# AGLC SEMI-ANNUAL REPORT
# PERIOD: APRIL 1, 2017 TO SEPTEMBER 30, 2017

**FEED THE FUTURE AFRICA GREAT LAKES REGION COFFEE SUPPORT PROGRAM**
**AWARD NUMBER: AID-OAA-LA-15-00006**

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## 1. Executive Summary: Key Accomplishments and Challenges

During the 6-month reporting period April 1 to September 30, 2017 the AGLC project succeeded in achieving nearly all of its outputs and deliverables. All key informant interviews and focus group discussions with farmers and processors were completed, compiled and analyzed. The Year 2 planned analysis of Midline data was completed and several major reports were written covering key topics, including, farmer investments & sustainability, access to inputs, zoning policy, and the impact of cooperative membership on coffee productivity and adoption of best practices. Preparation for the Endline household survey was completed and fieldwork planned. Based on the larger special reports and a series of background briefs, three stakeholder roundtables were held to during the reporting period and the dialog on key targeted issues was advanced by the project.

## 2. Program Description and Introduction

The long-term viability of the coffee sector in the Africa Great Lakes region, the main source of cash income for millions of smallholder farmers and families in the region, is threatened first by increasingly prevalent antestia bug infestation (and associated potato taste defect—PTD), and second, by coffee yields that are among the world's very lowest. AGLC is a three-year, USAID Feed the Future initiative led by Michigan State University that meets these combined challenges through an integrated program of applied research, farmer capacity building and policy engagement. The solution requires a public-private sector coordinated response across the entire value chain, including producers, washing stations, dry mills, exporters and the government agencies that support the sector's growth. The goals of the program are to significantly reduce the effects of antestia/PTD and to raise farm-level productivity, two changes that will in turn improve smallholder farmer incomes and help to sustain the Africa Great Lakes region's reputation for producing among the highest quality coffees in the world. AGLC is designed to meet these challenges through a set of core program components, identified as the following:

1. *Applied policy, household, and agronomic (field-level) research* to serve as the basis for smallholder capacity building and policy engagement aimed at reducing potato taste defect and low coffee productivity and profitability in the Africa Great Lakes Region.
2. *Capacity building/farmer training & outreach* with project partners in the Africa Great Lakes Region to train coffee producers and processors on potato taste/antestia control and other practices that will increase productivity and farmer incomes.
3. *Policy engagement* to help create an enabling institutional environment to debate, formulate and adopt policies that will motivate producers and other actors in the coffee value chain to invest their labor, land and capital in ways that will increase smallholder farmer incomes.

The AGLC initiative fills important gaps in our knowledge base on controlling PTD, improving coffee farm management practices and creating a policy environment that is fully supportive of farmer and other stakeholder investment in the sector.

## 3. Activity Implementation Progress

This section reports on the various activities of the project in all three of its major components: applied research, capacity building and policy engagement. It closely follows the Year 2 Work Plan, summarizing the implementation status of main activities planned for the second half of project's second and final year. Special attention is given to reporting on challenges faced during the reporting period. Annex 1 provides a quick reference on the activity updates provided in this section, along with an estimate of the "percentage completed" for each activity. The section concludes with an update on the M&E plan and how AGLC has progressed against the seven core project indicators.

## 3.1. Implementation Status

Through the April to September 2017 reporting period implementation of the AGLC project showed good progress and met nearly all of its milestones and outputs. There were some delays in two of the program's component areas, particularly in Burundi where project activities have been curtailed due to the ongoing political tensions. Summarized below are the main steps taken to date in the activities scheduled for implementation during the project's fourth six month reporting period.

### 3.1.1. Applied Policy, Household, and Agronomic (Field-Level) Research

During the reporting period the applied research component received more attention than others as its primary goal is to provide an objective, empirical basis for both the capacity building and policy engagement activities of the project. It is designed to inform coffee sector stakeholders in Rwanda, Burundi and elsewhere in the region concerning the most effective practices for controlling antestia/PTD and for establishing a policy environment that will provide the necessary incentives for coffee producers to invest their labor, land and cash resources in these practices.

During this April to September period, AGLC placed a priority on the analysis of the Midline household survey and the continued data collection from the experimental fields. Progress made in these two domains are summarized below. Preparations were also made during the period for the Endline household survey, as discussed in the Upcoming Events/Activities section of this report (Section 5).

**Midline Household Survey**
During the first reporting period of Year 2 the AGLC team conducted a Midline survey of 512 coffee producing households in the major coffee growing districts in Rwanda and Burundi. The midline household survey was fielded in December 2016 and January 2017 and it consisted of a random, 50% subsample of households from the baseline sample frame in each CWS. Thus, there were 32 households selected from each of the 16 CWS listings for a total of 512 households in each country. Data collected in the Midline survey include information on: zoning policy, farmer investments, opportunity for quality-based pricing, gender and income, coffee and climate change, and food security.

The second six-month period of Year 2 was focused mainly on the analysis and presentation of data from the Midline survey in Rwanda and Burundi. Several research reports were written on priority topics addressed by the project and of priority interest to the stakeholders. The research reports produced during this reporting period and their principal findings are summarized below.

1. "Stakeholder Perceptions on Geographic Zoning in Rwanda's Coffee Sector and Opportunities for Policy Adjustment"

- Nearly ½ of farmers surveyed do not know what the zoning policy is, or whether it applies to them.
- Farmers in our sample feel negatively toward zoning, believing that it does not raise coffee cherry prices, and that it largely benefits coffee washing stations (CWSs) rather than farmers.
- However, farmers believe that zoning reduced the number of traders and increased the volume of cherry going to CWSs—goals of the policy.
- Other stakeholders note that zoning has harmed cooperative and privately-owned CWSs by splitting cooperatives and removing certified farmers from the cooperative/CWS that invested in certification.
- Implementation of zoning by local "coffee task forces" has varied by District, and stakeholders worry that design and implementation of zones has at times been executed unfairly.

