



FEED THE FUTURE

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



BUYER-SPONSORED OUTGROWER SCHEMES LEARNING STUDY

CONSULTANCY ASSIGNMENT TO ASSESS THE BUSINESS CASE FOR
BUYER-SPONSORED OUTGROWER SCHEMES



USAID
FROM THE AMERICAN PEOPLE



GHANA ADVANCE II PROJECT

FEBRUARY 2014 – APRIL 2019

COOPERATIVE AGREEMENT No. AID-641-A-14-
00001

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ACRONYM LIST

ADVANCE	Agriculture Development and Value Chain Enhancement
AEA	Agricultural Extension Agent
FtF	Feed the Future
GHS	Ghana Cedi / Ghanaian Cedi
MoFA	Ministry of Food and Agriculture
NGO	Non-governmental Organization
OB	Outgrower Business
OG	Outgrower
PFJ	Planting for Food and Jobs (Policy)
USAID	United States Agency for International Development
USD	United States Dollar
VSLA	Village Savings and Loan Association

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EXECUTIVE SUMMARY

The USAID-funded Agricultural Development and Value Chain Enhancement project (USAID's ADVANCE project) began in 2009 with an initial strategy to engage large agribusiness firms, such as processors, large buyers, and input companies, to lead the development of the maize, rice, and soybean value chains, making them efficient and competitive. Therefore, the project encouraged lead firms in the maize, rice, and soybean value chains to invest in contract farming agreements with outgrower businesses (OBs) in the specified crops, and subsequently developed the outgrower business (OB) model to serve as a link between large processors or large buyers and smallholder farmers, or outgrowers (OGs). The project sought to make OGs the main local source of raw materials for lead firms in order to reduce imports. Only one firm (Premium Foods, Ltd.) participated in the scheme during the project's first phase (ADVANCE I). However, sixteen firms established agreements with OBs during the project's second phase (ADVANCE II), beginning in February 2014.

This study, led by Prof Samuel Adjei-Nsiah and Dr Alfred Asuming Boakye, both from the University of Ghana, aimed to assess the successes and challenges of the buyer-sponsored OG scheme facilitated by USAID's ADVANCE project. The specific objectives included the following: i) identify the set of economic and social incentives that motivate buyer firms and processors to finance a crop OG scheme involving smallholders; ii) estimate the level of benefits required for a participant's continued motivation to keep or improve business relationships supporting the scheme; iii) identify incentives or motivations that allow actors to deliberately include businesses owned by females or youth, or employ females or youth in OG schemes; iv) identify and document accrued benefits in the OG schemes, including benefits accrued to women and youth; v) assess the sustainability of the OG schemes; vi) identify other actions, including public policy required to ensure future sustainability of buyer-sponsored OG schemes; vi) assess the effectiveness of USAID's ADVANCE project support to lead firm/buyer sponsored OG schemes; and vii) assess the efficiency of various OG scheme models facilitated by the project.

The research team conducted a census of 16 firms and 81 OBs involved in the Buyer-sponsored outgrower arrangements facilitated by USAID's ADVANCE II project for interviews. The team collected data via mixed methods, including a questionnaire and in-depth interviews. Out of the targeted 16 lead firms, 12 participated in interviews, including Premium Foods, Ltd.; ANS Mills; Vester Oil Mills, Ltd.; E GABS Gh., Ltd.; Antika Company, Ltd.; G Bosomtwe Ventures; Afranso Rice Buyers Association.; Crop Care Gh., Ltd.; Agricare, Ltd.; RMG; Agri-invest, Ltd.; and Akate Farms, Ltd. All 81 OBs selected in the census participated in interviews. Results show that among OBs, a large proportion (86 percent) of respondents strongly agreed or agreed that factors motivating them to enter into relationships with buyer firms included benefits such as the assured availability of inputs for each season, adoption of new production technologies, easy access to credit, and the accessibility of technical advice from extension agents. Buyer firms shared their main economic motivating factors, which include the assurance of high-quality produce from OBs, consistent produce supply, and reduced risks and costs associated with direct relationships with OGs and OBs. OBs' economic motivating factors comprised increased income, easy access to reliable markets, and receiving prompt payment for the commodities that they supply to the buyers.

The team also explored other factors that motivate OBs to enter into relationships with buyers, including a desire to better the lives of OGs by providing them with opportunities to access inputs and output markets, eventually improving their household incomes. Social factors that motivate buyer firms to enter into business relationships with OBs include building a trusted network of OBs to ensure timely and quality produce supply, and a desire to provide livelihood opportunities to improve the OBs' standard of living. The study team found very high levels of satisfaction with the motivating factors enumerated above, a positive indication for the sustainability of these business relationships as long as both parties' objectives are met.

Considering that buyer firms and their OBs reported positive business outcomes as a result of engaging with USAID's ADVANCE project, they have incentive to continue and expand these business relationships, making the benefits even more widespread.

Both buyers and OBs make room to consciously include women in their businesses. They consider women to be more trustworthy, reliable, and serious than their male counterparts, making it more attractive to work with them. According to the OBs, are more willing to apply new technologies. A majority of OBs (51 percent) work with women because of the latter's ability to promptly repay credit. Most (90 percent) buyers engaged young OGs in their schemes. They value the inclusion of the youth because the aggregation of farm produce requires commitment and energy, and benefits from active young participants. According to buyers, the youth also have large followings and are more likely to attract their peers to participate in schemes, leading to growth and positive results. The OBs are motivated to engage with young OGs, describing them as more energetic, strong, and hardworking. OBs also view the youth as easy to work with and more open to adopting new production methods and technologies. OBs consider young OGs to be the future generation who will take over farming, and are motivated to create opportunities for youth already engaged in agriculture by providing them with timely access to inputs, extension services, other logistics on credit, with flexible repayment terms and conditions, and to build motivating and mentoring relationships with them.

The results of the study show that all OBs benefited from their relationships with USAID's ADVANCE project. The benefits include training in agribusiness, financial, and cash-flow management, marketing and negotiation skills, entrepreneurship, recordkeeping, and managing outgrower schemes. Other benefits include linkages to prospective buyers, grant provision for the purchase of production equipment such as shellers, tractors, and planters, facilitation of access to credit from financial institutions, assistance in the acquisition of necessary inputs to improve production, provision of market information, and access to weather forecast to help farmers plan. All buyers—100 percent—reported that relationships with OBs positively impacted their business. These impacts are apparent in increased profit levels (although buyers could not provide any figure to validate that effect), the increased quality of commodities sourced from OBs, assurance of consistent supply of commodities from OBs, and increased knowledge of good agronomic practices and business management.

From the perspective of both OBs and buyers, the technical assistance provided by USAID's ADVANCE project helped increase both parties' profits. The majority of the OBs (96 percent) expressed confidence in their ability to maintain their current relationships with buyers in the absence of project support, while a small number of OBs (4 percent) did not express confidence in maintaining their current relationships with buyers after the end of project.

Based on various levels of success, the study categorized buyer-sponsored outgrower schemes into four categories: very efficient, efficient, inefficient, and very inefficient. The efficient and very efficient schemes with high levels of success are those that employ agronomists and agricultural extension agents to offer extension services to farmers and monitor the progress of primary agricultural production on the OGs' fields. For example, the schemes operated by Agri-invest, Ltd., Agricare, Ltd., RMG, and Antika demonstrate high level of success and efficiency because they engage the services of agronomists and extension agents to ensure compliance with recommended agronomic practices, and ensure high recovery rates of inputs advanced on credit to OBs. They also ensure timely delivery of inputs and collect farm produce from the farm gate. On the flip side, the schemes operated by G. Bosomtwe Ventures and Vester Oil Mills, Ltd., collapsed or are not working well because the firms made no efforts to monitor OB and OG activities. The success of the schemes lies in implementing effective monitoring measures for OB activities. To ensure efficiency, the study recommends that buyer firms should employ agricultural extension agents and agronomists to provide recommended agricultural practices to OGs and to monitor their activities throughout crop production in order to ensure success by achieving high credit recovery rates. Buyers should initiate effective conflict resolution mechanisms to resolve conflicts. Buyer firms should also be encouraged to provide transportation to OBs to deliver inputs to OGs' fields and collect harvested commodities from the farm gate.

I. INTRODUCTION

I.1 Background

Rice, maize, and soybeans are important food and cash crops in Ghana. About 60 percent of the rice consumed in Ghana is imported, at an annual cost of over one billion United States dollars (USD) (GNA, 2018). In addition to being major staple food crops for humans, maize and soybean are the basic ingredients for poultry feed preparation, accounting for 60 percent and 20 percent, of poultry feed ingredients, respectively. Therefore, their price and availability greatly affect the poultry industry in Ghana (Andam et al., 2017). Every year, Ghana imports large quantities of yellow maize and soybean from Argentina, Brazil, and Uruguay for the poultry industry.

The USAID-funded Agricultural Development and Value Chain Enhancement project (USAID's ADVANCE project) began in 2009 with an initial strategy to engage large agribusiness firms, such as processors, large buyers, and input companies, to lead the development of the maize, rice, and soybean value chains, to make them efficient and competitive.

The project conducted value chain assessments of these three commodities. In the assessment, processors and large buyers indicated that they import maize and soybean for processing due to the poor quality and unreliable supply of locally produced ones. Also, large agro-input firms indicated that their sales are much lower than the potential size of the market, primarily due to low levels of input adoption and use, especially fertilizers. The average fertilizer rate used in Ghana was 34 kg per hectare arable land in 2012, which is below the Abuja declared target of 50 kg but higher than many African countries¹. However, these large buyers, processors and agro-input firms showed little willingness to invest resources in making these value chains efficient and competitive. Despite repeated engagement, buyers and processors were only willing to buy products if farmers meet the production quality they needed and aggregate the product to the quantity that can be transported economically. The project therefore looked at alternative ways of achieving the goal of improving competitiveness. The project developed the OB model to serve as a link between large processors or buyers and outgrowers (smallholder farmers).

Outgrower business (OB) owners are usually commercial farmers or aggregators who are willing to provide services to smallholder farmers and aggregate produce for sale in formal markets. The USAID's ADVANCE project trained prospective OBs using a nine-module training curriculum to ensure that they operate as profitable and sustainable businesses. An OB supports smallholders to improve their yields and quality of produce by providing them with mechanization services (ploughing/ripping, shelling, etc.), one or more of the following inputs—certified seeds, fertilizers, agrochemicals—and training using demonstration sites. The OBs also enter into various contracts with buyers (who may prefinance production) to supply agreed-upon quantities of produce within a specified period. The project facilitates linkages between OBs and financial institutions, agro-input companies, and transporters to ensure that they can meet the obligations in their contracts.

One of the major challenges facing OBs was financing inputs on credit to their outgrowers (OGs). Generally, OBs depended on their own capital and loans from financial institutions to support their OGs. However, the large buyers became interested in prefinancing OB activities once they observed that OGs working with OBs could produce the quality required, and that OBs could aggregate and supply buyers at the factory gate. This

¹ The World Bank. (2015). World Development Indicators - Fertilizer consumption (kilograms per hectare of arable land) [Online]. The World Bank. Available: <http://data.worldbank.org/indicator/AG.CON.FERT.ZS/countries>

set the stage for USAID’s ADVANCE project to facilitate and strengthen the relationship between OBs and buyer firms.

The first phase of the USAID’s ADVANCE project only involved one firm (Premium Foods, Ltd) prefinancing OBs. However, sixteen buyer firms established agreements with OBs in the second phase of the project, starting in February 2014. Despite lessons learned in the project implementation process, there is the need further exploration and understanding of the effectiveness of the relationships between the value chain; the sustainability of the OB model; the inclusiveness of partnerships between buyers and OBs, and the effectiveness of the support from USAID’s ADVANCE project. The purpose of the current study is to understand the successes and challenges of the buyer-sponsored outgrower scheme facilitated by the project and recommend measures that would make the model more sustainable. Table 1 gives an overview of the buyers that participated in the scheme between 2014 and 2018.

Table 1. Buyers that participated in buyer-sponsored outgrower schemes between 2014 and 2018

Buyer	Commodity	Production Area	2014	2015	2016	2017	2018
No of Buyer Outgrower Schemes			1	7	11	9	4
Premium Foods	Maize	North Ghana					
G. Bosomtwe Ventures	Maize	Upper West					
Akate Farms Limited	Maize	Upper West					
ANS Mills	Rice	Northern					
Hawa Seidu	Rice	Northern					
Lawuratu Ali	Rice	Northern					
Alimatu Issaka	Rice	Northern					
Agricare	Maize	North Ghana, South Ghana					
Sustainable Agro	Rice	Upper East					
Timothy Dassah	Maize	Upper West					
Addicents Foods	Rice	Upper East					
Duna Farms	Maize	Upper West					
Royal Danemac	Soy bean	Northern					
Vester Oil	Soy bean	Northern					
Sahel Grains	Maize	Upper West					
EGABS	Soy bean	Northern					
AVNASH/Shinkafa Buni	Rice	North Ghana					
Crop Care Ltd	Maize	North Ghana					

1.2 STUDY OBJECTIVES

The general objective of the study was to assess the level of success, or otherwise, of the buyer-sponsored outgrower schemes facilitated by USAID’s ADVANCE project since 2014 from the perspective of the private sector participants—the buyers and OBs.

The study sought to achieve the following objectives:

1. Identify the set of economic and social incentives that motivate buyer firms and processors to embark on financing a crop outgrower scheme involving smallholders.
2. Estimate the level of benefits required for participants’ continued motivation to keep or improve business relationships that support the scheme.
3. Identify any incentives or motivation that allows actors to deliberately include businesses owned by females or youth, or to employ females or youth in outgrower schemes.

4. Identify and document accrued benefits in all the separate outgrower schemes, including benefits accrued to women and youth.
5. Assess the sustainability of the buyer-sponsored outgrower schemes.
6. Identify other actions, including public policy required to ensure future sustainability of buyer-sponsored outgrower schemes.
7. Assess the effectiveness of USAID's ADVANCE project support to the lead firm/buyer in outgrower schemes.
8. Assess the efficiency of various outgrower scheme models.

I.3 METHODOLOGY

The project implemented buyer-sponsored outgrower schemes in the three northern regions (the Northern, Upper West, and Upper East regions), and the Ashanti and Brong Ahafo Regions. Most of the OB beneficiaries were located in the three northern regions. To gain a complete overview of the project and achieve set objectives, the study started with a review of the project documentation to understand the underlying facts in terms of beneficiary characteristics, the buyer firms' modes of operation, and the agreements made with outgrowers.

The study consulted with the project team to select OBs for the survey and used structured questionnaires and checklists to collect data. The team conducted a census of beneficiary OBs, using a survey to target all OBs in business relations with buyer firms—a total of eighty-one OBs (20 from Upper East, 30 from Northern region, and 31 from the Upper West region). USAID's ADVANCE II project planned to take a census of the buyer firms linked to OBs—16 in total—through the survey, but 12 of the buyer firms participated in the interviews.

