	\$2,000
34	Eastern Region	Kaks Agrochemicals	Firm	Citrus	Spraying equipment	\$2,000