2. "Pricing Coffee Cherry to Incentivize Farmers and Improve Quality"

   Given the higher prices paid for specialty coffee, the growing demand for fully-washed Arabica, and Rwanda's own comparative advantage, the country is shifting the focus of its coffee industry away from low-priced, commodity grade coffees. Unfortunately, some enduring structures and policies are not designed to maximize Rwanda's potential for quality coffee—but there is room to develop new, beneficial policies. NAEB annually sets a cherry price in consultation with key coffee sector stakeholders, some of whom are heavily invested in trading lower grades of coffee. Buyers of low-grade coffee have few, if any, quality requirements. Their need for low-cost cherry is found to drag down the minimum cherry floor price from what it could be if it were set to truly incentivize farmers to produce high-quality cherry for the specialty coffee market. Therefore, policies to allow and promote new ways to price cherry, allowing separate prices for low- and high-grade coffees, should be given priority consideration.

**Other AGLC research results made publicly available on the web**

In addition to the research reports described above, AGLC contributed an article titled, "From the Other Great Lakes: Around Rwanda's Coffee" to news websites for MSU and the Feed-the-Future program. Feed the Future "Agrilinks" featured the story in an on-line newsletter and blog on April 20, 2017. Then the MSU AgBioResearch group's blog, Food@MSU, also published the story in July 2017. The article gave the context for the project, summarizing the central importance of coffee to Rwanda's economy overall, and describing the paradox that initiated the project. Rwanda has been building its infrastructure to meet the specialty coffee market's demands, but national coffee production has been on an overall decline during the past 15-20 years. The Feed the Future Innovation Lab for Food Security Policy (FSP) research team is credited with uncovering the fact that subpar compensation for farmers, 24 percent lower than

neighboring countries, is the reason for the long-term decline. Especially large holder growers, who can more easily shift into other crops and land uses, have contributed to Rwanda's coffee declines. The evidence from the AGLC project is noted as the catalyst for changes in the policy environment and improvement in the condition of coffee growers.

**Applied Experimental Fields Research**

The applied research on experimental fields is designed to empirically inform coffee sector stakeholders in Rwanda and Burundi concerning the most effective practices for controlling antestia/PTD and for reducing low and fluctuating coffee production. Our approach is to build on current knowledge to isolate the principal causes of the combined problems of antestia/PTD and low coffee productivity/cyclicity and identify the most effective measures for reversing their detrimental effects.

During this reporting period teams in both countries continued applying the test treatments to the experimental fields, and collecting data on antestia and tree parameters. In July 2017 Aniseh Bro from MSU traveled to Rwanda to meet with the implementing partners from Rwanda and Burundi to assist with the preparation of the data files from the experimental fields for future analysis. A summary of steps taken and observations made during this period are listed below.

*In Rwanda:*

The analysis of soil samples collected during Year 1 was completed and results were used to determine amounts of lime and NPK to apply in each field. Both lime and NPK fertilizer were distributed in June 2017 to each of the sampled coffee washing stations for four fields, and will be applied during the rainy season in October 2017. Thereafter data on growth parameters, yield and antestia counts will be recorded.

The scouting of antestia bugs started in June and July in all plots, soon after the harvest. The third scouting activity will be completed in October, prior to the application of pesticide treatments. The number of antestia bugs is not uniform in all plots from a single field, indicating aggregation behavior. There is also variation among fields of the same age. Some fields have very low populations, such as in the case in four fields around the Bwishaza CWS in the Rutsiro District. There were more bugs in June than in July, an indication that if treatment can be applied early enough, the population may be highly reduced. Some fields are clean, while others are highly infested. Such variability needs further analysis to identify factors leading to such variation for fields of the same age in the same locality. An issue that has been identified is that the clean fields are treated in the same manner as highly infested fields. The standard blanket recommendation increases the cost of production unnecessarily. Future detailed analysis of individual fields will be required to identify great variability between fields in the same location and different sites.

The next steps, beginning in October 2017 are listed below:

- Fertilizer and lime application
- Scouting of antestia bugs
- Pesticide treatments application
- Counting coffee branches with flowers/fruits
- Continue with capacity building

*In Burundi:*
In Burundi, the following data have been collected during this reporting period:

- Farm characteristics & treatments
- Plant growth parameters
- Counting of Antestia and other insects
- Yield data
- Coffee cupping data

The analysis of the data available and the direct analysis on the ground show that the application of the GAPs during the 2 years has changed the appearance of the coffee trees as well as the productivity.

The main challenge has been working with fields already maintained by coffee growers, as they do not always follow the instructions, sometimes applying their own preferred practices in the same fields. However, we have managed to convince them not to deviate from the recommended practices on the experimental fields.

Initial findings from Ngozi and Kayanza suggest that Confidor is a more efficient pesticide with higher knockout rates than Pyrethrum+Confidor, IPM, and Pyrethrum.

Students from the University of Ngozi have been using these data for their thesis research. Topics covered in these student research efforts include: determinants of PTD, profitability of technological package used in experimentation, efficiency of pesticides used in treatment, ecology of Antestia bugs, among others.

### 3.1.2. Policy Engagement

The principal policy engagement activities implemented during the second half of Year 2 include: 1) holding a series of three policy roundtable meetings with stakeholders to present data and discuss solutions, 2) preparation of policy background and research briefs and associated PowerPoint presentations, and 3) conducting a series of focus group discussions with farmer groups and other key stakeholders. Implementation of each of these activities is summarized below.