The buyer firms interviewed included Premium Foods, Ltd.; ANS Mills; Vester Oil Mills, Ltd.; E GABS Gh. Ltd.; Antika Company, Ltd.; G Bosomtwe Ventures; Aframsco Rice Buyers Association.; Crop Care Gh., Ltd.; Agricare, Ltd; RMG; Agri-invest, Ltd.; and Akate Farms, Ltd. The remaining four buyers (Shinkaafa Buni, Duna, Sahel Grains, and Addicents Foods) did not participate in interviews because they were unavailable during the survey period. In addition, in-depth interviews were conducted with eight of the buyer firms. The team also interviewed business owners and their field assistants from the OBs and the chief executives or their purchasing officers from the buyers.

PROPOSED METHODS OF ANALYSIS TO ADDRESS HYPOTHESES

Table 2. Proposed methods of analysis to address hypotheses

Study Hypotheses	Method of Analysis in Addressing Hypothesis
The end-buyer firms realize long-term sustainable benefits that motivate them to invest in outgrower schemes	Summary statistics
Buyer-sponsored outgrower schemes are mutually beneficial (economically and socially) to the buyers and participating OBs, and the business relationships will be maintained and improved as long as these benefits accrue.	Summary statistics
The capacity-building activities provided to various actors by USAID ADVANCE is a key factor in development of new outgrower schemes.	Summary statistics
Actors deliberately include women and youth in outgrower schemes because they recognize the value that these sections of the populace bring to business operations and benefits.	Summary statistics

2. RESULTS

This section presents analysis based on the objectives and hypotheses underlying this study. The buyer firms included in this analysis are Premium Foods, Ltd.; ANS Mills, Vester Oil Mills, Ltd.; E GABS Gh., Ltd.; Antika Company, Ltd.; G Bosomtwe Ventures; Aframsco Rice Buyers Association; Crop Care Gh., Ltd.; Agricare, Ltd.; RMG, Agri-invest, Ltd.; and Akate Farms, Ltd. The data analysis includes data from 81 OBs who are in business relationships (facilitated by USAID'S ADVANCE project) with the buyer firms listed above. The majority (almost 93 percent) of the OBs are men, and the remainder (7 percent) are women.

2.1 Economic and Social Factors as Incentives that Motivate Buyer Firms and OBs to Enter into Business Relationships ²

The study identified a set of economic and social factors that motivated both buyer firms and OBs to enter into relationships deemed mutually beneficial in financing crop outgrower schemes with smallholders. Among OBs, a large proportion (about 86 percent) of the respondents strongly agreed or agreed that economic factors motivated them to enter into relationships with the buyer firms. These economic factors included the assurance of input availability from buyer firms for each season, access to new production technologies, easy access to credit, and the ability to access extension agents. This result implies that if OBs continue to enjoy these economic benefits, they will continue the business relationships with buyer firms and eventually build trusted networks between them.

Like the OBs, economic incentives appear to be the major motivating factor for buyer firms to enter outgrower schemes with OBs. About 90 percent of buyer firms strongly agreed or agreed that economic factors motivated them to enter outgrower schemes with OBs. The main economic motivating factors for buyer firms are an assurance of high-quality produce from OBs, consistent produce supply, reduction in the risks and costs associated with dealing directly with OGs, provision of employment opportunities for OBs and OGs, and profit from high-quality produce provided by OBs. While it is true that outgrower schemes provide employment opportunities for both OBs and outgrower farmers, employment opportunities were unintended benefits and not necessarily the major reason for buyer firms to enter into the relationship. Other economic factors include increased income, easy access to reliable markets, and prompt payment for the commodities they supply to the buyer firms.

Buyer firms remained neutral when considering whether their decision to finance crop outgrower schemes was motivated by easy access to cheaper produce. Most of the firms believed that access to cheaper farm produce had a minimal role in influencing their decisions to finance OB activities. This implies that most of the buyer firms are likely to continue to provide financial assistance to outgrower schemes, regardless of whether they get cheaper produce from farmers, as long as they can access a consistent supply of good-quality produce from farmers regularly. However, the buyer firms assert that profit from high-quality produce is a motivating factor for them to enter into business relationship with OBs.

About 88 percent of the OBs either agreed or strongly agreed that social factors motivated them to enter into a business relationship with buyer firms. These social factors included easy access to extension services, as well as a desire to better the lives of outgrowers through the provision of opportunities to access inputs and output markets to improve their incomes. From the perspective of buyer firms, factors such as building a trusted network of OBs to ensure timely supply of quality produce, reduction in risks and costs associated with dealing directly with OGs, and a desire to provide livelihood opportunities to improve OBs' standard of living, which eventually trickle down to OGs, play a major role in influencing their decisions to enter into relationship with OBs (Table 3). While it is true that business relationships with OBs will improve the

² See Appendix 1a and 1b for details

standard of living of OBs and OGs, this is an unintended benefit emanating from the relationship, not the primary motivating factor.

Table 3. Levels of agreement—motivation to enter into business relationship facilitated by USAID’s ADVANCE (comparison between OBs and buyer firms)

		Outgrower Businesses		Buyer Firms	
		Responses		Responses	
		N	Percent	N	Percent
Economic factors	Strongly disagree	9	1.2%	4	3.7%
	Disagree	68	9.3%	2	1.9%
	Somewhat agree	45	6.2%	21	19.4%
	Agree	304	41.7%	24	22.2%
	Strongly agree	303	41.6%	57	52.8%
Total		729	100.0%	108	100.0%
Social motivating factors	Disagree	9	5.6%	-	-
	Somewhat agree	10	6.2%	4	16.7%
	Agree	86	53.4%	5	20.8%
	Strongly agree	56	34.8%	15	62.5%
Total		161	100.0%	24	100.0%

Source: Field Survey 2018; (Percentages are based on responses)

The study showed that OBs and buyer firms both expressed high levels of satisfaction with the factors that motivated them to engage in business relationships, revealing a positive outlook for future sustainability. The majority of OBs and buyer firms, about 79 percent and 67 percent, respectively, stated that they were either satisfied or highly satisfied with the economic factors that motivated the business arrangement. Buyers who were not satisfied with economic factors for engaging OBs assigned low credit recovery rate as the main reason for their low satisfaction. About 89 percent of OBs were satisfied or highly satisfied with the social motivating factors for establishing relationships with buyer firms, while 80 percent of buyer firms were in the same category. These positive results imply that the economic and social motivating factors compelling OBs and buyer firms to establish business relations are being met through the relationships (Table 4).

Table 4. Levels of satisfaction—motivation to enter into business relationship facilitated by USAID’s ADVANCE (comparison between OBs and buyer firms)

		Outgrower Businesses		Buyer Firms	
		Responses		Responses	
		N	Percent	N	Percent
Satisfaction with economic factors	Highly dissatisfied	17	1.5%	-	-
	Dissatisfied	124	10.9%	2	1.9%
	Somewhat dissatisfied	95	8.4%	34	31.5%
	Satisfied	601	53.0%	43	39.8%
	Highly satisfied	297	26.2%	29	26.9%
Total		1134	100.0%	108	100.0%
Satisfaction with social factors	Dissatisfied	6	3.7%	-	-
	Somewhat dissatisfied	11	6.8%	4	16.7%
	Satisfied	101	62.3%	7	29.2%
	Highly satisfied	44	27.2%	13	54.2%
Total		162	100.0%	24	100.0%

Source: Field Survey 2018; (Percentages are based on responses)

2.2 Level of Required Benefits to Keep Business Relations between Buyer Firms and OBs

The team used descriptive statistics to estimate the level of benefits required for participants' continued participation in the outgrower schemes, or improvement in the business relationships supporting the schemes. The required levels of benefits were measured as the percentage of the time the buyer firms and OBs are engaged in business relations. The result show that buyer firms would continue to engage OBs, if they are able to predict the price of commodities supplied by OBs at least 59 percent of the time, and on average about 72 percent of the time (Table 5). Buyers indicated that if they can predict OBs' produce supply for long term planning an average of 77 percent of the time, they would continue the business relationships. On average, buyers indicated that they will continue their business relationships with OBs if they can recover their investment in the form of farm produce 77 percent of the time. The ability to recover input credit and other resources from OBs is a major source of worry for most buyers. One buyer (G. Bosomtwe) reported a recovery rate of below 70 percent, leading him to suspend operations in 2016. He mentioned several reasons for the low recovery rates, including natural disasters such as flooding, drought, and bushfires, as well as OBs side-selling produce and diverting inputs meant for production to other uses (

Appendix 3). Another threat to yield and recovery of investment in maize production in recent times has been Fall Armyworm infestation.

Table 5. Level of required benefits (measured as percentage of time engaged with OBs)

	Minimum	Maximum	Mean	Std. Deviation
Ability to predict price of raw materials from OBs	59.00	80.00	71.6250	10.45996
Supply predictability to aid in long-term planning	59.00	80.00	77.1250	7.33753
Assurance of high recovery rate associated with funds for OB operations and payback in-kind	20.00	80.00	72.2500	21.11702
Lower cost of supplies from OBs versus open market purchases or imports	39.00	80.00	66.8750	15.24502
Consistency of supplies from OBs versus open market purchases or imports	59.00	80.00	71.7500	10.56612

Source: Field Survey 2018

2.3 Incentives or Motivation to Include Females or Youth or to Employ Females or Youth in Outgrower Schemes³

All OBs make room to consciously include women in their dealings with OGs (Table 6), and survey results show that OBs consider women to be more trustworthy, reliable, and committed than their male counterparts. These beliefs motivated OBs to work with women. About 51 percent of OBs describe women as trustworthy, reliable, truthful, and more likely to promptly pay off credit when compared to men, who tend to delay loan repayment. About 22 percent of OBs believed that women more easily understand and are willing to apply new technologies or methods on their farms to increase productivity. About 17 percent of OBs also choose to work with women OGs because of social considerations and seek to help improve their livelihoods. Several people mentioned that they make inputs more readily available to women and at a significantly cheaper price than to men. Women are also included in farmer groups' entire decision-making process, supporting the idea that everyone is taken into consideration in planning so that benefits reach all stakeholders.

Most (90 percent) buyers engage young OBs in their schemes. However, USAID's ADVANCE project directly linked young OBs with buyer firms, forming these relationships. According to the buyers, aggregation of farm produce requires a lot of commitment and energy, so active people are advantageous. According to the buyers, the youth also tend to have large followings and are more likely to attract fellow youth to participate in the scheme.

Most OBs (about 90 percent) made a conscious effort to include youth in their partnership with OGs (Table 6). About 30 percent of OBs listed the factors that motivated them to partner with youth, including that youth are energetic, strong, and hardworking, and can cultivate larger acreages (Table 7).

About 22 percent of OBs mentioned that they engage youth in their businesses to provide young people with employment or means of livelihood (Table 86). According to 25 percent of OBs, they deliberately include young OGs because young people are the future generation who will take over farming. The OBs create opportunities for youth who are already engaged in farming by providing them with timely access to inputs, extension services, and other logistics on credit, with flexible repayment terms and conditions. Some of the

³ See Appendix 2 for details

OBs also engage the youth as lead farmers and tractor operators. The OBs hope that these opportunities will motivate youth to take up agriculture as a source of livelihood and as a form of graduation plan. Buyer firms expressed similar sentiments. About 10 percent of OBs, however, never considered including youth in their dealings with OGs due to their perception that some youth have a negative attitude towards agriculture, as well as their distrust of youth involved in agriculture. These OBs tend to engage with more experienced or older farmers, whom they consider to be more trustworthy and reliable.

As stated above, some buyer firms indicated that the inclusion of women-owned and youth-owned OBs in business relationships was recommended by USAID's ADVANCE project team, which linked them directly to OBs. A few buyers such as ANTIKA, the Aframso Rice Buyers Association, and Crop Care have independently made conscious efforts to include young OBs in their businesses. However, unlike Antika and Aframso Rice Buyers Association, who also made conscious efforts to work with women OBs, Crop Care hesitates to work with women OBs due to the time and effort involved in produce aggregation by women OBs who must also spend time to take care of their families.

Table 6. Involvement of women and youth in business partnerships

	Engage women OGs		Engage Young OGs	
	Frequency	Percent	Frequency	Percent
No			8	9.9
Yes	81	100.0	73	90.1
Total	81	100.0	81	100.0

Source: Field Survey 2018

Table 7. Motivation for involvement of women OGs in outgrower businesses

Motivation factor	Frequency	Percent
Honesty/trustworthy/reliable/higher recovery of credit	41	50.6
Loyalty/dedicated/hardworking/easy to work with	18	22.2
Women's empowerment	2	2.5
Social considerations	14	17.3
No apparent reason	6	7.4
Total	81	100

Source: Field Survey 2018

Table 8. Motivation for including young OGs in outgrower businesses

Motivation factor	Frequency	Percent
Hardworking/strength/energy	22	30.1
Adoption/understanding of technology or new ideas/easy to work with	06	8.2
Employment/livelihood/poverty reduction	16	21.9
Develop passion/mentoring in agribusiness	18	24.7
Honesty/reliability/repayment of credit	05	6.8
Loyalty	06	8.2
Total	73	100

Source: Field Survey 2018

The proportion of young OGs working with OBs ranges from 5 percent to 70 percent, with a mean of about 32 percent. The proportion of women OGs working with OBs is between 8 percent and 80 percent, with an average of 44 percent. A standard deviation of 17.39 and 18.44 implies that the spread of proportions of

youth and women among OGs are little farther from the mean figures quoted above, indicating that distributions are spatial (Table 9).

Table 9. Women and youth as proportion of OGs working with OBs

	Minimum	Maximum	Mean	Std. Deviation	Variance
Youth	5.00	70.00	31.80	17.36883	301.676
Women	8.00	80.00	44.07	18.43986	340.029

Source: Field Survey 2018

2.4 Benefits Accruing to Women and Youth

About 57 percent of the OBs interviewed for the study mentioned that between 50 percent and 79 percent of the benefits along the value chain accrued to women OGs (Table 10). Likewise, according to 63 percent of OBs, between 50 percent and 79 percent of the benefits accrue to young OGs (Table 11). With regards to women- and youth-owned OBs, results from buyer firms paint a slightly different picture. For example, ANTIKA Company, Ltd. estimates that 15 percent of benefits accrue to these groups, G Bosomtwe Ventures pegs this figure at 30 percent, and Agricare, Ltd. Estimated 40 percent. These benefits are principally the financial values generated along the value chain.

Table 10. Extent and distribution of benefits to female outgrowers

Extent of Benefit	Frequency	Percent
Benefits not fairly distributed (<50% women outgrowers)	18	22.2
Large extent (50% to 79% women outgrowers)	46	56.8
Very large extent (>80% of women outgrowers)	17	21.0
Total	81	100.0

Source: Field Survey 2018.