**Policy Roundtables**

In June 2017, representatives of the African Great Lakes Region Coffee Support Program (AGLC) from Michigan State University, Institute for Policy Analysis and Research-Rwanda, University of Rwanda, and the Global Knowledge Initiative held a series of three policy advocacy roundtable discussions in Kigali, Rwanda. These discussions built on the quantitative and qualitative research conducted by AGLC team members, and brought together stakeholders from across the Rwandan specialty coffee sector including policymakers, regulators, private sector representatives, cooperative managers, and others.

Via these roundtables, coffee sector decision-makers were engaged in evidence-based discussions about current regulations and potential future options to address high stakes issues. Roundtables enable AGLC to disseminate research findings that help to guide policy and industry activities. They also give critical local context to the data and help researchers better understand the implications of the research results. The discussions revolved around policy issues observed through collected baseline and midline data and key informant interviews. The topics discussed in these roundtables were: (1) *Ensuring Access to Improved Inputs in Rwanda's Coffee Sector;* (2) on *Challenges and Opportunities for Women in Rwanda's Coffee Sector*; and (3) *Designing Mechanism to Link Coffee Price and Quality in Rwanda's Coffee Sector.*

**Roundtable 1: Policy Advocacy Roundtable on Ensuring Access to Improved Inputs in Rwanda's Coffee Sector**

The effective use of fertilizer and pesticide inputs is an essential step in improving both quality and productivity across the coffee sector in Rwanda. As such, this policy advocacy roundtable focused on ensuring access to improved inputs. With regard to this challenge, the quality of Rwandan coffee is greatly affected by the "Potato Taste Defect" (PTD), which is linked to damage caused by the antestia bug. Access to and affordability of inputs, as well as inconsistent and incorrect application, present major barriers to coffee quality and productivity. The AGLC team presented findings from the baseline and midline survey regarding these issues of input use and availability. The team highlighted the overarching challenge in this domain, which is the adoption of a fair and effective system for ensuring that farmers have an adequate supply of and knowledge regarding pesticides and fertilizers.

This roundtable discussion focused on top challenges and potential solutions related to ensuring access to and use of inputs among coffee farmers. Participants identified key challenges regarding insufficient farmer knowledge of market information and best practices; a lack of incentive for farmers to invest in coffee due to low coffee prices; inaccurate tree census data; and limited government investment in the coffee sector. Possible solutions presented were: (1) increased export fees on coffee could allow the Rwandan government to purchase more inputs for farmers; (2) the Rwandan government could subsidize the purchase of inputs; (3) coffee washing stations (CWS) could implement a premium-based system, providing farmers with more money to purchase inputs; (4) improved extension services designed to strengthen the

relationship between farmers and CWS could help to improve information sharing throughout the value chain. The AGLC team is currently drafting a policy brief to further examine challenges and opportunities surrounding inputs purchased and distributed by the Coffee Exporters and Processors Association of Rwanda (CEPAR), under the supervision of the National Agricultural Development Export Board (NAEB).

**Roundtable 2: Policy Advocacy Roundtable on Challenges and Opportunities for Women in Rwanda's Coffee Sector**

Women working in Rwanda's coffee sector face many of the same issues as men working in the sector; however, women also face a unique set of additional challenges. The AGLC team presented data highlighting the fact that female heads of households tend to be widowed, much older than their male counterparts, and part of a smaller household. To overcome these challenges, women coffee farmers typically hire outside labor to perform intensive activities such as pruning, stumping, and fertilizer application, limiting their net income. Coffee farming requires access to resources that many women lack, including land, money, and time. This unequal access limits women's ability to invest in their coffee. Given these challenges, the AGLC team decided to include a gender-focused roundtable to gain further insight.

Through a robust conversation, roundtable participants identified over 20 key challenges women coffee farmers face. Participants voted on those challenges they considered most important in terms of improving women's livelihoods and improving coffee productivity. The three top-ranked challenges from highest to lowest importance are as follows: (1) the lack of access to or control of household resources limits women's ability to invest in their coffee; (2) the need for inclusion of young people, especially young women, in coffee to help address the issue of aging coffee farmers; and (3) the need for trainings designed for *both* men and women, to ensure men are on board with implementation of best practices. The AGLC team will continue to build from these findings, incorporating these challenges into future engagements and policy recommendations.

**Roundtable 3: Policy Advocacy Roundtable on Designing Mechanisms to Link Coffee Price and Quality in Rwanda's Coffee Sector**

Rwanda has an exceptional environment for growing specialty Arabica coffee; unfortunately, some structures and policies are not designed to maximize Rwanda's potential for quality coffee. The high incidence of "Potato Taste Defect" (PTD) also plays a role in Rwanda's potential, by driving buyers away from the region, lowering demand, and therefore lowering prices. The AGLC team presented these challenges at the roundtable to spark discussion. First, unclear metrics on the quality of specialty coffee greatly affects the amount produced. Second, coffee price inconsistencies reduce incentives to produce high-quality coffee. Lastly, coffee washing stations (CWS) have limited experience with quality control and supplier education processes in the coffee receiving area; thus, quality control measures might hurt CWS profits. The team posited

that a more cohesive program of policies might effectively reward and encourage production of high-quality coffee. Thus, the team gathered key coffee stakeholders to discuss possible mechanisms to link coffee price and quality in Rwanda.

Through the roundtable discussion, participants converged upon three potential solutions to the challenges surrounding connecting coffee price to coffee quality. First, farmers could be compensated for high-quality coffee at an established, fair, and stable floor price. Meanwhile, "floaters", unripe, and other low-quality coffee cherry could be sold at a lower price set by the National Agricultural Development Export Board (NAEB) or at a free market negotiated price. Second, the Rwandan government could implement a policy to encourage coffee washing stations (CWS) to give second payments (i.e., payments made later in the season after their coffee has been sold at market) to "reward" those farmers with high-quality cherry. Finally, site collectors, who bring farmers' coffee in from the field, could be payed based on the quality of coffee brought in, thus providing an incentive for the site collectors to collect quality coffee. Based on these insights discussed at the roundtable, the AGLC team developed a policy brief outlining policy modifications to resolve the challenge of connecting coffee price to coffee quality, which it presented to NAEB for review and consideration.