Table 11. Extent and distribution of benefits to youth outgrowers

Extent of Benefit	Frequency	Percent
Benefits not fairly distributed (<50% youth outgrowers)	18	22.2
Large extent (50% to 79% youth outgrowers)	51	63.0
Very large extent (>80% of youth outgrowers)	12	14.8
Total	81	100.0

Source: Field Survey 2018.

2.5 Sustainability of Buyer-sponsored Outgrower Schemes with the Exit of USAID's ADVANCE Project

A fundamental component of any relationship is trust and certainty with regards to obligations. Without these, the relationship is bound to fail because parties cannot be sure of their responsibilities to each other. To this end, signing contracts between buyers and their OBs becomes imperative. The majority (85 percent) of OBs have contracts with their respective buyer firms, while the remaining 15 percent have no formal contracts (Table 12). On the flip side, all buyers have contracts with their respective OBs and most of these contracts are written specifying both the quality and quantity of commodities to be delivered. It is possible that some OBs have business relationship with buyers other than the ones facilitated by ADVANCE, with whom they do not have any contract, or they may have an unwritten contract.

Table 12. Number of OBs and buyer firms that have contracts

Contract	OBs		Buyers	
	Frequency	Percent	Frequency	Percent
No	12	14.8	-	-
Yes	69	85.2	10	100
Total	81	100.0	Frequency	Percent

Source: Field Survey 2018

Among the OBs that responded to the survey, 55 (79.9 percent) had signed a written contract with a buyer firm, while the remaining OBs had verbal contracts with buyers (Table 13). About 85 percent of OBs were able to renegotiate the terms and conditions of their various contracts with buyers, while 15 percent of OBs had no such opportunity for renegotiation possibly because they did not have any issues with their contracts that required renegotiation (Table 14).

Table 13. Types of contract between buyers and OBs

Type of Contract	Frequency	Percent
Non-written (verbal)	14	20.3
Written	55	79.7
Total	69	100.0

Source: Field Survey 2018.

Table 14. Renegotiation of contract with buyers

Renegotiate	Frequency	Percent
No	10	14.5
Yes	59	85.5
Total	69	100.0

Source: Field Survey 2018.

About 91 percent of OBs had contracts outlining a specified quantity of produce to be delivered to the buyers at a mutually agreeable time (Table 15). A slightly higher proportion of OBs (about 96 percent) also had contracts outlining the quality of produce to be delivered to buyers (Table 16).

Table 15. Quantity of produce specified in contract with buyer

Quantity Specified	Frequency	Percent
No	6	8.7
Yes	63	91.3
Total	69	100.0

Source: Field Survey 2018.

Table 16. Quality of produce specified in contract with buyer

	Frequency	Percent
No	3	4.3
Yes	66	95.7
Total	69	100.0

Source: Field Survey 2018

Most OBs, particularly those that receive input credit, receive payments in advance for the planting season. The OBs' contract generally specifies the time when input credit will be paid. In the case of produce delivered to buyer firms in excess of the pre-paid amount, buyer firms either pay immediately after delivery or pay within a specified period. About 55 percent of OBs supplied buyer firms with produce on a seasonal basis, 29 percent supplied produce annually, 7.2 percent supplied produce on a weekly basis, another 7.2 percent had no specific time of delivery, and 1.4 percent of OBs supplied produce to buyers at other specific times, such as bimonthly or biweekly, or per their arrangements (Table 17). The majority (about 97 percent) of OBs also had contracts with buyer firms that specified the commodity prices and terms of payments for the supply of products before delivery (Table 18 and Table 19). Two of the OBs (2.9 percent) had no such obligations and were therefore free to negotiate the price and terms of payment when they delivered their products. OB contracts with buyers that included terms of payment either required payment in full upon delivery or instalments spread over a period of time. Most (about 78 percent) of OBs were paid in full immediately upon delivery of produce, and the remainder (22 percent) of OBs were paid in instalments (Table 20).

Table 17. Period of supply of produce to buyers

Supply Period	Frequency	Percent
Annually	20	29.0
No specific time	5	7.2
Others (specify)	1	1.4
Seasonally	38	55.1
Weekly	5	7.2
Total	69	100.0

Table 18. Price of produce specified in contract with buyer

Price Specified	Frequency	Percent
No	2	2.9
Yes	67	97.1
Total	69	100.0

Source: Field Survey 2018.

Table 19. Terms of payment specified in contract with buyer

Terms of Payment Specified	Frequency	Percent
No	2	2.9
Yes	67	97.1
Total	69	100.0

Source: Field Survey 2018.

Table 20. Method of payment after delivery of produce

	Frequency	Percent
By instalments	15	22.4
Outright payment after delivery	52	77.6
Total	67	100.0

Source: Field Survey 2018.

In their business dealings with buyer firms, about 75 percent of OBs said they did not experience any opportunistic behavior on the part of buyer firms in terms of their contract relationship (Table 21). However, 24.7 percent of OBs said their buyer exhibited some form of opportunistic behavior in their contract relationship. According to the OBs, some buyers cheat by intentionally adjusting the scales used to weigh

grains to get more produce than they pay for. Some buyers also delay payment for the extra supply of produce after the OB has fully repaid the input credit to the buyer, while some buyers refuse to pay the amount agreed upon in the contract for delivery of extra produce.

According to the OBs, opportunistic behavior on the part of buyers can prevent them from paying off loans or from making on-time salary payments to their workers. Other negative effects of buyers' opportunistic behaviors also impact OBs, including reduced profit levels, delays planting the following season's crops that result in low crop yields, and a lack of trust in buyers which is a threat to the sustainability of the relationship. OBs put measures in place to deal with this challenge, include increased selectivity when forming business relationships, finding other potential buyers for their produce, setting a fixed price for their produce or weighing the produce themselves, expressing their grievances to buyers, and signing written and binding contracts or involving a third party in their business dealings. However, about 70 percent of OBs have not instituted any measures to minimize buyer firms' opportunistic behaviors, either because these OBs had not experienced negative behaviors in their business dealings, and/or they did not anticipate such behaviors. They built strong relationships with buyers, resulting in mutual trust, and did not want to lose their buyers as customers.

Table 21. Exhibition of opportunistic behavior by buyers

Opportunistic Behavior	Frequency	Percent
No	61	75.3
Yes	20	24.7
Total	81	100.0

Source: Field Survey 2018.

The study also found that all the buyer firms spoke of OBs' opportunistic behaviors. These mainly included side-selling and the addition of foreign material to shore up the weight of commodities on delivery. One buyer expressed his disappointment, stating, "When the market price is higher than the agreed price, they side sell the produce to other people. However, when the market price is lower than the agreed price, they negotiate with us to take everything they have produced which is not fair." Some buyers (Antika, Agricare, RMG, Agri Invest, Ltd., and Crop Care) instituted measures to deal with these opportunistic behaviors, including provision of technical advice to farmers, and regular monitoring of OBs' farms and operations to acquaint themselves with challenges faced by farmers in the field.

Table 22. Measures to resolve conflict among participants

Measures to Resolve Conflict	Frequency	Percent
No	57	70.4
Yes	24	29.6
Total	81	100.0

Source: Field Survey 2018.

In situations where conflicts arise, the majority (71.6 percent) of respondents did not have any arrangements in place to help resolve the conflict between the parties involved, outside of mediation by USAID's ADVANCE project (Table 23). However, the remainder (28.4 percent) had put some measures in place to ensure that conflicts arising were resolved between all parties. These included measures such as constant communication, forming a committee or platform specifically to resolve conflicts, and presence of a third party to serve as a witness during agreements. USAID's ADVANCE project also helps with mediation, ensuring a well-written contract specifying the terms and conditions of the business relationship. Some OBs

refer to the written contract to resolve any misunderstanding. Others negotiate with the buyers themselves to resolve conflicts. Some buyers also mention that they involve chiefs or community elders when resolving conflicts. In extreme cases, if negotiations fail to resolve a conflict, the courts become involved⁴.

Table 23. Measures put in place to resolve conflicts with buyers by OBs

Measure	Frequency	Percent
Mediation by ADVANCE	3	3.7
Negotiation with buyer	7	8.6
Resolution by platform/leadership/committee	6	7.4
Mediation by witnesses	2	2.5
Mediation through resorting to contract document	3	3.7
Constant communication	1	1.2
Resort to court for resolution	1	1.2
No measures	58	71.6
Total	81	100.0

Source: Field Survey 2018

Seventy OBs (86.4 percent) expressed certainty that they could always supply produce to their buyers, whereas 11 (13.6 percent) were not as confident about the consistency of the produce they provided (Table 24). OBs mentioned the support they provide to their OGs to ensure consistent supply, such as inputs. OBs also reported that they maintain more than one supply source, take orders before delivery times, and store excess produce. Other measures include ensuring constant communication with both suppliers and buyers and using written contracts that specify the amount of produce to be delivered and the time of delivery.

Table 24. Certainty of supply to buyers

Certainty of Supply	Frequency	Percent
Certain (as expected)	70	86.4
Uncertain (irregular)	11	13.6
Total	81	100.0

Source: Field Survey 2018

Most OBs (87.5 percent) reported that their buyers respected the terms and conditions of their agreement (quantity and quality of produce to be supplied and time of delivery), as specified in the contracts, whereas 12.5 percent of OBs had buyers who did not respect or failed to meet their obligations under the contract (Table 25). The reasons that OBs gave for buyers respecting the terms of the contract included: the contracts were legally binding, the buyers trust and respect OBs, the buyers know that a breach of contract will result in lower recovery rates, and also could mean the loss of a reliable source of quality produce. From the perspective of the OBs, the reasons that a few buyers did not respect the terms of the contracts included (i) the contracts were not in written form or not legally binding; (ii) they felt superior to the OBs they worked with, or (iii) because the OBs' produce did not meet their expectations.

Generally, most buyers and OBs respect the terms of signed contracts in terms of payment, quality, quantity, and price of produce supplied. This is a positive indication for the sustainability of outgrower schemes. However, more measures need to be put in place to help resolve conflicts that arises in the course of doing business.

⁴ See

Table 25. Buyers' compliance with terms of agreement of contract

Compliance with Terms of Agreement	Frequency	Percent
No	10	12.5
Yes	70	87.5
Total	80	100.0

Source: Field Survey 2018.

2.6 Challenge Facing Actors in Business Relationships

Some OBs experience internal and external challenges with their buyers (Table 26). Internal challenges include: late or delayed payments for the supply of excess produce, which can negatively affect OBs' plans for the next cropping season; delays picking up produce, resulting in deteriorating quality; low purchasing prices; buyers' complaints about the standard and quality of the produce supplied; high cost inputs due to high interest rates; and poor input supply. Other internal challenges are related to finance, transport, and storage of produce (Table 26). External challenges include increases in fuel prices; poor road networks; climate change; and difficulty in accessing transport for produce delivery. The Planting for Food and Jobs (PFJ) policy, which limits the capacity of farmers to increase acreage under cultivation, is another external challenge for OBs. Under the PFJ policy, farmers are limited to the cultivation of 2.5 ha in order to qualify for subsidies. Also, PFJ threatens the sustainability of the OB scheme since farmers could have access to subsidized inputs directly from MoFA and may decide not to rely on OBs for inputs. However, some OB respondents stated that they did not experience any internal or external challenges with potential buyers.

Table 26. Internal challenges faced by OBs in their relationship with buyers

Internal challenge	Frequency	Percent
No challenge	34	42
Delayed payment of excess produce supplied	12	14.8
Low purchasing price	7	8.6
Transport and storage of produce	6	7.4
High cost and poor input supplied by buyers	7	8.6
Complaint by buyers of quality of produce supplied	7	8.6
Finance	2	2.5
Others	6	7.4
Total	81	100

Source: Field Survey 2018.

The OBs identified challenges to the sustainability of the business relationship that require immediate attention, and they include delayed payment from buyers for excess produce supplied by OBs (12.3 percent), building of trust and/or abiding by contractual terms (11.1 percent), delayed supply of inputs (7.4 percent), and transportation of produce (7.4 percent) (Table 27).

Table 27. Critical challenges identified by OBs as fundamental to the sustainability of their business relationships and requiring immediate attention

Challenge	Frequency	Percent
Delayed payment	10	12.3
Lack of trust/compliance with contractual agreement	9	11.1
Delayed supply of input	6	7.4
Provision of transport for carting of produce	6	7.4
No challenge	50	61.8

Total	81	100
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Source: Field Survey 2018.

2.7 Arrangements to ensure sustainability of the buyer/OB business relationship

Buyer firms reported measures to ensure the sustainability of their business relationships with OBs. These measures included education on recommended agronomic practices; employing agronomists and agricultural extension agents (AEAs) to monitor OBs' field activities; facilitating and paying for OGs' insurance premiums to insulate them against natural disasters; and pursuing good relationships with OBs. Four buyers (33.3%) (—ANTIKA, Crop Care, Agri-invest, and Agricare—) employed extension agents to meet regularly with farmers and provide them with technical advice. In addition, four (33.3 percent) of the buyer firms including Crop Care, Agri-invest, Agricare, and ANTIKA have field staff who visit at least three times during the production cycle to acquaint themselves with challenges faced by farmers during the production season. Perhaps the most innovative measure is RMG's use of GPS technology to verify OB and OGs' fields and scope of work. RMG also tested the use of drones to spray OB/OG fields with agrochemicals, for its efficiency and cost-effectiveness. Since 2018, some buyer firms (Agricare and Crop Care) installed traceability systems to trace produce to the plot level in order to monitor produce quality. This system ensures that farmers comply with the terms of their contract (Table 28).

Table 28. Measures taken by buyer firms to ensure sustainability of the business relationship facilitated by USAID's ADVANCE Project

		Responses	
		N	Percent
Measures	Verification of OB fields and scope of work using GPS	1	8.3%
	Intensify education on recommended agronomic practices	3	25.0%
	Employed agronomist and AEAs for effective monitoring of OBs	4	33.3%
	Pursuing good human relationships with OBs	1	8.3%
	Linked up with more OBs for increased supply	1	8.3%
	Building relationship with OB on trust	4	33.3%
	Expanding market share	4	33.3%
	Intensify education to farmers to take farming as a business	2	16.7%
	Facilitating and paying for insurance premium for OGs to insulate farmers against natural disasters	3	25.0%

Source: Field Survey 2018.

Some OBs (37 percent) knew about public policies in place, such as the crop insurance policy, that helped to insulate OBs from natural risks and protected OBs from crop failure (Table 29). However, the majority of OBs (60.5 percent) had no knowledge of such policies. Smallholder farming is prone to natural disasters such as drought, flood, and bush fires, which often result in crop failure. Such disasters prevent OGs from meeting their contractual obligations, resulting in lower recovery rates for both buyers and OBs. To insulate OGs against natural disasters, some buyers facilitate and pay for insurance premiums. While some OBs had access to insurance products to mitigate risks that could arise in their crop production enterprises, 42 of the OB respondents (51.9 percent) did not use any insurance products. Buyers paid the premiums for these insurance products on behalf of OBs as part of a credit package (Table 30).

Table 29. Awareness of public policies that insulate against natural risk

Awareness of Policy	Frequency	Percent
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No response	2	2.5
No	49	60.5
Yes	30	37.0
Total	81	100.0

Source: Field Survey 2018.

Table 30. Access to insurance products to mitigate risks

Access to Insurance	Frequency	Percent
No response	5	6.2
No	42	51.9
Yes	34	42.0
Total	81	100.0

Source: Field Survey 2018.

Information exchange platforms are a major avenue for communication among value chain actors within outgrower schemes. These platforms are used to share information related to outgrower businesses, including weather, agronomic information, and market information to improve efficiency and reduce transaction cost. An appreciable proportion (69 percent) of OBs had access to existing information exchange platforms to help reduce transaction costs and increase frequency of feedback for OBs and buyers (Table 31). These information exchange platforms include the Ghana commodity exchange, call network platforms, text messages, and WhatsApp group platforms. Some OBs, (25.9 percent) did not yet have access to such information platforms (See Appendix 6 for details).

Table 31. Access to information exchange platforms

Access to Information Exchange Platforms	Frequency	Percent
No response	4	4.9
No	21	25.9
Yes	56	69.1
Total	81	100.0

Source: Field Survey 2018.

Approximately 64 percent of respondent OBs were aware of knowledge and information assistance support systems and services in place for OBs and buyers, including the systems and services provided by the ADVANCE project, other agricultural-based agencies, and on the radio. In contrast, 23 OBs (28.4 percent) were not aware of these support systems.

OBs shared the lessons they learned through business dealings with buyers, including the importance of honesty, trust, and mutual understanding in a business relationship, signing legal and binding contracts, purchasing crop insurance to mitigate the risk of crop failure, awareness of the risks that may arise as a result of business dealings with buyers, and developing and maintaining good business relationships with their buyers. OBs also mentioned lessons, including the importance of recordkeeping, accurately pricing produce, good agricultural practices, proper post-harvest processing methods, and reducing post-harvest losses. OBs also learned how to produce quality crops to meet the requirements of buyers and to supply their produce on time.

From the perspective of buyers, lessons learned include the adoption of good supply chain management practices, and the need for traceability systems so that commodities can be traced to the plot level. To ensure high recovery rates of credit advanced to OBs, buyers mentioned the need to become proactive by implementing effective monitoring of OB activities to ensure desired results with recovery of credit. To forestall low recovery rates from credit advanced to OBs, as well as to save time and reduce the cost of

recovery through reduction of operational and transactional costs, buyers encourage OBs to work with farmer groups. This ensures that liabilities associated with default are borne by the group. Buyers also instituted measures to directly educate farmers on the cost build-up of cultivation and the mutual benefits that accrue to each actor along the value chain. These efforts are intended to help prevent a potential revolt and to minimize farmers' feelings of 'being exploited' by buyers, along with OBs.

To sustain the current state of their relationship with buyers, OBs require more assistance from external agencies to build a sustainable input and service market. OBs must expand their services and produce the quality and quantity of produce required by buyers, ensure timely delivery of inputs, and provide tractors and shelling services, and basic testing equipment like moisture meters. Respondent OBs mentioned specific types of assistance from external agencies, including financial support and access to market information, provision of storage facilities after harvest, as well as the provision of office buildings and equipment such as computers to help with recordkeeping, accounting and operations management. OBs also reported that buyers should improve conditions to sustain current relationships, including prompt payment or flexible payment terms for the delivery of produce to buyer firms, use and adherence to written contracts, improved insurance claims, constant communication between buyers and OBs, reasonable interest rates, and buyer-provided transport services to facilitate produce delivery.

About 91 percent of OBs report very strong or strong business relationships with their buyers (Table 32).

Table 32. Strength of relationship of OBs with buyers

Strength of Relationship	Frequency	Percent
Strong	40	49.4
Very strong	34	42.0
Weak	7	8.6
Total	81	100.0

Source: Field Survey 2018.

End buyer firms stated that if OBs upgrade their business management skills to become more business-minded, it would incentivize buyers to continue long-term relationships. Again, buyers consider trustworthiness, which is key to any relationship, as very essential to keep them in business relationship with their respective OBs. According to buyers, other long-term incentives include quality assurance with consistent supply, accurate commodity price predictions for goods supplied by OBs, and cheaper sources of finance to shore up buyer firms' operations. These incentives will help buyers sustain the financial muscle for their own operations and to support OBs with funds that will eventually trickle down to outgrowers (Table 33).

Table 33. Long term incentives as motivating factors for buyers to continue engaging OBs

		Responses	
		N	Percent
Incentives	Upgraded skills of OBs (business management)	7	20.00%
	Trustworthiness in the relationship with OBs	9	25.70%
	Quality assurance with consistent supply	6	17.10%
	Certainty in price prediction	6	17.10%
	Cheaper sources of finance	7	20.00%
Total		35	100.00%

Source: Field Survey 2018.

2.8 Effectiveness of USAID’s ADVANCE Project Support to Lead Firm/Buyer Outgrower Schemes

All the respondent OBs benefited from their relationships with USAID’s ADVANCE project. The project trained OBs using a nine-module training curriculum covering agribusiness, financial management, cash flow management, marketing, negotiation skills, entrepreneurship, recordkeeping, managing outgrower schemes, leadership, and women’s economic empowerment. The project also provided other facilitating services, including linking OBs to prospective buyers, facilitating access to credit from financial institutions, assisting OBs to acquire necessary inputs for increased productivity, providing market information, and helping OBs access weather forecasts to plan farming activities. USAID’s ADVANCE project also provided grant funds through a cost-share arrangement, where OBs contributed 30 percent towards an identified cost as leverage, and the project provided the other 70 percent of required funds. These cost-sharing grants enabled OBs to purchase production equipment such as shellers, tractors, and planters.

Among buyers, 100 percent reported that their experience with the ADVANCE project positively impacted their business. Specifically, buyers saw increases in profit levels, the quality of commodities sourced from OBs, the assurance of consistent supply of commodities, and increased knowledge of good agronomic practices and business management. In general, USAID’s ADVANCE project facilitated business relationships that ultimately increased the profit levels of both buyer firms and OBs. The majority of OBs (96 percent) expressed confidence that they would maintain their current relationships with buyers in the absence of project support. Only a few OBs (4 percent) did not express confidence in their ability to maintain their current relationships with buyers without project support (Table 34).

According to buyers, the relationship between OBs and USAID’s ADVANCE project improved the quality of commodities OBs deliver to buyer firms, leading to higher profitability. Again, the majority of OBs recorded high recovery rates for input credit advanced to OGs (above 90 percent on average⁵). In a bid to ensure the sustainability of the outgrower relationship after the project ends, OBs formed very strong relationships with their OGs. OBs also formed associations called outgrower business networks (OB networks), tasked with training and supporting their members, taking on roles of advocacy and lobbying, reinvesting profits back into the business, and ensuring adherence to contracts. The associations also ensure constant and effective communication between OBs and their OGs, continued provision of both technical and financial support to OGs, establishment of more OGs, and the creation of new OG schemes in areas not covered by the project.

Table 34. Maintenance of buyer relationship without USAID ADVANCE support

Maintenance of Buyer Relationship	Frequency	Percent
No	3	3.7
Yes	78	96.3
Total	81	100.0

Source: Field Survey 2018.

The growth in revenues that OBs realized from 2014 to 2017 shows both negative and positive outcomes. Some OBs recorded almost 100 percent negative growth, while others recorded positive growth of up to 7,400 percent. One possible explanation could be the readily available market and introduction of productivity-enhancing activities, facilitated by USAID’s ADVANCE project, such as good agronomic practices that contribute to increased yields. On the whole, mean growth in revenue between 2014 and 2017

⁵ See Appendix 6 for details

ranged from 11 percent to 303 percent, indicating positive outcomes on OB income in business relationships with buyers (Table 35).

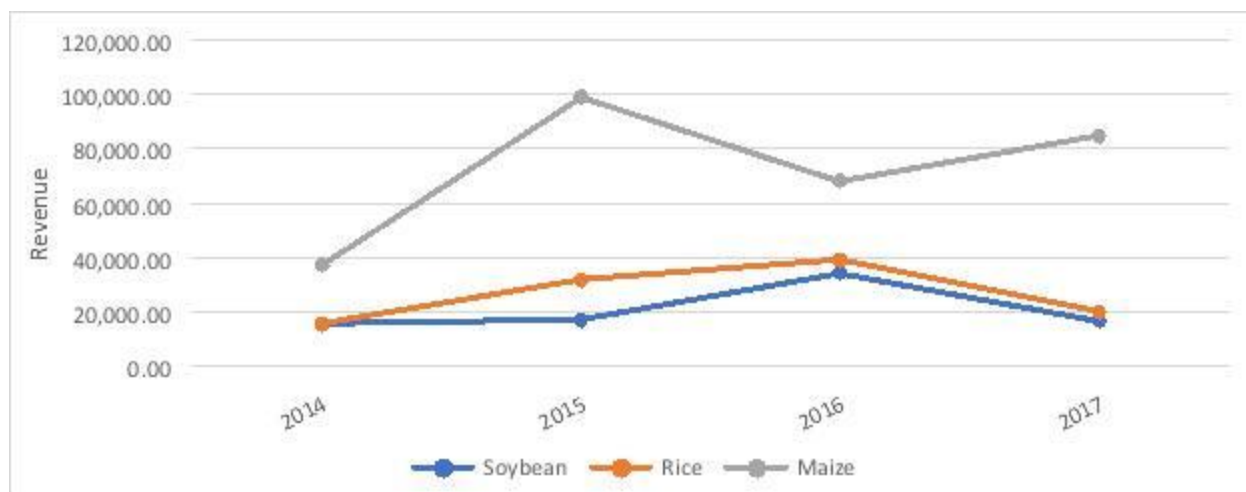
Table 35. Growth in revenue realized from soybean, rice, and maize by OBs (GHS)—2014 to 2017

	Minimum	Maximum	Mean		Std. Deviation
			Statistic	Std. Error	
Growth rate of soybean revenue between 2014 and 2015 (%)	-99.05	119.51	11.13	11.68	58.39
Growth rate of soybean revenue between 2015 and 2016 (%)	-66.67	718.18	93.30	39.56	181.27
Growth rate of soybean revenue between 2016 and 2017 (%)	-98.61	900.00	48.71	55.31	228.05
Growth rate of rice revenue between 2014 and 2015 (%)	-78.13	900.00	140.24	53.95	264.30
Growth rate of rice revenue between 2015 and 2016 (%)	-66.67	2,042.86	119.20	92.84	435.47
Growth rate of rice revenue between 2016 and 2017 (%)	-98.29	7,400.00	302.83	308.85	1,513.07
Growth rate of maize revenue between 2014 and 2015 (%)	-96.67	2,525.00	139.97	56.95	410.69
Growth rate of maize revenue between 2015 and 2016 (%)	-89.72	2,602.70	181.93	65.20	479.11
Growth rate of maize revenue between 2016 and 2017 (%)	-92.59	2,740.91	146.58	55.23	431.39

Source: Field Survey 2018

The mean of revenue realized by OBs between 2014 and 2017 shows a positive trend, with the peak mean revenue in 2015 for maize. In effect, OBs that deal in maize realized the highest mean figures in revenue over the period (Figure 4.1).

Figure 4 I: Trend in mean revenue realized by OBs (GHS)—2014 to 2017



Source: Field Survey 2018.

The tests in the differences of mean revenue realized from the three commodities—soybean, rice, and maize—show that, apart from soybean, which recorded statistically significant differences in revenue between periods 2016 to 2017, the revenue from the other two commodities showed no significant differences, although positive revenues were recorded. Generally, OBs affirm that they realized positive growth in their revenue due to USAID’s ADVANCE project facilitating linkages to buyers.

Table 36. Tests of differences in mean revenue for soybean, rice, and maize—2014 to 2017

t-test for Equality of Means					
	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Soybean revenue realized between 2014 and 2015	-0.91	50.00	0.37	-12,565.58	13,880.05
	-0.94	31.18	0.36	-12,565.58	13,436.23
Soybean revenue realized between 2016-2017	-2.04	53.00	0.05	-35,252.28	17,276.21
	-2.01	29.02	0.05	-35,252.28	17,562.28
Rice revenue realized between 2014 and 2015	-1.40	110.00	0.16	-167,345.49	119,691.83
	-1.45	57.41	0.15	-167,345.49	115,482.20
Rice revenue realized between 2016–2017	1.11	52.00	0.27	17,585.33	15,828.04
	1.05	28.54	0.30	17,585.33	16,818.59
Maize revenue realized between 2014 and 2015	1.48	52.00	0.15	19,033.73	12,898.57
	1.40	31.25	0.17	19,033.73	13,599.47
Maize revenue realized between 2016-2017	-0.28	136.00	0.78	-7,664.95	26,916.62
	-0.29	134.86	0.77	-7,664.95	26,719.85

Source: Field Survey 2018.

2.9 Levels of Efficiency of Various Outgrower Schemes Facilitated by USAID's ADVANCE Project

A cursory look at the performance of buyer firms' various schemes shows that the schemes can be categorized into four levels of efficiency based on institutional and operational arrangements put in place to ensure efficiency and sustainability. These categorizations are very efficient, efficient, inefficient, and very inefficient schemes (Table 39). Those schemes in the very efficient category include RMG, Akate Farms, Agri-invest, Ltd., and Antika. Those in the efficient category include ANS Mills, Aframso Rice Buyer Association, and Agricare. A few schemes (Premium Foods and E. GABS) appears to be struggling, and can be described as inefficient, while one scheme (G. Bosomtwe) is described as very inefficient and has collapsed. One scheme (Crop Care) is yet to make its first purchase but appears to be very promising. It put in place very good institutional and operational arrangements to ensure a high recovery rate of input credit.

The efficient and very efficient schemes with high levels of success are those that employ agronomists and agricultural extension agents to offer extension services to farmers and monitor the progress of primary agricultural production on their OBs' fields. (See Table 39). For example, the schemes operated by Agri-invest, Ltd., Agricare, Ltd., RMG, and Antika demonstrate high level of success and efficiency because they engage the services of agronomists and extension agents to ensure compliance with recommended agronomic practices, and ensure high recovery rates of inputs advanced on credit to OBs. They also ensure timely delivery of inputs and collect farm produce from the farm gate. On the flip side, the schemes operated by G Bosomtwe Ventures and Vester Oil Mills, Ltd., collapsed or are not working well because the firms made no efforts to monitor OB activities. The success of the schemes lies in implementing effective monitoring measures for OB activities (see Table 37 to Table 39).