**Policy Background Briefs**

Three policy background briefs were written to provide roundtable participants a set of leading policy questions and findings from the AGLC applied research. The background briefs prepared and distributed are as follows:

- "Ensuring Improvements to Input Delivery and Antestia Control"
- "Challenges and Opportunities for Women in Rwandan Coffee Sector"
- "Designing Mechanisms that Connect Coffee Price to Quality"

**Policy Research Briefs**

Two research briefs were written to include key insights from the roundtable discussions in conjunction with results from the analysis from the Midline household survey data. These are:

- "Stakeholder Perceptions on Geographic Zoning in Rwanda's Coffee Sector and Opportunities for Policy Adjustment"
- "Pricing Coffee Cherry to Incentivize Farmers and Improve Quality"

**Focused Meetings with Key Stakeholders in Coffee Sector**

Several meetings were held between AGLC senior staff and high level leaders in the agricultural sector to share project research findings and to discuss policy options and future strategy. Several of these meetings were particularly relevant to the policy engagement component of the project.

- Rwanda Trading Company (Clay Parker, Managing Director). Meeting held June 12, 2017 to discuss AGLC research results and implications for RTC and other large exporters in Rwanda.
- Sucafina (David Behrends, Managing Partner & Head of Trading). Meeting on May 30, via Skype to Geneva, Switzerland. Meeting to discuss AGLC research results and implications for Sucafina and other large exporters in Rwanda.
- NAEB (Eric Rugannintwali, Quality Assurance & Regulatory Division Manager). Meeting held in Seattle at Specialty Coffee Association 2017 Conference to discuss AGLC results and pricing for coffee and tea in Rwanda.
- San Francisco Bay Coffee (Mario Serracin, Agronomist). Meetings were held with the AGLC team in Kigali June, 2017 to discuss research results and implications for pricing and improved farmer incentives in Rwanda.
- AgroPy (Emmy Nyirigira, General Manager, and Cadeau Grace Mukundiyabo, Service Manager). Meeting held June 12, 2017 to discuss AGLC research results on inputs use and continued partnership with AgroPy in support of research.
- Starbucks (Julianne Kayonga). Meetings and conversations in May and June, 2017 to discuss potential future project support from Starbucks. A concept note and budget were developed and submitted to Starbucks in June, 2017.

**Focus Group Discussions**

In August 2017, the AGLC project held 12 focus groups discussions (FGDs) with coffee farmers across Rwanda. Using a focus group format designed by MSU, the Global Knowledge Initiative (GKI), and IPAR, IPAR staff held focus groups in the Kirehe, Rutsiro, Huye, and Gakenke districts of Rwanda. The purpose of these focus groups was to gain insight from farmers on their experiences, challenges, and motivations, and relate these findings to quantitative and qualitative data gathered by the project.

The FGDs were conducted with three different farmer groups in each district, in order to understand farmer experiences across all target regions. As shown in Table 1, focus groups targeted, in separate meetings: cooperative members (mixed gender), non-cooperative members (mixed gender), and women's groups. A total of 85 farmers contributed their perspectives through these focus groups.

| District | Cooperative | Non-Cooperative | Women's Group | Total |
|---|---|---|---|---|
| Gakenke | 7 Farmers | 7 Farmers | 7 Farmers | 21 Farmers |
| Huye | 7 Farmers | 7 Farmers | 8 Farmers | 22 Farmers |
| Kirehe | 7 Farmers | 7 Farmers | 7 Farmers | 21 Farmers |
| Rutsiro | 7 Farmers | 7 Farmers | 7 Farmers | 21 Farmers |
| Total | 28 Farmers | 28 Farmers | 29 Farmers | 85 Farmers |

Though questions varied depending on the group (e.g., women's groups were asked specific questions about gender and coffee), questions focused on: (1) farmer Investment and sustainability; (2) coffee zoning; (3) inputs availability and use; (4) cherry price differentiation by quality; (5) gender in coffee; and (6) benefits and drawbacks of cooperative membership. Some of the findings from the focus group discussions with farmers and CWS managers are highlighted below.

Insights gained from these focus group discussions, which support quantitative findings, include an acknowledgement of low prices, climate variability, and a lack of inputs (fertilizer, pesticide, mulch, etc.) as major barriers to investment. Many farmers suggested that they receive insufficient pesticides and fertilizer, and that it is not delivered when needed. They also lack equipment (e.g., pesticide sprayers) needed to use these inputs. Farmers suggest a need for expanded access to extension and training, though many farmers spoke positively about the training they have received from government agronomists, non-governmental organizations (e.g., TechnoServe), and some private companies. When asked about the recently adopted zoning policy, most farmers knew about it, though some were unsure what it was. Those farmers who knew about the policy were largely negative about it, believing that it benefits coffee washing stations at the expense of farmers. Women's groups shared many of the same perspectives as the mixed groups, however they also focused on the unique challenges faced by women coffee farmers, including the difficulty of some physical tasks in coffee (e.g., chopping off large limbs of trees) and a tradition in which men deal with money in cash crops.

Although these focus group data require additional analysis in the coming months, the initial findings support and expand on findings from the farmer survey and key informant interviews, while providing crucial farm-level perspectives. These data allow for greater nuance in understanding phenomena related to productivity and pest incidence in coffee, and will provide helpful inputs for continued policy discussions.

**Other Policy Engagement Activities**

Andrew Gerard from MSU presented at the 2017 Rural Sociological Society Annual Meeting on July 30, 2017 in Columbus, Ohio. The title of the presentation was: "Is small beautiful? Analyzing farm size and coffee farmer productivity in Burundi."