Table 37. Operational characteristics of different outgrower schemes under USAID's ADVANCE project

Company Name	Main Commodity	Input Arrangement	Involve Women-owned OBs	Involve Youth-owned OBs	Terms of Payment of Commodity	Contract Enforcement on Quality	Contract Enforcement on Quantity	Conflict Resolution Measures?
ANS Mills	Rice	Not involved in input credit. Purchases paddy and pays OB on commission, based on quantities purchased	Not so much (OBs brought onboard by ADVANCE)	Not so much (OBs brought onboard by ADVANCE)	Outright payment after delivery. OBs paid on commission for extra paddy bought outside the business relationship	Yes, often by verbal contract	Yes	Yes (if dialogue fails, sever relations with OB concerned)
Premium Foods, Ltd.	Maize	Provides input credit to OBs	No. Only men-owned OBs were provided by ADVANCE	No. OBs were provided by ADVANCE	Payment made through input credit. Excess produce is paid on credit. OBs raise local purchasing orders (LPOs) on weekly basis and are paid	Yes, by written contract	Yes, by written contract	Yes
G Bosomtwe Ventures	Soybean	Provided input credit to OBs	Not so much (OBs brought onboard by	Not so much (OBs brought onboard by	Payment is made in advance through input credit. Excess produce paid outright after delivery	Yes, by written contract	Yes, by written contract	Yes

			ADVA NCE)	ADVANC E)				
Aframs o Rice Buyers Associ ation	Rice	1. Provides input credit to individual farmers (weedicide, fertilizer, seed, etc.) and tractor services 2. Provides financial support to OBs for purchase of paddy	Yes, involve women farmers (women are hardwor king and trustwor thy)	Yes (as part of succession plans)	Payment is made in advance through input credit. Excess produce is paid outright after delivery. OBs paid on commission for extra paddy bought outside the business relationship	Yes, often by verbal contract	Yes, often by verbal contract	Yes (OBs must provide guarantors in case of default
E GABS Gh., Ltd.	Soybe an	Paid cash for only land preparation (no input credit advanced to OBs)	Not so much (OBs brought onboard by ADVA NCE)	Not so much (OBs brought onboard by ADVANC E)	Payment made in advance through credit for land preparation; excess produce is paid in instalments (within a month after delivery)	Yes, by written contract	Yes, by written contract	Yes (dialogue)
Vester Oil Mills, Ltd.	Soybe an	Provided input credit to OBs, but stopped in 2014	Yes (women are trustwor thy and stick to supply schedule)	Yes (to create employe ment for them)	Payment made in advance through input credit	Yes, by written contract	Yes, by written contract	Yes (dialogue)
Crop Care Gh., Ltd.	Maize	1. Provides input credit to OBs (weedicide, fertilizer, seed, etc.) and tractor services 2. Provides financial support to OBs for purchase of grains	No (too much drudgery involved for women)	Yes (youth are aggressive and attract others who see successes of peers)	Purchase is yet to be done. Payment is already made through input credit. Excess produce will be paid after produce supply.	Yes, by written contract	Yes, by written contract	Yes (if dialogue fails, legal action is taken)
Agricar e, Ltd.	Maize	1. Provides input credit to OBs (weedicide, fertilizer, seed, etc.) and tractor services for land preparation	Yes (women are hardwor king and trustwor thy)	Yes (youth are trustworth y and loyal)	Payment is made in advance through input credit. Excess produce is paid outright after delivery	Yes, by written contract	Yes, by written contract	Yes (if dialogue fails, legal action is taken)
RMG	Maize	1. Provides input credit to OBs (weedicide, fertilizer, seed, etc.) and tractor services 2.	Yes (women are trustwor thy, and open-	Yes (provided with flexible credit terms, esp.	Outright payment after delivery	Yes, by written contract	Yes, by written contract	Yes

		Provides financial support to OBs for purchase of grains	mindful, easier to understand terms in case of renegotiation of contract terms)	for start-ups)				
Antika Company, Ltd.	Rice, Maize, Soybean	Provides financial support to OBs for purchase of paddy. Also provides input (seeds, fertilizers, insecticides) to OBs and FBOs for production of maize and soybean	Yes (internal policy to include at least 30 percent women-owned OBs and FBOs)	Not a conscious effort to include youth-owned OBs	Payment is made in advance through input credit. Excess produce is paid outright after delivery	Yes	Yes	Yes (dialogue to resolve issues)
Agriinvest, Ltd.	Maize	Provide input credit to three OBs. Purchases maize grain on cash basis at the beginning of the harvest season	Yes (women are hardworking and trustworthy—reduce risk of loss)	Yes (youth have energy and can-do spirit)	Outright payment after delivery			Yes (dialogue)
Akate Farms, Ltd.	Maize	1. Provides input credit to OBs (weedicide, fertilizer, seed, etc.) and tractor services 2. Provides financial support to OBs for purchase of grains	No (too much drudgery involved for women)	Yes (youth have energy and can-do spirit)	Payment is made in advance through input credit. 21-day credit terms agreed with OBs for the payment of excess produce purchased	Yes, by written contract	Yes, by written contract	

Table 38. Challenges faced by different outgrower schemes, and insurance and public policies that insulate OBs against risks under USAID's ADVANCE project

Company Name	Internal Challenges Faced Relative to Achieving Successes of Model	External Challenges Faced Relative to Achieving Successes of Model	Critical Challenges that Need to be Addressed Immediately	Insurance Products to Mitigate Risks	Production Information Exchange Platforms	Any Public Policies that Insulate your OBs against Risk of Loss
ANS Mills	Some OBs not truthful regarding weight of supplied products	Price fluctuations on the local market		None	None	Don't know of any
Premium Foods, Ltd.	Funding difficulties, high default rate of input credit to OBs, OBs lack business mindset	1. Improper fertilizer blends 2. Forex losses	Education to change mindset of OBs towards business-mindedness	Yes. GAIP	Phone voice calls 2. WhatsApp platforms	Irrigation schemes
G Bosomtwe Ventures	High default rate of input credit to OBs	High importation of soya cake	Cheating behavior of OBs must be addressed	None	None	None
Aframso Rice Buyers Association	Some OBs not truthful in dealings	Price fluctuations on the local market	Funding to purchase larger quantities of paddy all year round	None	Phone voice calls	Don't know of any
E GABS Gh., Ltd.	High default on part of OBs	Competitors with financial resources purchasing more on the market (limits our ability to purchase more beans)	Financial difficulties addressed	None	Phone voice calls 2. WhatsApp platforms	GAIP. (But not subscribed to this service)
Vester Oil Mills, Ltd.	Dishonesty in raw material supplied by OBs		OBs must be educated to be sincere in their dealings			
Crop Care Gh, Ltd.	Under-weighing of commodity delivered 2. OBs misreporting recovery rates	None	Under-weighing of commodity delivered	Yes. GAIP	Phone voice calls 2. WhatsApp platforms	

Agricare, Ltd.	Misunderstanding of contract terms	Insurance firm not paying agreed claims after crisis 2. PFJ limits acreage to only 10 acres per farmer, but could do more	PFJ should consider larger acreages for farmers	Yes. GAIP	WhatsApp platforms but not working well	PFJ
RMG				No	WhatsApp platforms	Cheaper seeds from Govt's PFJ
Antika Company, Ltd.	Limited capacity to provide more input credit than currently given	PFJ disrupts input credit disbursement	Gov't should channel distribution of PFJ fertilizer through buyer firms	Yes. GAIP	Phone voice calls 2. WhatsApp platforms	None
Agri-invest, Ltd.	None	None	None	None	WhatsApp platforms, but not working well	
Akate Farms	None	None	None	None	WhatsApp platforms	None

Table 39. Institutional and operational arrangements instituted by buyers under different outgrower schemes under USAID's ADVANCE project

Company Name	Institutional Arrangements to Manage Relationship with OBs	Major Benefits Derived from Relationship with OBs	Measures Instituted to Ensure Continuous Supply of Raw Materials	Operational Set-up to Manage Relationship with OBs	Input Credit Recovery Rate	Level of Efficiency
ANS Mills		1. Better quality rains increased volumes of raw materials 3. Increased profit from sales of increased volumes	Have established business relations with more OBS	None	99%	Efficient
Premium Foods, Ltd.	1. Skill training of OBs. 2. Quality control measures to ensure compliance	1. Better quality grains. 2. Increased volumes of raw materials 3. Increased profit from sales of increased volumes	Paying higher-than-prevailing market price	Provision of machinery (tractors, threshers, shellers, moisture meters, etc.) to OBs	About 50%	Inefficient

G Bosomtwe Ventures	Quality control measures instituted	Some level of high-quality beans	Relationship with OBs collapsed	Provided financial support to OBs 2. Guaranteed loans for OB operations	45%	Very inefficient; scheme collapsed in 2016
Aframso Rice Buyers Association	Minimal monitoring of OBs conducted	1. High quality paddy 2. Varietal mixing is eliminated 3. Traceability skills developed	Built warehouse and plans expansion of warehouse storage capacity 2. Branding of milled rice to keep market share	Provides tractor services for land preparation	> 90%	Efficient
E GABS Gh., Ltd.	None	High quality beans		None	About 40%	Inefficient
Vester Oil Mills, Ltd.	Quality checks instituted before processing	None	Only buys on commission from OBs now	None	40%	OB relationship not working well
Crop Care Gh, Ltd.	Provides OBs with input credit. 2. Extension support services 3. Monitor OB fields regularly to ensure compliance with good agronomic practices	Yet to know (new scheme)	Provides technical support to OBs in the form of extension services	Provides OBs with input credit. 2. Extension support services 3. Monitor OB fields regularly to ensure compliance with good agronomic practices	Yet to know	Yet to purchase from OBs but looks very promising
Agricare, Ltd.	1. Employed extension agents for monitoring 2. Employed agronomist to ensure compliance with good agronomic practices 3. Preseason meetings with OBs to set prices and resolve teething problems within the season	1. Better quality grains 2. Increased profit from reduced production cost	Employed agronomist and extension agents to ensure compliance with recommended agronomic practices	Provide OBs with input credit, provides transportation services for distribution of inputs, provides extension services to farmers, monitor farmers' fields during growing season	95%	Efficient
RMG	Employed agronomist for monitoring OB fields	1. Gained experience working with OBs 2. Better understand the use of hybrid seeds	Verify OB fields using PS location and drones 2. Intensify education on agronomic practices	Provides input credit through PFJ, provides drones for spraying herbicides on OB fields	98%-100%	Very efficient

Antika Company, Ltd.	Meet with OBs twice a year to discuss input packages and recovery rates. 2. Farmers trained on minimizing post-harvest losses	1. Avenue for increased sales 2. Avenues for increased sale of inputs	1. Timely delivery of inputs. Picking raw commodity from the farm gate 3. Regular supervision and monitoring of OB fields	Provides OBs with input credit. 2. Extension support services 3. Monitor OB fields regularly to ensure compliance with good agronomic practices	Over 90%	Very efficient
Agri-invest, Ltd.	Intensified education on GAPs	Good supply of grains	Employed a team of agronomist and extension agents to assist dealing with OBs	Employed extension agents for monitoring 2. Frequent farmer visits to understand needs and solve problems that arise	Over 90%	Very efficient
Akate Farms	We simply employed the OB to keep him close and give him a secured cash flow via monthly salaries	Reliable and consistent supplies of grains at the right time	1. Timely delivery of inputs 2. Not overloading farmers with too much debt	Provide all logistics required to aggregate recoveries and grains from farmers	93%-100%	Very efficient

CONCLUSION

The conclusion section considers the validity of this study's hypotheses. The team collected data with a census—all OBs and buyers who sponsored outgrower schemes in USAID's ADVANCE II project. The team used descriptive statistics, principally frequency distribution tables and multiple response options, in analysis and to answer the study hypotheses.

✓ The first hypothesis was that end-buyer firms realize long-term sustainable benefits that motivate them to invest in outgrower schemes. The results of analysis support this hypothesis, based on the results from Table 11 to Table 28.

Based on quantitative analysis of results from both data sets, OBs and buyer firms report a positive leaning towards sustainability of business relations, as stated above. These results culminated in the results reported in Table 28—the buyer firms' recognition of long-term sustainable incentives that provide the motivation to continue investing in outgrower schemes through OBs. These incentives include upgrading the business management skills of OBs, quality assurance with consistent supply of commodities from OBs, certainty in the prediction of commodity prices supplied by OBs, and cheaper sources of finance for operations. Another long-term incentive hinges on trust among parties, which is key to buyers continuing business relationships with respective OBs.

✓ The second hypothesis was that buyer-sponsored outgrower schemes are mutually beneficial (economically and socially) to the buyers and participating OBs, and the business relationships will be maintained and improved as long as these benefits accrue. The results of analysis support this hypothesis.

The study found the following economic motivating factors for OBs: assurance of availability of inputs for each season, adoption of new production technologies, easy access to credit, accessibility of advice from

extension agents, and readily available inputs from buyer firms. Some buyers (25 percent) not only provided OBs with inputs, but also provided extension services and training in good agricultural practices, enabling farmers to increase their yields. This implies that if OBs continue to enjoy these economic benefits, they will maintain business relationships with buyer firms and eventually build trusted networks. The main economic motivating factors from buyer's perspective include: an assurance of high-quality produce from OBs, consistency in supply of produce and reduction in risks and costs associated with dealing directly with OGs, and profit from high-quality produce. The social factors that motivate OBs to enter into relationships with buyers include: a desire to better the lives of outgrowers by providing opportunities to access inputs and output markets, eventually improving household income, and providing smallholder farmers with access to consistent and reliable markets that drive economic activities in rural areas. From the perspective of buyer firms, social factors include building a trusted network of OBs to ensure timely supply of quality produce, and a desire to provide livelihood opportunities to improve OBs' standards of living, which will eventually trickle down to OGs. The results of analysis support this hypothesis.

✓ The third hypothesis was that the capacity-building activities provided to various actors by USAID ADVANCE is a key factor in the development of new outgrower schemes. The study results support this hypothesis.

All OBs benefited from their relationships with USAID's ADVANCE project. These benefits include: the provision of extension services and training in good agricultural practices, linkages between OBs and prospective buyers, provision of grants to OBs for the purchase of production equipment such as shellers, tractors, and planters, facilitation of access to credit from financial institutions, assistance to acquire the necessary inputs to improve production, provision of market information, and access to weather forecast information to help farmers plan. Among buyers, 100 percent reported a positive effect on their business. These effects are demonstrated by increases in profit levels, increases in the quality of commodities sourced from OBs, assurance of consistent supply of commodities from OBs, and increases in knowledge as pertains to good agronomic practices and business management. USAID's ADVANCE project provided technical assistance that helped increase revenue levels of both buyer firms and OBs. Percentage growth in this regard ranges from 11 percent to 303 percent. The majority of OBs are confident in maintaining their current relationships with buyers in the absence of any continued project support. The positive results from current relationships provide a basis for developing new outgrower schemes.

✓ The fourth hypothesis was that actors deliberately include women and youth in outgrower schemes because they recognize the value that these sections of the populace bring to business operations and benefits. This study's findings lay a basis to support this hypothesis.

All OBs consciously include women in their dealings with OGs. They consider women to be more trustworthy, reliable, and serious than their male counterparts, making it more attractive to work with them. They stated that women were more willing to apply new technologies than men, and that women will reliably pay off credit than men. Some OBs seek out women OGs because of the factors stated above, and for social factors, including the desire to improve women's livelihoods. This social component then serves as a motivating factor for buyer firms to invest in outgrower schemes. OBs are motivated to engage with young OGs, describing them as easy to work with and more open to adopting new production methods and technologies. OBs consider young OGs to be the future generation who will take over farming, and are motivated to create opportunities for youth already engaged in agriculture by providing them with timely access to inputs, extension services, and other logistics on credit, with flexible repayment terms and conditions. Most buyers also engaged young OBs in their schemes. They value the inclusion of the youth because aggregation of farm produce requires commitment and energy, and benefits from active young participants. According to buyers, youth also have large followings and are more likely to attract their peers to participate in schemes, leading to growth and positive results. Considering that buyer firms and their OBs reported positive business outcomes as a result of engaging with USAID's ADVANCE project, they have

incentive to continue and expand these business relations, making the benefits even more widespread. Enough basis has been laid in the findings of this study to support this hypothesis.

Recommendations

- ✓ Buyer firms and OBs should avoid opportunistic behavior, which negatively impacts business relationships.
- ✓ The efficiency results indicate firms are more successful when they employ agronomists and agricultural extension agents to monitor OB activities, and supply inputs in a timely manner. Buyer firms should design measures to monitor the work of OBs, instead of leaving the crop production process at the discretion of OBs.
- ✓ Successful OB-buyer firm relationships require effective conflict resolution mechanisms.
- ✓ Buyer firms should provide transportation support to OBs to deliver inputs to OB fields and harvested commodities from the farm gate.
- ✓ OBs should undertake additional training to build their capacity in business operations, increasing their appeal to buyers for further collaboration.

Limitations of the study

- ✓ **Limited availability and transparency of buyer firms.** Four of the sixteen buyer firms were not available to be interviewed during the study. Additionally, buyer firms were not willing to divulge sensitive information, especially quantitative figures related to their profit. They did report increases in their profit levels after their links with OBs facilitated by USAID's ADVANCE team.
- ✓ **Combination of studies posed a challenge to enumerators:** Instead of sending multiple enumerators to visit the same OBs, collecting different information for the five studies, one enumerator collected information for more than one study in many cases. This reduced the fatigue that OBs face having to participate in separate studies but placed significant pressure on the enumerators. However, data quality assurance and validation process ensured that data quality was not compromised.
- ✓ **Data attributes:** The attributes of the data generated from the survey limited the level of analysis as the variables were mostly *string* variables, and therefore restricted statistical analysis to descriptive statistics.

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APPENDICES

Appendix IA

SET OF ECONOMIC, FINANCIAL, AND SOCIAL MOTIVATING FACTORS FOR OBS TO ENGAGE ENTER INTO BUSINESS RELATIONSHIP WITH BUYER FIRMS

Cross-tabulation of region by sex of respondent (OB)

			Sex of respondent		Total
			Male	Female	
Choose region	Northern	Count	29	1	30
		% within choose region	96.7%	3.3%	100.0%
	Upper East	Count	18	2	20
		% within choose region	90.0%	10.0%	100.0%
	Upper West	Count	28	3	31
		% within choose region	90.3%	9.7%	100.0%
Total	Count	75	6	81	
	% within choose region	92.6%	7.4%	100.0%	

Increases in income: Did this motivate you to establish relationship with buyer?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	3	3.7	3.7	3.7
	Disagree	2	2.5	2.5	6.2
	Somewhat agree	3	3.7	3.7	9.9
	Agree	28	34.6	34.6	44.4
	Strongly agree	45	55.6	55.6	100.0
	Total	81	100.0	100.0	

Assurance of inputs: Did this motivate you to establish relationship with buyer?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	1	1.2	1.2	1.2
	Somewhat agree	1	1.2	1.2	2.5
	Agree	41	50.6	50.6	53.1
	Strongly agree	38	46.9	46.9	100.0
	Total	81	100.0	100.0	

Reliable market: Did this motivate you to establish relationship with buyer?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	33	40.7	40.7	40.7
	Strongly agree	48	59.3	59.3	100.0
	Total	81	100.0	100.0	

Adoption of new technologies of production: Did this motivate you to establish relationship with buyer?

		Frequency	Percent	Valid Percent	Cumulative Percent
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Valid	Disagree	3	3.7	3.7	3.7
	Somewhat agree	6	7.4	7.4	11.1
	Agree	43	53.1	53.1	64.2
	Strongly agree	29	35.8	35.8	100.0
	Total	81	100.0	100.0	

Easy access to credit: Did this motivate you to establish relationship with buyer?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	15	18.5	18.5	18.5
	Somewhat agree	10	12.3	12.3	30.9
	Agree	31	38.3	38.3	69.1
	Strongly agree	25	30.9	30.9	100.0
	Total	81	100.0	100.0	

Accessibility of advice from extension agent: Did this motivate you to establish relationship with buyer?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	8	9.9	9.9	9.9
	Somewhat agree	5	6.2	6.2	16.0
	Agree	39	48.1	48.1	64.2
	Strongly agree	29	35.8	35.8	100.0
	Total	81	100.0	100.0	

Inputs are readily available: Did this motivate you to establish relationship with buyer?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	5	6.2	6.2	6.2
	Somewhat agree	5	6.2	6.2	12.3
	Agree	35	43.2	43.2	55.6
	Strongly agree	36	44.4	44.4	100.0
	Total	81	100.0	100.0	

Improved local infrastructure like rural roads: Did this motivate you to establish relationship with buyer?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	5	6.2	6.2	6.2
	Disagree	27	33.3	33.3	39.5
	Somewhat agree	13	16.0	16.0	55.6
	Agree	22	27.2	27.2	82.7
	Strongly agree	14	17.3	17.3	100.0
	Total	81	100.0	100.0	

Prompt payment: Did this motivate you to establish relationship with buyer?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	8	9.9	9.9	9.9

Somewhat agree	2	2.5	2.5	12.3
Agree	32	39.5	39.5	51.9
Strongly agree	39	48.1	48.1	100.0
Total	81	100.0	100.0	

Desire to provide sources of livelihood to outgrowers: Did this motivate you to establish relationship with buyer?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	4	4.9	4.9	4.9
	Somewhat agree	4	4.9	4.9	9.9
	Agree	39	48.1	48.1	58.0
	Strongly agree	33	40.7	40.7	98.8
	No response	1	1.2	1.2	100.0
	Total	81	100.0	100.0	

Appendix 1B

SET OF ECONOMIC, FINANCIAL, AND SOCIAL MOTIVATING FACTORS FOR BUYER FIRMS TO ENGAGE OBS

Assurance of high-quality products

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Somewhat agree	2	16.7	16.7	16.7
	Agree	5	41.7	41.7	58.3
	Strongly agree	5	41.7	41.7	100.0
	Total	12	100.0	100.0	

Consistency in supply of products

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Somewhat agree	1	8.3	8.3	8.3
	Agree	4	33.3	33.3	41.7
	Strongly agree	7	58.3	58.3	100.0
	Total	12	100.0	100.0	

Provision of employment opportunities for OBs and OGs

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	1	8.3	8.3	8.3
	Agree	2	16.7	16.7	25.0
	Strongly agree	9	75.0	75.0	100.0
	Total	12	100.0	100.0	

Profit from high quality products

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	3	25.0	25.0	25.0
	Strongly agree	9	75.0	75.0	100.0
	Total	12	100.0	100.0	

Guaranteed lowest purchase price

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	2	16.7	16.7	16.7
	Somewhat agree	5	41.7	41.7	58.3
	Agree	3	25.0	25.0	83.3
	Strongly agree	2	16.7	16.7	100.0
	Total	12	100.0	100.0	

Fixed basis lowest purchase price

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	2	16.7	16.7	16.7
	Disagree	1	8.3	8.3	25.0
	Somewhat agree	4	33.3	33.3	58.3
	Agree	3	25.0	25.0	83.3
	Strongly agree	2	16.7	16.7	100.0

	Total	12	100.0	100.0	
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To build trusted network of OBs

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Somewhat agree	2	16.7	16.7	16.7
	Agree	1	8.3	8.3	25.0
	Strongly agree	9	75.0	75.0	100.0
	Total	12	100.0	100.0	

To cut risks dealing directly with OGs

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Somewhat agree	3	25.0	25.0	25.0
	Agree	2	16.7	16.7	41.7
	Strongly agree	7	58.3	58.3	100.0
	Total	12	100.0	100.0	

To cut costs dealing directly with OGs

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Somewhat agree	4	33.3	33.3	33.3
	Agree	1	8.3	8.3	41.7
	Strongly agree	7	58.3	58.3	100.0
	Total	12	100.0	100.0	

Desire to provide sources of livelihood to OBs and trickle down to OGs

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Somewhat agree	1	8.3	8.3	8.3
	Agree	2	16.7	16.7	25.0
	Strongly agree	9	75.0	75.0	100.0
	Total	12	100.0	100.0	

Appendix 2

IDENTIFY ANY INCENTIVES OR MOTIVATION THAT ALLOWS ACTORS TO DELIBERATELY INCLUDE BUSINESSES OWNED BY FEMALES OR YOUTH, OR EMPLOY FEMALES OR YOUTH IN OUTGROWER SCHEMES.

Do you consciously involve women in your partnership with OGs?

	Engage Women OGs		Engage Young OGs	
	Frequency	Percent	Frequency	Percent
No			8	9.9
Yes	81	100.0	73	90.1
Total	81	100.0	81	100.0

If yes, what are some of the considerations you make for women's participation?

	Frequency	Valid Percent
No response	1	1.2
"I allow them to participate in decision-making process."	1	1.2
"I consider them to participate in every aspect of decision making and involvement."	1	1.2
"Some percentage is reserved for women OBs."	1	1.2
1. Supply of land preparation services and inputs on credit; 2. We buy from women first because they finds it difficult finding market for their produced; 3. Some youth are able to easy your transportation arrangements, so we tend to buy from them.	1	1.2
Assurances of input on credit basis and farm for them as well.	1	1.2
Availability of tractor service.	1	1.2
Because I like to help them.	1	1.2
Because they are more reliable.	1	1.2
Because women are more serious and trustworthy.	1	1.2
Being very loyal.	1	1.2
Being honest and transparent.	1	1.2
Building hope in their lives.	1	1.2
Consciously look for them.	1	1.2
Consider women if they are not able to pay.	1	1.2
Dedication and active towards work.	1	1.2
Easily access to farm inputs and ploughing services.	1	1.2
Easy to recover from fear, risk, hence demand less.	1	1.2
First plowing and threshing inputs on credit.	1	1.2
For them to raise income and also get produce for family livelihood.	1	1.2
Give equal opportunities.	1	1.2
Give them higher quota of support.	1	1.2

Giving support, they are given less prices than men, they are allowed to participate fully in decision making.	1	1.2
Hardworking and trustworthy.	1	1.2
Have no business to fund their farming activities.	1	1.2
Helping of women in farming example planting of seeds and reduced prices of some inputs.	1	1.2
I provide ploughing service to them on credit.	1	1.2
I sometimes provides services to them on credit.	1	1.2
Increase their participation.	1	1.2
Increase women participation.	1	1.2
It's easier to work with them because they have a higher sense of understanding so I tend to involve more.	1	1.2
Loyalty and also they lack finance.	1	1.2
Make inputs available anytime they need them.	1	1.2
Mode of payment and trustworthiness is encouraging.	1	1.2
More credit and repayments terms flexible.	1	1.2
More reliable.	1	1.2
More serious than men.	1	1.2
Ploughing free for them when they work on my field so they can also farm a portion for themselves.	1	1.2
Plow for them first.	1	1.2
Promote the participation of women in farming.	1	1.2
Prompt payment or early payment if work is done on credit basis.	1	1.2
Provide credit, training on post-harvest loss and good GAPs, village savings, help in selling their produce.	1	1.2
Ready services.	1	1.2
Reduce the repayment package on fertilizer supplied to women.	1	1.2
Reduced cost for them.	1	1.2
Reliability and trustworthy.	1	1.2
Responsibility toward their families and feel shy to owe.	1	1.2
Satisfied women first because of their commitment level.	1	1.2
Since most women farmers lack the capital to invest on their farms, I give them more input credit than men.	1	1.2
Since they are more hardworking I give them more credit.	1	1.2
Sometimes I subsidize them.	1	1.2
Support for their husband.	1	1.2
Take their views and suggestions into consideration.	1	1.2
The ladies are trustworthy.	1	1.2
They are basically very interested in sustaining farming to make a livelihood.	1	1.2
They are hard-working.	1	1.2
They are mainly the active workforce and always ready for support.	1	1.2
They are trustworthy.	1	1.2

They are usually loyal in terms of repayments.	1	1.2
They are very simple to do business with, and very effective in repayment.	1	1.2
They don't have businesses to give them money.	1	1.2
They lack finance.	1	1.2
They take small quantity and put in proper efforts than men, who come for larger quantities but are unable to deliver, so women are more reliable.	1	1.2
To encourage them to farm in order to reduce the level of poverty in our community.	1	1.2
To help them get income and also engage them in selling some of my products.	1	1.2
Women are far more hardworking and reliable.	1	1.2
Ways to make it easy for them to farm.	1	1.2
We tell them farming is important because of income and even go ahead to give them free weedicide.	1	1.2
When there are unwanted materials in the farm products.	1	1.2
Women are active when come to meetings, women pay debts.	1	1.2
Women are caretakers, and they easily apply new technology when taught.	1	1.2
Women are hardworking and tolerant to work with.	1	1.2
Women are more reliable.	1	1.2
Women are trust worthy and easy to do recovery. 2. Most are also vulnerable.	1	1.2
Women are truthful.	1	1.2
Women are understanding.	1	1.2
Women empowerment.	4	4.9
Women first in all that I do.	1	1.2
Total	81	100.0

If yes what are some of the considerations you make for youth participation?