Ruth Ann Church from MSU presented at the Re:Co Symposium in Seattle, WA on 19 April 2017. The title of the presentation was: "Empowering Evidence: What Motivates Farmers to Invest in Coffee in Rwanda?". She also presented at the International Women in Coffee Alliance (IWCA) 5th Convention, in Puebla, Mexico on 5 August 2017. The title of that presentation was: "Challenges and Opportunities for Women in the Rwandan Coffee Sector".

David Ortega from MSU presented a seminar at the Food and Agriculture Organization of the United Nations (FAO) in Rome, Italy on 3 September 2017. The title of the presentation was: "Farmer Incentives and Capacity to Invest: Finding a Path to Sustainable Growth in Rwanda's Coffee Sector".

Daniel Rukazambuga from UR presented at the 2017 Sustainable Harvest-Let's Talk Coffee Conference in Kigali, Rwanda, on 7-9 July, 2017. The title of the presentation was: "Control of Antestia/PTD and Improving Coffee Productivity in Burundi and Rwanda."

Dan Clay from MSU also presented at the 2017 Sustainable Harvest-Let's Talk Coffee Conference in Kigali, Rwanda, on 7-9 July, 2017. The title of the presentation was: "Incentivizing Coffee Farmer Investments for Higher Productivity and Quality."

### 3.1.3. Capacity Building / Farmer Training & Outreach

The focus of the AGLC capacity building component is on increasing farmer awareness and reducing the effects of antestia/PTD and low productivity at the farm level. Demonstration plots, farmer training and media messages are the primary vehicles for building capacity at the producer level. Per the Year 2 Work Plan the focus of this component was on using research field activities and results, along with other proven materials to raise the capacity levels of the targeted farmer groups.

*In Rwanda:*
In August and September 2017, after completing data collection from the experimental fields, farmers participated in a series of capacity building activities. Most participating farmers are now aware of antestia bug control and community members have followed these trainings. The capacity building has covered good agricultural practices (GAPs), proper canopy management, mulching, fertility management, timely antestia control and impact on PTD, erosion control and rejuvenation of fields. In areas where farmer field schools (FFS) were present, research assistants joined the trainers and conducted a training on antestia control. In KOPAKAMA, for example, where there are 27 FFSs, three of the four AGLC experimental fields were used for the training.

A total of 775 coffee farmers in all four districts were trained, with 482 (62%) male farmers and 293 (38%) female participants.

The main agricultural practices targeted in the training were:

- Role of mulching on coffee productivity
- Importance of pruning and how it is correctly done
- Tree rejuvenation
- Fertility management and how it is applied, including organic fertilizer use for CWSs that engage in organic coffee production.
- Discussions on the role of intercropping coffee with trees that provide shade and green manure to the coffee
- Antestia control and its effect on the quality of green coffee and price

The project supported 20 students during this six-month period. Students did their final year research projects on coffee in the districts of Gakenke, Huye and Rutsiro. Their final year research projects covered different components of the coffee value chain. Students were trained on using the research instruments designed for that purpose.

The UR team identified and recruited 16 field research assistants on May 2, 2017. They were trained on good agronomic practices in coffee, experimental fields design, plot layout, data collection, completion of data sheets, fertilizer and lime application, and antestia scouting.

*In Burundi*

With technical support from ABS (AgriBusiness Services), the Polytechnic University of Gitega organized training sessions for coffee growers in April. This training took place at two sites: Gitega for coffee growers from the province of Gitega and Karusi, and Ngozi for those from Ngozi and Kayanza. In all, the training was carried out over an 8 day period (4 days in Gitega and 4 days in Ngozi). In Gitega the training took place from 18 to 21 April 2017 and in Ngozi from 26 to 29 April 2017. ABS shared the experience with coffee growers mainly on 3 topics:

- Application of GAPs and production of quality coffee
- Coffee as a profitable crop
- Development for the production of improved manure

Participants were selected randomly from the 64 coffee growers per station. Their geographic and gender breakouts are shown in the tables below.

For the Polytechnic University of Gitega area

| PROVINCE | COMMUNE | Participants Male | Participants Female | Participants Total |
|---|---|---|---|---|
| GITEGA | Bukirasazi | 4 | 0 | 4 |
| | Giheta | 3 | 1 | 4 |
| | Gitega | 3 | 1 | 4 |
| | Makebuko | 3 | 1 | 4 |
| KARUSI | Bugenyuzi | 6 | 2 | 8 |
| | Gihogazi | 7 | 1 | 8 |
| TOTAL | 6 | 26 | 6 | 32 |

For the University of Ngozi area

| PROVINCE | COMMUNE | Participants Male | Participants Female | Participants Total |
|---|---|---|---|---|
| NGOZI | Ngozi | 10 | 0 | 10 |
| | Ruhororo | 6 | 0 | 6 |
| KAYANZA | Butaganzwa | 5 | 3 | 8 |

| | | | | |
|---|---|---|---|---|
| | Kabarore | 4 | 0 | 4 |
| | Kayanza | 3 | 1 | 4 |
| TOTAL | 5 | 28 | 4 | 32 |

Main Challenges: Coffee grower partners of the Polytechnic University of GITEGA are suspicious and those of the University of Ngozi more optimistic about the profitability of coffee. It was first necessary to develop case studies on production costs so that they would be convinced of the profitability of the crop.

The treatment of the Antestia remains problematic because it is not systematically addressed through strong collaboration with local government. We note that the implementation of GAPs requires means that are not always available. The need for micro-finance is needed for the purchase of inputs, labor and equipment.

Key Achievements: In the three developed case studies, it was shown that even if farmers spend more resources on increasing tree production, the result will be positive because the increased production per coffee tree is leads to a decrease in the average cost of production. Moreover, the coffee produced becomes denser and gives a better yield, both of which result in a reduction of defects, in particular a lower rate of antestia and PTD.