	Frequency	Valid Percent
	8	9.9
"They also actively involved in decision making."	1	1.2
Active.	1	1.2
Actively involve them in decision making, too.	1	1.2
Advise them.	1	1.2
Availability of farm inputs in time.	1	1.2
Because I like to see the youth trying their best to make things work, hence I love to help them.	1	1.2
Create opportunities for existing youth and to encourage new ones to come on board.	1	1.2
Dedication to work.	1	1.2
Easily access to farm inputs and ploughing services.	1	1.2

Encourage them to work hard.	1	1.2
Energetic and hardworking.	1	1.2
Easy doing business, adoption, and have understanding.	1	1.2
Free training.	1	1.2
Give equal opportunities.	1	1.2
Grow up in the business.	1	1.2
Hardworking.	1	1.2
Hardworking and smartness.	1	1.2
I give them first hand chance.	1	1.2
I provide ploughing service to them on credit.	1	1.2
I training them on good agronomic practices.	1	1.2
I want to encourage the youth in agriculture.	1	1.2
I'm a little laid back with them because I want to encourage more of them.	1	1.2
Increase their livelihoods.	1	1.2
Input credit.	1	1.2
Keep them busy and employed to restrain them from social vices.	1	1.2
Loading of farm produce.	1	1.2
Make inputs available and affordable.	1	1.2
More input credit and terms of repayments flexible.	1	1.2
Provision of livelihood.	1	1.2
Repayment is flexible.	1	1.2
So that they can gain some source of income.	1	1.2
Some cannot afford to buy inputs. I support them and at the end I pay back and provide services training.	1	1.2
Subsidize.	1	1.2
Subsidize prices.	1	1.2
The youth are more energetic.	1	1.2
They bring new ideas that are warmly welcomed.	1	1.2
They are active.	1	1.2
They are energetic.	1	1.2
They are energetic so when they receive support, they can farm more acreage and repay afterwards.	1	1.2
They are given free training, and also allowed to participate fully in decision making.	1	1.2
They are hardworking	1	1.2
They are hardworking and can work a lot than the old. A lot of them too are students and need support for schooling.	1	1.2
They are more stronger and are the future of the community.	1	1.2
They are strong and can farm more to repay.	1	1.2
They are the active workforce or labor in the community.	1	1.2
They are usually hardworking, they help me do most of my work.	1	1.2
They are very dedicated and hardworking.	1	1.2

They are very reliable and dedicated.	1	1.2
They don't have any financial support.	1	1.2
They focused and determined in whatever activity they indulge.	1	1.2
They follow the terms and conditions of my business.	1	1.2
They lack finance.	1	1.2
They lack finance, but are energetic to cultivate more when they are supported.	1	1.2
They operate the machines and bag the produce.	1	1.2
Those interested in agriculture.	1	1.2
To aid in the speeding up of work and also find them jobs.	1	1.2
To educate them on the benefits of agriculture.	1	1.2
To encourage the youth into farming.	1	1.2
To encourage them into farming,	1	1.2
To encourage them to farm. Are the strongest in the community.	1	1.2
To encourage them to go into farming.	1	1.2
To generate income and also serve as a learning procedure as well as succession plan.	1	1.2
To help empower them.	1	1.2
To help them improve their lives.	1	1.2
To push them.	1	1.2
To retain them in the community.	1	1.2
Train and support them to develop love for farming by providing them with inputs.	1	1.2
Training.	1	1.2
Training on GAPs and post-harvest lost.	1	1.2
Trying to encourage the youth into agribusiness.	1	1.2
We make access to produce and prices easy to attain.	1	1.2
We want to encourage them to go into agricultural.	1	1.2
Youth development.	1	1.2
Total	81	100.0

If no youth, why?		
	Frequency	Valid Percent
No response	73	90.1
Because they fall back in repayment after supply.	1	1.2
I have not thought of it.	1	1.2
Less in the agricultural sector.	1	1.2
Most of the youth are not into farming.	1	1.2
Not considered.	1	1.2
Their views are always not concrete enough.	1	1.2
They are very lazy.	1	1.2

They do default in repayment terms and conditions.	1	1.2
Total	81	100.0
What is the motivation to work with women OGs?		
	Frequency	Valid Percent
No response	2	2.5
1. They are reliable when it comes to payment of credit facilities provided 2. When they are empowered they are able to take care of children and community better and effectively. 3. Where necessary, they are able to support the OBs to work effectively	1	1.2
Because I empathize with them and want to improve their finances.	1	1.2
Because they are honest and do not default on payment.	1	1.2
Because they are self-disciplined and reliable.	1	1.2
Being very reliable.	1	1.2
Cash or in-kind, and I pay them 5 cedis.	1	1.2
Do not default.	1	1.2
Easier to manage and they are trustworthy.	1	1.2
Easy to recover credit. Hardworking.	1	1.2
Hardworking.	1	1.2
Helping them improve their lives.	1	1.2
High repayment rate.	1	1.2
Honesty.	1	1.2
I want to help alleviate poverty levels among them.	1	1.2
In-kind basis.	1	1.2
Income generation.	1	1.2
Increase livelihood.	1	1.2
Increase productivity.	1	1.2
Increase profit.	1	1.2
Just to help them.	1	1.2
Loyal.	2	2.5
Loyalty.	3	3.7
No defaulters.	1	1.2
Prompt payment.	1	1.2
Prompt payments and assistance from them on my farm.	1	1.2
Prompt repayments.	1	1.2
Reduce payment by one bag.	1	1.2
Repayment and trustworthiness is better.	1	1.2
Respect, lack of capacity.	1	1.2
Seeing them work to support family or husband.	1	1.2
Subsidize	1	1.2

They attend meetings regularly.	1	1.2
The pay back more than the men.	1	1.2
The women are honest and always pay their debt.	1	1.2
The women have higher payment recovery than men.	1	1.2
Their mode of payment and trustworthiness is encouraging.	1	1.2
They always pay back on time.	1	1.2
They are to be trusted.	1	1.2
They are far more reliable.	1	1.2
They are hardworking and trustworthy.	1	1.2
They are loyal.	3	3.7
They are more reliable.	3	3.7
They are more trustworthy.	1	1.2
They are not lazy.	1	1.2
They are reliable.	1	1.2
They are trustworthy.	1	1.2
They are truthful.	1	1.2
They are very dedicated and flexible to work with.	1	1.2
They are very reliable.	1	1.2
They are very trustworthy in terms of repayment.	1	1.2
They come out for meeting any time they are called on and pay much respect to any support given them.	1	1.2
They discharge their duties with due diligence.	1	1.2
They do a good job more often than men.	1	1.2
They do not default in payment.	1	1.2
They don't default.	1	1.2
They have children and need support.	1	1.2
They make things easier and they are easy to be controlled, also loyalty.	1	1.2
They support families, they honor agreements more than men.	1	1.2
They understand things easily.	1	1.2
They're reliable and trustworthy.	1	1.2
Timely payments are being made by women.	1	1.2
To empower them.	1	1.2
To encouragement to farm.	1	1.2
To help them gain financial independence.	1	1.2
To promote gender equality.	1	1.2
Trustworthiness.	1	1.2
Trustworthiness.	1	1.2
Trustworthy.	1	1.2
Very faithful and truthful and adopt to new methods.	1	1.2
Very reliable and faithful.	1	1.2

Women are more reliable in repayments. They are most vulnerable in the society.	1	1.2
Women are often the major vulnerable in the society, hence the need to engage them.	1	1.2
Total	81	100.0

What is the motivation to work with young OGs?

	Frequency	Valid Percent
	2	2.5
1. They have the strength to work 2. They also provide some forms of support to their aging families.	1	1.2
Ability to withstand pressure.	1	1.2
Ability to work.	1	1.2
Adoption and understanding.	1	1.2
As a source of living.	1	1.2
As I said they are students and we need to support them to go to school. They need to work for it.	1	1.2
Because they are strong and have the energy and knowhow.	1	1.2
Bring new ideas, strong, and ready to work.	1	1.2
Cash and in-kind.	1	1.2
Developing their passion in agribusiness.	1	1.2
Encourage them to go into farming.	1	1.2
Energetic to work.	2	2.5
Get them employment.	1	1.2
Hardworking.	3	3.7
Help them be good people in the community.	1	1.2
Help them find sources of income.	1	1.2
Helping to reduce extreme poverty.	1	1.2
Help them improve their lives.	1	1.2
Honesty.	1	1.2
I always use myself to motivate them.	1	1.2
I feel it is good because they get income from their labor.	1	1.2
I used to get help from them in terms of farming.	1	1.2
Increase productivity.	1	1.2
Just to empower and help them.	1	1.2
Just willing to help them.	1	1.2
Loyal.	3	3.7
Mentor this youth to see agricultural as a business.	1	1.2
Most of the youth don't respect farming, so with this young OGs, I hope the farming would be profitable so more will join.	1	1.2
Most of them are loyal, too.	1	1.2

My motivation is pay in cash or in-kind.	1	1.2
No motivation.	2	2.5
Reciprocal assistance.	1	1.2
Smart and very determined.	1	1.2
Strong and energetic and have large farms.	1	1.2
Subsidize motivated.	1	1.2
They bring new ideas on board.	1	1.2
The have energy to cover more acreage within the season, and they are easily accessible when you need hands to work for you.	1	1.2
The men are more energetic to work and pay their differences.	1	1.2
The youth are serious.	1	1.2
Their activeness.	1	1.2
They are also reliable and active.	1	1.2
They are also very good in terms of repayment and very active and strong.	1	1.2
They are energetic and strong.	1	1.2
They are growing in numbers.	1	1.2
They are hardworking and proactive.	1	1.2
They are loyal.	1	1.2
They are stronger and encourages self-employment.	1	1.2
They are very active and productive.	1	1.2
They are very energetic.	1	1.2
They are very reliable and show commitment.	1	1.2
They are very reliable and strong.	1	1.2
They are very smart and loyal to their line of work.	1	1.2
They follow instructions and ready to do repayments.	1	1.2
They understand farming practice more than the aged.	1	1.2
They young and more active and strong.	1	1.2
They're also hardworking and time-abiding.	1	1.2
To aid them take up the business of farming to cater to their families.	1	1.2
To educate them to take farming as a business instead of going to undertake illegal mining.	1	1.2
To encourage them into agribusiness.	1	1.2
To encourage them to farm.	1	1.2
To encourage them to go into farming.	1	1.2
To help them cater for their education and their older ones.	1	1.2
To impact knowledge.	1	1.2
To kindle their interest in farming.	1	1.2
To motivate the youth in farming.	1	1.2
To reduce them migrating to Accra to look for job.	1	1.2
To take up farming as businesses, engage them with jobs, to reduce rate of social vices.	1	1.2

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To take up the jobs to continue life when they are no more.	1	1.2
To train them.	1	1.2
To use the rate of social vices.	1	1.2
Very strong.	1	1.2
Youth are the active workforce in the society.	1	1.2
Youth development.	1	1.2
Total	81	100.0

Appendix 3

RECOVERY RATES OF CREDIT ADVANCED TO OBS—2014 TO 2017

What is the recovery rate of credit you gave to your outgrowers in 2014?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid		11	13.6	13.6
	Between 50% and 70%	11	13.6	13.6
	Between 75% and 90%	32	39.5	39.5
	Greater than 90%	14	17.3	17.3
	Less than 50%	13	16.0	16.0
	Total	81	100.0	100.0

What is the recovery rate of credit you gave to your outgrowers in 2015?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid		14	17.3	17.3
	Between 50% and 70%	9	11.1	11.1
	Between 75% and 90%	29	35.8	35.8
	Greater than 90%	19	23.5	23.5
	Less than 50%	10	12.3	12.3
	Total	81	100.0	100.0

What is the recovery rate of credit you gave to your outgrowers in 2016?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid		7	8.6	8.6
	Between 50% and 70%	7	8.6	8.6
	Between 75% and 90%	34	42.0	42.0
	Greater than 90%	21	25.9	25.9
	Less than 50%	12	14.8	14.8
	Total	81	100.0	100.0

What is the recovery rate of credit you gave to your outgrowers in 2017?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid		4	4.9	4.9
	Between 50% and 70%	8	9.9	9.9
	Between 75% and 90%	28	34.6	34.6
	Greater than 90%	31	38.3	38.3
	Less than 50%	10	12.3	12.3
	Total	81	100.0	100.0

Appendix 4

OPPORTUNISTIC BEHAVIOR AND RESOLUTION MEASURES

What has been the effect of such behavior on the relationship with the buyer(s)?

	Frequency	Percent
No response	10	12.3
No	3	3.7
A bit sour.	1	1.2
Bad.	1	1.2
Breach of contract agreement.	1	1.2
Buyer has not exhibited any opportunistic behavior.	1	1.2
Cash and carry.	1	1.2
Delay in settling my employees in terms of their stipends.	1	1.2
Delayed payment sometime occurs.	1	1.2
Good.	1	1.2
Good business with them.	1	1.2
How to cost inputs supplied you to the number of bags to give them.	1	1.2
I also find it difficult to pay my creditors.	1	1.2
I always pay for the sacks and also the transportation fee.	1	1.2
I'm extra vigilant when dealing with them.	1	1.2
Is making work difficult.	1	1.2
It delays when to start farming because you may not have money to buy inputs.	1	1.2
It has enabled us to achieved target.	1	1.2
It makes buying system easy.	1	1.2
Lack of trust.	1	1.2
Lead to good relationship.	1	1.2
Loss of cash.	1	1.2
Low crop yield as a result of delayed payment.	1	1.2
N/A	11	13.6
Negatively.	1	1.2
Nil.	1	1.2
No.	1	1.2
No effect.	6	7.4
No such behavior.	1	1.2
None.	13	16.0
None, because they don't exhibit such behavior.	1	1.2
Nothing.	1	1.2
No	1	1.2
Reduce my profit margin.	1	1.2
Reduce profit margins.	1	1.2

Reduction in profits.	1	1.2
Running into losses.	1	1.2
Suspicious and careful.	1	1.2
There's no such behavior.	1	1.2
They express interest in doing business with me.	1	1.2
Verbal communication.	1	1.2
Very good, I package and they buy at a negotiated price.	1	1.2
Very understanding.	1	1.2
Total	81	100.0

Have you put in place any measures to minimize opportunistic behavior?

	Frequency	Percent
	4	4.9
No	49	60.5
Yes	28	34.6
Total	81	100.0

If yes please explain (measures to minimize opportunistic behavior)

	Frequency	Percent
	54	66.7
Being very selective in who to partner.	1	1.2
By voicing it out.	1	1.2
Contract signing.	1	1.2
Disagreeing with their price and possibly changing new buyers.	1	1.2
Explore new buyers.	1	1.2
Find another buyer.	1	1.2
Fixed prices of various produce.	1	1.2
I also do my calculations for us to come to agreed terms.	1	1.2
I considered the good yield of it.	1	1.2
I do avoid such individuals.	1	1.2
I don't open myself to entertain such behaviors.	1	1.2
I ensure they duly follow the agreement.	1	1.2
I outsource some of the product to be able to be in business.	1	1.2
I weigh the produce myself before I sell it to the buyer.	1	1.2
I will stop dealing with them.	1	1.2
Make sure contract prevent it.	1	1.2
Measuring scale.	1	1.2
No problem.	1	1.2
Talk to buyers about it.	1	1.2
They meet to discuss on mode the payment.	1	1.2

To ensure that there is communication and transparency in all dealings.	1	1.2
To ensure there is transparency in the process by third party involvement.	1	1.2
To make sure things to be for both parties.	1	1.2
To reduce the acreage, to minimize the cost.	1	1.2
Treating to stop dealing with them if it considers.	1	1.2
Written and bounding contracts.	1	1.2
Written and signed contracts.	1	1.2
Total	81	100.0

Do you have any arrangements for conflict resolution?

	Frequency	Percent
No	57	70.4
Yes	24	29.6
Total	81	100.0

If yes please explain (conflict resolution)

	Frequency	Percent
No response	28	34.6
"Sometimes negotiations. If not, we go to the chief to help resolve it after we have failed to resolve it by ourselves."	1	1.2
0	1	1.2
A third partner who served as a witness during the agreement.	1	1.2
ADVANCE helps.	1	1.2
ADVANCE helps in mediation processes.	1	1.2
ADVANCE will mediate.	1	1.2
By bringing in a third party as witness during supply.	1	1.2
Constant communication.	1	1.2
Cordially resolution first and if that fails, we go for legal regimes at court.	1	1.2
Delay of payment should be avoided.	1	1.2
Discussion and negotiations.	1	1.2
Don't have any arrangements.	1	1.2
Elders come in to assist.	1	1.2
Ensure contracts are documented and binding by law.	1	1.2
I try to mediate in any conflict situation that was likely to affect the relationship.	1	1.2
Leadership formation.	1	1.2
Mediation.	1	1.2
Mode of payment excuses.	1	1.2
N/A	1	1.2
N/A	1	1.2
N/A	6	7.4

Negotiations to resolve conflicts.	1	1.2
No.	5	6.2
No conflict resolution plans.	1	1.2
No idea.	1	1.2
No problem.	1	1.2
None.	9	11.1
Once there is written document, it serves as a guide for the operation of business.	1	1.2
Providing a contract agreement to do away conflict.	1	1.2
There has never been.	1	1.2
There is a committee in place to deal with that and it's a three member committee.	1	1.2
There is a platform that we send our concerns to for resolution. They call them and discuss with both of us for the solution to be made.	1	1.2
Things are clear so I don't think there will be conflict.	1	1.2
We meet leaders to solve it.	1	1.2
We solve our problems within the group.	1	1.2
Win-win situation.	1	1.2
Total	81	100.0

If no, why? (measures to minimize opportunistic behavior are not in place)

	Frequenc y	Percent
	38	46.9
"Because I haven't experienced any of such behaviors."	1	1.2
"My relationship with them is very strong and such behaviors has never and will never happen."	1	1.2
"We don't foresee those things happening."	1	1.2
0	2	2.5
Always obey others.	1	1.2
Because I don't anticipate any of such behavior in the future, so I don't see the need for that.	1	1.2
Because such has never happened, and we always make sure terms are met at all times.	1	1.2
Because we are very open and frank to each other.	1	1.2
Because we do understand one another.	1	1.2
Do not like too much paperwork.	1	1.2
Haven't thought of it.	1	1.2
He deals with several buyers and can easily switch in such cases.	1	1.2
I and my buyer respect the terms in our contract so there won't be conflict.	1	1.2
I don't foresee that coming.	1	1.2
I don't want to lose my buyers to other competitors.	1	1.2

I don't foresee that.	1	1.2
I don't foresee that coming.	1	1.2
I don't want to lose them as business partners.	1	1.2
I don't think there will conflict because we all stick to our part of the contract.	1	1.2
I have not considered it yet.	1	1.2
I haven't thought of it yet.	1	1.2
I switch buyers once I notice there could be some opportunistic tendencies.	1	1.2
Mutual respect.	1	1.2
My mind is not there.	1	1.2
N/A	2	2.5
N/A	2	2.5
No.	1	1.2
No need because of perfect relationship.	1	1.2
No reason.	1	1.2
None.	2	2.5
Not considered.	2	2.5
Nothing.	1	1.2
So as not to be cheated.	1	1.2
Still growing.	1	1.2
They have been loyal.	1	1.2
Those behavior have not been shown to me.	1	1.2
We respect the contract and stick to it, so I don't think there will be conflict.	1	1.2
Yet to consider that.	1	1.2
Total	81	100.0

Appendix 5

CHALLENGES FACED BY OBS IN BUSINESS RELATIONS WITH BUYER FIRMS

What internal challenges did you face with buyers as related to achieving the success of the relationship?

	Frequency	Percent
	2	2.5
Because they pay late, it also delay and affect my plans for the year, especially during the dry season.	1	1.2
Buyers tended to question the quality of produce.	1	1.2
Changes in varieties without notifying them on time.	1	1.2
Climate challenges.	1	1.2
Complaining quality of my produce.	1	1.2
Complaints of standards, in terms of moisture content and quality of grains.	1	1.2
Conflict of interest.	1	1.2
Delay in payment.	3	3.7
Delay in recovery of payment.	1	1.2
Delay on arrival to pick up products, and it sometimes leads some of the bags being spoil.	1	1.2
Delay payments after goods are supplied.	1	1.2
Financial challenges.	1	1.2
Getting buyers that gives prompt payment always.	1	1.2
Grading of produce by my buyer to determine price, which is done by them, which I think they will do so in their favor of them.	1	1.2
High cost of input supplied due to the large interest rate they charge.	1	1.2
High cost of input supplied due to the large interest rate they charge.	1	1.2
High interest rate.	1	1.2
Insufficient income levels.	1	1.2
Lack of preferred varieties.	1	1.2
Late delivery of input credit.	1	1.2
Low purchase price.	1	1.2
N/A	1	1.2
N/A	2	2.5
Nil.	2	2.5
No.	1	1.2
No challenge.	5	6.2
No challenge so far with my constant and loyal buyer.	1	1.2
No internal challenge.	1	1.2
No internal challenges.	2	2.5
No problem.	1	1.2
No worries.	1	1.2

None.	12	14.8
Not able to meet standards of buyers.	1	1.2
Poor harvest.	1	1.2
Poor inputs supply.	1	1.2
Poor pricing sometimes and inadequate warehouse space.	1	1.2
Price.	1	1.2
Price paid by buyers.	1	1.2
Pricing.	3	3.7
Produce does not meet standards of buyers.	1	1.2
Sometimes delay payments.	1	1.2
Sometimes delay in payment.	1	1.2
Sometimes delay in payment of debts.	1	1.2
Sometimes grains quality and price setting.	1	1.2
Sometimes when supplied, the buyers they tell you there are foreign materials or that the kg is not up.	1	1.2
Storage.	1	1.2
Supply of poor seeds.	1	1.2
The payment sometimes delay.	1	1.2
They sometimes delay the supply of input or fail to deliver the input.	1	1.2
There wasn't any internal challenge.	1	1.2
Timely delivery.	1	1.2
Transport and accommodation.	1	1.2
Transportation.	1	1.2
Transportation and storage.	1	1.2
Transportation cost.	1	1.2
Transportation cost.	1	1.2
When you are demanding something they can't afford.	1	1.2
Total	81	100.0

What external challenges did you face with buyers as related to achieving the success of the relationship?

	Frequency	Percent
	4	4.9
"Not receiving the information quick about insects like FAW so that I can share with them before destruction."	1	1.2
Bad roads.	2	2.5
Buyer organizations trying to determine prices of produce.	1	1.2
Compliant on the quality grains, eg. stones.	1	1.2
Delayed of payment.	1	1.2
Delayed payment.	1	1.2
Delays in payment.	1	1.2

Drivers sometimes short change us.	1	1.2
Financial problems.	1	1.2
Government policies.	1	1.2
Increase in fuel prices.	1	1.2
It led to issues with my OGs.	1	1.2
Lack of transportation to deliver goods to buyers.	1	1.2
Late delivery of the inputs.	1	1.2
Late delivery of the inputs.	1	1.2
Late supply of inputs.	1	1.2
Limited produce.	1	1.2
N/A	2	2.5
Nil.	4	4.9
No.	1	1.2
No challenge.	3	3.7
No challenges.	1	1.2
No external challenges.	4	4.9
No problem.	1	1.2
None.	17	21.0
Other competitors.	1	1.2
Poor roads and difficulties in access to finance.	1	1.2
Price.	1	1.2
Price disparities.	1	1.2
Pricing at times.	1	1.2
Problems with higher market prices.	1	1.2
Rainfall pattern.	1	1.2
Regular meetings and current price rates.	1	1.2
Rough roads at times delay supply.	1	1.2
The buyers and external forces decide prices of produce.	1	1.2
The increment in fuel prices.	1	1.2
Transport.	1	1.2
Transport challenges.	1	1.2
Transport to cart produce in communities and sometimes cost of transport.	1	1.2
Transportation.	2	2.5
Transportation, price of bags.	1	1.2
Transportation challenges.	1	1.2
Transportation cost always shoot higher.	1	1.2
Transporting to the buyer.	1	1.2
Trust.	1	1.2
Unpredictable weather patterns.	1	1.2
Unstable market prices.	1	1.2

We usually have conflict about who to take care of the transportation.	1	1.2
Weather changes.	1	1.2
Wrong supplies for third parties contracted by buyers.	1	1.2
Total	81	100.0

What are the critical challenges that need to be addressed immediately in order not to adversely affect the relationship?

	Frequency	Percent
	3	3.7
"To be able to get enough improved seeds to cater for all my buyers."	1	1.2
1. Meet our demand in terms of quantities requested 2. Payment of good supplied should be facilitated 3. They supply are with types and kind of inputs we demand.	1	1.2
Always coming at right time, or available at all times.	1	1.2
Assist buyers with financial linkage.	1	1.2
Both parties should respect the terms and conditions.	1	1.2
Business relationship and contract management.	1	1.2
By working within the needed timelines.	1	1.2
Continue to remind the buyers of the contract so that they won't default.	1	1.2
Contracts with buyers should be written and signed to be binding.	1	1.2
Delay of payment may result to critical challenges.	1	1.2
Develop a level ground for all parties involved.	1	1.2
Effective communication.	1	1.2
Finance.	1	1.2
Financial issues.	1	1.2
Full repayment.	1	1.2
High interest rate.	1	1.2
I always try to meet the buyer's requirements and orders.	1	1.2
Improve storage.	1	1.2
Increase staff capacity.	1	1.2
Is about ADVANCE Ghana winding up is.	1	1.2
Lack of transportation, improved seeds, or need variety.	1	1.2
Late delivery of inputs.	1	1.2
N/A	1	1.2
N/A	2	2.5
No	1	1.2
No challenge.	3	3.7
No challenge for now.	1	1.2
No challenges.	1	1.2
No critical challenges.	1	1.2
None.	13	16.0

Opportunistic behavior by buyers.	1	1.2
Price.	2	2.5
Prices should be stable.	1	1.2
Prompt payment.	3	3.7
Prompt payment and quick access to finance.	1	1.2
Prompt payment and responses.	1	1.2
Prompt payment and very good communication.	1	1.2
Quality of inputs should not be compromised at all.	1	1.2
Quality of the produce should be considered at times.	1	1.2
Quick payment.	1	1.2
Rainfall pattern and the need for a tractor and a sheller.	1	1.2
Reconnect with buyers.	1	1.2
Recordkeeping on profit and losses is lackadaisical.	1	1.2
Regular interactions will help in ironing out the problems.	1	1.2
Road network.	1	1.2
Stay truthful and committed to agreements.	1	1.2
Strict adherence to contract.	1	1.2
The means to transport the produce is always difficult.	1	1.2
The roads should be fixed to enable us to transport our goods to locations they are in demand.	1	1.2
The time of supplying the inputs.	1	1.2
They should always supply input on time.	1	1.2
Third party should grade my product but not my buyer so that there can be transparency.	1	1.2
Timely payment.	1	1.2
Timely intervention on pricing.	1	1.2
Transportation.	1	1.2
Transportation cost. Weighing scale.	1	1.2
Transporting the produce to the buyer.	1	1.2
Trust issues.	1	1.2
Use of mobile money system.	1	1.2
We need to address who will foot the transportation.	1	1.2
Total	81	100.0

Appendix 6

INSURANCE PRODUCTS AND PUBLIC POLICIES THAT AFFECT OPERATIONS OF OBS AND BUYERS

Are there insurance products to mitigate risks that may arise in your relationship with the buyer?

	Frequency	Percent
	2	2.5
Ghana Crop Insurance	1	1.2
N/A	1	1.2
N/A	2	2.5
No	38	46.9
None	3	3.7
None at the moment	1	1.2
Yes	30	37.0
Yes there is insurance coverage	1	1.2
Yes, Crop insurance	1	1.2
Yes, we paid 50 cedis for 1 acre	1	1.2
Total	81	100.0

Are there any information exchange platforms to reduce transaction costs and increase frequency of feedback for you and buyers?

	Frequency	Percent
	3	3.7
Ghana Commodity Exchange where we meet to deliberate on price	1	1.2
N/A	1	1.2
No	19	23.5
No information	1	1.2
None	1	1.2
Phone conversation	1	1.2
Text message and phone calls	1	1.2
Through phone calls	1	1.2
WhatsApp	1	1.2
Yes	1	1.2
Yes	48	59.3
Yes, social media like WhatsApp group page	1	1.2
Yes, there is a platform call network for that	1	1.2
Total	81	100.0

Are there any public policies that insulate you from any natural risks, thereby protecting you from risk of crop failure?

	Frequency	Percent
	2	2.5
"I don't know about any."	1	1.2
"I don't know."	1	1.2
Am not aware of any policy.	1	1.2
Crop insurance.	1	1.2
Ghana Crop Insurance Policy.	1	1.2
No.	38	46.9
No policies.	1	1.2
None.	6	7.4
Not that I know.	1	1.2
Yes.	26	32.1
Yes, NADMO.	1	1.2
Yes. Fall Armyworm chemicals and education.	1	1.2
Total	81	100.0

Appendix 7

REPORTED RECOVERY RATES OF INPUT CREDIT ADVANCED TO OGS

What is the recovery rate of credit you give to your outgrowers in 2014?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid		11	13.6	13.6
	Between 50-74	11	13.6	27.2
	Between 75-90	32	39.5	66.7
	Greater than 90	14	17.3	84.0
	Less than 50	13	16.0	100.0
	Total	81	100.0	100.0

What is the recovery rate of credit you give to your outgrowers in 2015?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid		14	17.3	17.3
	Between 50-74	9	11.1	28.4
	Between 75-90	29	35.8	64.2
	Greater than 90	19	23.5	87.7
	Less than 50	10	12.3	100.0
	Total	81	100.0	100.0

What is the recovery rate of credit you give to your outgrowers in 2016?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid		7	8.6	8.6
	Between 50-74	7	8.6	17.3
	Between 75-90	34	42.0	59.3
	Greater than 90	21	25.9	85.2
	Less than 50	12	14.8	100.0
	Total	81	100.0	100.0

What is the recovery rate of credit you give to your outgrowers in 2017?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid		4	4.9	4.9
	Between 50-74	8	9.9	14.8
	Between 75-90	28	34.6	49.4
	Greater than 90	31	38.3	87.7
	Less than 50	10	12.3	100.0
	Total	81	100.0	100.0