*Radio messages*
The AGLC project also built farmer capacity by broadcasting radio messages in rural areas. The Global Knowledge Initiative personnel worked with the University of Rwanda in developing, editing and translating strategic radio messages targeting coffee farmers.

Two messages were transmitted during the month of April. The first message provided information on how to control antestia during the harvest season, while the second message provided guidelines for proper harvesting techniques to improve quality.

*SMS Messaging Platform*
The AGLC team, led by the University of Rwanda, has faced ongoing challenges with the implementation of an SMS messaging platform. The main challenge has been in finding a server with the capacity to host the SMS platform. The current host server, located at the Busogo Campus of UR is old and has not been updated, which renders it incompatible with the VPN site-to-site of the MTN server (the telephone company). The team at UR attempted an upgrade, but still faced challenges of unreliable internet connectivity from this campus location. At this time, the team is proposing to change the server location to a more reliable site.

## 3.2. Monitoring & Evaluation Plan Update

In this April – September reporting period, monitoring and evaluation activities went smoothly. Two indicators are reported semi-annually, and they have been updated for the Year 2 second

semester in AidTracker. For the other five indicators, which are reported annually (see Table in Annex 2), the required data will not be ready until January 2018, or three months after the October 31, 2017 deadline. This is the planned timing of the project and therefore a known issue. Our AOR (program manager) at USAID is aware of the issue and has agreed that for end of Year 2 we will report the same data as end of Year 1 for these five indicators. Then, the Endline survey data will be available and reported by March 2018 in AidTracker.

The two semi-annual indicators are "number of policy briefs or presentations" and "number of datasets made public." Both of these indicators are above their targets for this period. For policy briefs and presentations, the three roundtables and two policy briefs related to those roundtables constitute the five reported items, and two were targeted for this reporting period. For datasets, each roundtable is considered public distribution of a new dataset and they are made public on the FSP-IL website. So three were completed this period, surpassing the target of two.

The five annually reported indicators are: 1) Number of antestia bugs per tree, 2) Hectares under improved technology, 3) Households applying improved technology, 4) Gross margins per hectare, and 5) Percent of cherry sold through the fully-washed channel. These indicators are currently lagging compared to the targets for end of Year 2, sometimes only slightly below the goal for this time period. As mentioned above, these are not the actual results at the end of Year 2, they are the most recent data available. They reflect the metrics for the 2016 harvest in which prices for coffee cherry were at a historical low in Rwanda. The low prices had a strong negative impact on the results the project might otherwise have achieved. Details describing the negative impact of low prices for each indicator are included in the AidTracker system.

- The average number of antestia bugs per tree, at .835, is slightly above the target of .73 for this period, and this indicator should be decreasing. This 13% undesirable difference is due to the fact that farmers spend less time on tasks and less money on pesticides in years when the expected return is very low or negative (due to low cherry prices).
- Number of farmers applying improved technology is slightly below the target, but by less than 2%, meaning it is not significantly off.
- Number of hectares under improved technology is below the target by about 9%, which is due to the fact that farmers in 2016 were so discouraged by the low cherry prices.
- Gross margins per hectare remain less than half of the targeted amount for farmers to be earning. This is due to the fact that 2016 left most coffee farmers with serious losses due to the low prices for cherry and the "down year" in the bi-annual cycle that coffee in Rwanda has.
- The target for fully-washed coffee as a percent of total was just barely missed, coming in at 96% instead of 97%, i.e. not significantly different.

## 4. Upcoming Events / Activities

Because Year 3 funding (from Burundi) was not available, the AGLC team was not able to implement the initially proposed Year 3 project activities. However, to ensure that end-of-project data on key indicators would be collected for monitoring purposes, USAID/Rwanda provided supplementary funding for the implementation of an Endline household survey. The scope of work for this Endline Survey is described in the sections below.

### 4.1. Endline Household Survey

**Endline household survey as a third panel in a round of three surveys**

It is instructive to note the progression of survey data collected under AGLC and the panel of sample households selected for enumeration at each stage. The initial Baseline household survey was fielded in January and February of 2016 with multiple objectives, the first being to identify and document the level of awareness of antestia/PTD among coffee-growers, their levels of knowledge about how to address the problem, as well as the specific practices they have adopted to combat it. Farmer awareness, knowledge and practices constituted a focal point for AGLC and the success of the program hinges on improving farmer behavior against these indicators. The baseline survey established benchmarks against which future progress could be measured. A second objective of the baseline survey was to identify the barriers to farmer investment in coffee production and how incentives are tied to coffee sector policies related to cherry prices, pre-financing, cost of production, gender roles and other aspects of the coffee value chain. Understanding farmer behavior, as it relates to incentive mechanisms and socio-economic elements of on-farm decision-making, is of paramount importance to formulating effective coffee sector policies.

In the Endline survey, detailed information related to the AGLC antestia and productivity indicator set will again be collected. The project's seven key indicators on which Endline data will be collected are summarized in the following table.

| AGLC Core Indicator | Indicator definition |
|---|---|
| #1 | Incidence of PTD/Antestia in fields |
| #2 | Hectares under improved technologies |
| #3 | Number of farmers applying improved productivity and/or PTD mitigation technologies |
| #4 | Gross margin per hectare |
| #5 | Number of policy instruments (briefs, presentations, reports) on target issues |
| #6 | Number of new data sets informing food security policies available for public use |
| #7 | Percent of total kg producer cherry processed through fully-washed channels. |

Positive results are expected on indicator 1 (PTD/Antestia incidence), but also on sub-indicators the project staff follow to track details on the penetration of Antestia and its impact on yields,

plant growth and cherry quality. Indicators 2, 3 and 4 are also expected to improve during this final year of the project, so questions related to adopting improved technologies, and the resulting impact on gross margins will again be included in the Endline survey.

We will also use this Endline survey opportunity to collect household level data on several critical policy issues addressed by AGLC. These include: zoning policy, the impact of higher prices on farmer investments in coffee (including inputs use), and gender roles in coffee.

**Endline survey methodology and implementation**

In Rwanda, the IPAR team will lead the implementation of the coffee producer Endline survey. As mentioned above, it will be fielded in the same four selected districts of Rwanda as were the Baseline and Midline surveys and the selected households will be same 50 percent subsample of those surveyed in the Midline, creating a three-point data panel.

The survey instrument was developed in September 2017 under MSU leadership. The instrument will be ready for testing and full data collection in October, 2017. Given the success of the Baseline and Midline data collection operations, the field team will again use hand-held devices (Samsung 7-inch tablets) for the Endline data collection. As the Baseline survey confirmed, tablet-based data collection has many advantages, including the reduction of error rates, elimination of a separate data entry process, and immediate access and review of data by the supervisory staff. Another advantage this time around is that many of the interviewers and supervisors are familiar with the operation of the tablets, which we expect will help to reduce the time required for training and survey implementation.

A field staff of 10 interviewers and two supervisors will be engaged to complete the Endline survey data collection. They will first be introduced to the research objectives and the overall project goals to enable them contextualize the data collection process, and then will be trained on all sections of the survey instrument, the use of tablets for data collection and on ethical concerns in conducting household interviews.

The recruitment of enumerators will again take into account their experience in data collection, especially in agriculture and socio-economic subject matter. Where possible, interviewers involved last year in the Midline implementation will again be hired to field the Endline survey. The enumerator training for the Endline survey will be led by IPAR and is scheduled for a one-week period in early October, 2017. Two days will be designated for classroom based instruction, followed by two days of pretesting and field training. Following the pretest, the teams will regroup to review the results and to make final changes to the survey instruments.

**Endline survey data cleaning and analysis**

Endline survey data cleaning and analysis will be led by MSU staff with assistance from IPAR and UR. Most importantly, the indicator data will be compiled and reported both in AidTracker and in a separate Monitoring & Evaluation report. Other analyses will be conducted from the Endline data and reported at the End-of-Project workshop currently scheduled for June, 2018.

Research reports and policy briefs from the Endline survey that are planned for presentation at the workshop include the following:

- Final project Monitoring & Evaluation Report (based on core indicator data)
- Policy brief on the cherry prices and farmer investments (including use of inputs)
- Report on the impact of the coffee zoning policy
- Report on gender and coffee

## 4.2. Other Project Activities

**Continued Data Analysis**
In addition to the Endline analyses summarized above, the AGLC team will complete a series of policy analyses and scholarly publications that are currently under way using data from the suite of household surveys and experimental fields research. In particular we anticipate completing reports in the following areas.

- Gender in Coffee: Findings and Policy Implications
- Experimental fields analysis of alternative antestia treatments (Rwanda and Burundi)
- Farmer Incentives and Value Chain Governance: Critical Elements to Sustainable Growth in Rwanda's Coffee Sector
- Collective action and coffee productivity in Rwanda's specialty coffee sector

**End-of-Project Workshop**
The end of project workshop has been tentatively scheduled for June 2018 in Rwanda. This change will allow the team to prepare analytical reports, especially from the Endline survey and the Experimental Fields research. The end-of-project workshop will be organized by GKI in collaboration with IPAR and will be held in at a Kigali Hotel (TBD).

## Annex 1: AGLC Year 2 Activities and Percent Completed

| Africa Great Lakes Region Coffee Support Project Timeline (Project Year 2) | | | | | | |
|---|---|---|---|---|---|---|
| Activity/Outcome | Lead/Support Insitutions | Quarter Due | | | | % Completed for Septmber 2017 Semi-Annual Report |
| | | 1 | 2 | 3 | 4 | |
| **Applied Research Component Activities/Outcomes** | | | | | | |
| Year 2 Midline Household Survey | | | | | | |
| Survey design (45 min survey, 512 HHs in each country) | IPAR/MSU/All | ■ | | | | 100% |
| Instrument development | IPAR/MSU/All | ■ | | | | 100% |
| CSPro Mobile tablet programming | IPAR/MSU/All | ■ | | | | 100% |
| Enumerator training | IPAR | ■ | | | | 100% |
| Pretest and revision of Y2 survey | IPAR | ■ | | | | 100% |
| Y2 Survey Implementation | | | | | | |
| Y2 Survey data collection | IPAR | ■ | ■ | | | 100% |
| Compile Y2 survey data in CSPro | MSU/IPAR | | ■ | | | 100% |
| Convert baseline data to SPSS/Stata | MSU/IPAR | | ■ | | | 100% |
| Clean survey data (range and consistency) | MSU/IPAR | | ■ | | | 100% |
| Data coding (open-ended Qs to numeric data) | MSU/IPAR | | ■ | | | 100% |
| Data transformation | MSU/IPAR | | ■ | | | 100% |
| Data analysis | MSU/IPAR/All | | ■ | ■ | | 90% |
| Draft Y2 HH survey research reports | MSU/IPAR/All | | ■ | ■ | | 100% |
| Field-based Experimental Research Implementation | | | | | | |
| Field-based data collection (N=64) | UR | ■ | ■ | ■ | ■ | 50% |
| Compile/enter field-based survey data in Excel | UR | | | ■ | | 50% |
| Convert field-based data to SPSS for analysis | MSU | | | ■ | | 0% |
| Clean field-based data (range and consistency) | MSU | | | ■ | | 0% |
| Data transformation | UR/MSU | | | | ■ | 0% |
| Analysis of Y2 field-based data | UR/MSU | | | | ■ | 0% |
| Draft field-based research report | UR/MSU | | | | ■ | 0% |
| Coffee Washing Station Survey | | | | | | 80% |
| Develop and test CWS questionnaire (N=16) | UR/MSU | | | ■ | | 100% |
| CWS data collection | UR/MSU | | | ■ | | 100% |
| CWS data analysis | UR/MSU | | | | ■ | 40% |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Capacity Building Component Activities/Outcomes** | | | | | | |
| Develop training materials | UR | ■ | | | | 100% |
| Organize farmers in modified FFS groups | UR | ■ | | | | 100% |
| Hold training sessions on experimental fields | UR | ■ | ■ | ■ | | 100% |
| Train broader sample of leader farmers in GAP (ABS) | UR | ■ | | | | 100% |
| Develop and transmit radio broadcast messages | UR/MSU | ■ | ■ | ■ | ■ | 100% |
| Conduct sessions with partners (public & private) to disseminate best practices recommendations | UR | ■ | ■ | ■ | ■ | 100% |
| Develop and pilot test system for farm-level SMS reporting of results | UR | | ■ | | | 100% |
| Develop and transmit SMS messages | UR | ■ | ■ | ■ | | 100% |
| **Policy/Stakeholder Engagement Component Activities/Outcomes** | | | | | | |
| Engage coffee stakeholders on policy issues and data needs assessment | IPAR/GKI/MSU | ■ | | | | 100% |
| Hold 10-15 key informant interviews w/ gov't & private sector decision makers on targeted policy issues | IPAR/GKI | | ■ | | | 100% |
| Hold 10-15 Focus group discussions w/ gov't & private sector decision makers on key policy issues | IPAR/GKI | | ■ | | | 100% |
| Prepare 4 policy briefs and associated PPTs | | | | | | |
| Policy brief and PPT on farmer investments in coffee | IPAR/MSU/GKI | | | ■ | | 100% |
| Policy brief and PPT on zoning issues | MSU/IPAR/GKI | | | ■ | | 100% |
| Policy brief on field-based PTD/antestia control and improved productivity research | UR/MSU/GKI | | | ■ | | 100% |
| Policy brief and PPT on pricing for quality | IPAR/MSU/GKI | | ■ | | | 100% |
| Hold 4 advocacy round tables with coffee sector decision makers (presentation of results, discussion of policy issues and recs) | IPAR/GKI | | ■ | ■ | | 100% |
| End-of-Year (now End-of-Project) Workshop to present research, capacity building and policy engagement results (UR/GKI will convene) | IPAR/GKI | | | | ■ | 0% |
| **Progress Reports and Data Activities/Outcomes** | | | | | | |
| Semi-annual Progress Report (mid-year) | MSU/All | | ■ | | | 100% |
| Semi-annual Progress Report (end of year) | MSU/All | | | | ■ | 100% |
| Monitoring & Evaluation (M&E) Reporting | MSU/All | ■ | ■ | ■ | ■ | 100% |

## Annex 2: AGLC - Performance Indicators with Targets

All data for Rwanda only.

| AGLC core Indi-cator | Indicator definition | Unit of Measure (gender disaggregated when possible) | Method of Data Collection | Reporting Frequency | Baseline | Target Year 1 | Year 1 (reporting Apr. 2017) | Target Year 2 | Actual Year 2 | Target Year 3 (Oct. 2018) | Variable(s) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| #1 | Incidence of PTD/Antestia in fields | Avg. # of bugs/tree | Farmer surveys (N=2,048) & Field observ on exper. plots (N=128) | Annually | 0.763 | 0.73 | 0.84 | 0.70 | 0.84 | .65 | Farmers: ANTPERTREE |
| | | | | | n.a. | n.a. | n.a. | n.a. | 0.58 | n.a. | Avg. # bugs/tree in *treated* study fields. |
| #2** | Hectares under improved technologies | # of hectares under improved practices | Farmer surveys (N=2,048) | Annually | 132 ha | 135 ha | 127 ha | 139 ha | 127 ha | 145 ha | Productivity: COFFEESQM2_sum BestProdPract |
| #3** | Number of farmers who have applied improved productivity and/or PTD mitigation technologies. *USAID wording: improved technologies or management practices.* | # of farmers in treatment areas exhibiting changed behavior | Farmer surveys (N=2,048) | Annually | 530 | 557 | 574 | 583 | 574 | 610 | Productivity: BestProdPract |
| #4*** | Gross margin per hectare *** | Value in US$ | Farmer surveys (N=2,048) | Annually | $530 | $543 | $261 | $550 | $261 | $556 | USAID: CofGrossMargNOLAB |
| | | | | | $374 | $376 | $61 | $383 | $61 | $392 | AGLC: CofGrossMarg |
| #5**** | Number of policy instruments (briefs, presentations, reports) on target issues | Number | Research results | Semi-annually | 0 | 0 4 | 0 8 | 2 2 | 3 5 | 2 2 | |
| #6**** | Number of new data sets informing food security policies available for public use | Number | Research results | Semi-annually | 0 | 2 2 | 6 0 | 2 2 | 2 3 | 2 2 | |
| #7 | Percent of total kg producer cherry processed through fully-washed channels. | Kg cherry processed as FW/total kg cherry processed | -Farmer surveys | Annually | 95% | 97% | 96% | 98% | 96% | 99% | Farmers: SALE15CHERKG CherToParchKG |

**Indicators to be submitted to the FTFMS system.

***AGLC will calculate this indicator two ways. The indicator reported in FtFMS will be calculated as described in the FtF Handbook. The second version will be used by the project for monitoring, which will include a value for unpaid HH labor in the input costs. The FTF gross margin (which values unpaid household labor at 0) is not being used by the project but we expect it will increase as indicated.
****Indicators related to the FSP-IL leader award strategic results.