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AVANSE WORK PLAN

APPUI À LA VALORISATION DU POTENTIEL AGRICOLE DU NORD, POUR LA SÉCURITÉ ÉCONOMIQUE ET ENVIRONNEMENTALE (AVANSE)

FY 2019 (OCTOBER 2018–DECEMBER 2019)

DECEMBER 2018

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FY 2019 (OCTOBER 2018–DECEMBER 2019)

Program Title:	**Appui à la Valorisation du Potentiel Agricole du Nord, pour la Sécurité Économique et Environnementale (AVANSE)**
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Cover picture: Cacao trees in Northern Haiti affected by the 2018 drought.

January 17, 2019

Third draft submitted for USAID review and approval.

CONTENTS

TABLES AND FIGURES

TABLES

FIGURES

ACRONYMS

AID	Association des Irrigants, Dubré (Water User Association, Dubré)
AIGG	Association des Irrigants de Grison-Garde (Water User Association, Grison-Garde)
APS	Annual Program Statement
AREA	Appui à la Recherche et au Développement Agricole/ The Feed the Future Haiti project
AVANSE	Appui à la Valorisation du potentiel Agricole du Nord, pour la Sécurité Économique et environnementale (Support to the Development of the Potential of Agriculture in the North for Economic and Environmental Security)
APROCANO	Association of Cacao Producers of the North
BAAs	Broad Agency Announcements
BAC	Bureaux Agricoles Communaux (Local-Level Branches of the Ministry of Agriculture)
BDS	Business Development Services
BRH	Banque de la République d'Haïti, (Central Bank of Haiti)
CASEC	Conseil d'Administration de la Section Communale (Board of Directors of the Communal Section)
CAJBC	Coopérative Agricole Jean Baptiste Chavannes (Agricultural Cooperative Jean Baptiste Chavannes)
CAPUP	Coopérative Agricole Planteurs Unis, Port Margot (United Agricultural Cooperative Planters, Port Margot)
CASELI	Centre d'Appui et de Services aux Entreprises Locales et Internationales (Center for Support and Services for Local and International Businesses)
CBO	Community-Based Organization
CHCL/UH	Campus Henri Christophe de Limonade/University of Haiti
CLES	Collectif de Lutte contre l'Exclusion Sociale (Collective Fighting against Social Exclusion)
COP	Chief of Party
CPCN	Cooperative of Cacao Producers in the North
DAP	DiAmmonium Phosphate
DCOP	Deputy Chief of Party
DDA	Directions Départementales Agricoles (Regional-level Branches of the Ministry of Agriculture)
DIA	Direction des Infrastructures Agricoles (Agricultural Infrastructure Directorate)
EC	Environmental Compliance
EMMP	Environmental Mitigation and Monitoring Plan
FAMV	Faculté d'Agronomie et de Médecine Vétérinaire/ State University of Haiti's Faculty of Agronomy and Veterinary Medicine
FECCANO	Fédération des Coopératives Cacaoyères du Nord (Federation of Northern Cacao Cooperatives)
FFS	Farmer Field School
FTF	Farmer-to-Farmer
FY	Fiscal Year

GAP	Good Agricultural Practices
GIS	Geographic Information System
GOH	Government of Haiti
GPS	Global Positioning System
GSP	Grants, Subcontracts, and Procurement
ha	Hectare
HAYTRAC	Haytian Tractor & Equipment Co. S.A.
HTG	Haitien Gourde
ICDF	International Cooperation Development Fund (Taiwan)
IMF	Institution de Microfinance
IMP	Inputs, Marketing, and Processing
IP	Implementing Partner
IPM	Integrated Pest Management
IPMP	Integrated Pest Management Plan
IPTT	Indicator Performance Tracking Table
IR	Intermediate Result
IRRI	International Rice Research Institute
lm	Linear Meter
LEVE	Local Enterprise and Value Chain Enhancement
LOP	Life of Project
LWR	Lutheran World Relief
M&E	Monitoring and Evaluation
MAPLAM	Mouvement des Agriculteurs de la plaine du Maribaroux (Movement of Farmers of the Maribaroux plain)
MARNDR	Ministry of Agriculture, Natural Resources, and Rural Development
MIS	Market Information System
MOU	Memorandum of Understanding
MMT	Million Metric Tons
NGO	Non-Governmental Organization
NPK	Nitrogen Phosphurus Potassium
NRM	Natural Resource Management
PEA	Programmatic Environmental Assessment
PERSUAP	Pesticide Evaluation Report and Safer Use Action Plan
PIF	Plantes Issues de Fragments (Plants grown from pieces)
PISA	Produits des Iles, S.A.
PPP	Public-Private Partnership
PSF	Production sans Frontières
RC	Reinforced Concrete
RFP	Request for Proposals
SIBA	Système d'Incitation via les Bons d'Achat
SIGR	Service d'Irrigation et de Génie Rural
SIMA	Systeme d'Information sur les Marche Agricole (Agricultural Market Information System)
SMS	Short Message Service
SMIR	Services mécaniques d'irrigation rurale (Mechanical Rural Irrigation Services)

SOW	Statement of Work
SRA	Système Rizicole Améliorée ("Improved" Rice-planting System, Adaptation of SRI)
SRI	Système Rizicole Intensive (Intensive Rice-Planting System)
SRT	Système Rizicole Traditionnel (Traditional Rice-planting System)
Sub-IR	Sub-Intermediate Result
TAMIS	Technical and Administrative Management Information System
TDS	Total Dissolved Solids
UPBH	Union des Producteurs de Banane d'Haiti (Union of Haitien Banana Producers)
USAID	United States Agency for International Development
USAI	Unité Statistique Agricole et Informatique
WOCCU	World Council of Credit Unions
WUA	Water Users' Association

INTRODUCTION

The overall objective of the AVANSE (*Appui à la Valorisation du Potentiel Agricole du Nord, pour la Sécurité Economique et Environnementale*) project contract is **to increase farmer incomes in Haiti's Northern Corridor**. The project operates in six watersheds: Limbé, Haut du Cap, Grande-Rivière-du-Nord, Trou du Nord, Marion, and Jassa, with two cacao extension zones in Borgne and Port Margot.

AVANSE started on April 1, 2013. On June 17, 2015, a number of the original project activities were dropped, the targets reduced, and the end date changed to July 31, 2017. On September 30, 2016, the United States Agency for International Development (USAID) made additional revisions to the Scope of Work (SOW) and deliverables, and set a new contract end date of December 31, 2018. On October 19, 2018 the SOW was revised again and an end date of December 31, 2019 was set.

This Fiscal Year (FY) 2019 work plan has been drafted to address the objectives and achieve all the deliverables and life-of-project (LOP) targets in that October 19, 2018 contract. It extends to December 2019 to incorporate the close down activities in Q1 2020.

The specific changes to the Intermediate Results (IRs) in the October 19, 2018 contract revision were:

a) **IR 1**. Activities in the rice, plantain/banana, and cacao value chains will be implemented with a focus on sustainability and private sector engagement. New IR 1 targets of 3,000 hectares (ha) of rice, 4,000 ha of plantains/banana, and 11,500 ha of cacao were adopted.

b) **IR 2**. All activities under IR 2 end. The life of project targets for IR 2 are unchanged, with at least 3,000 additional ha under improved agroforestry systems established by the end of 2018.

c) **IR 3**. Activities under IR 3 work with the private sector, in post-harvest and processing activities, marketing, and input supply (including seed and seedling production). Targets were updated to: 200 percent increase in the incremental value of rice sales, 200 percent increase in the incremental value of bananas/plantains sales, and 150 percent increase in the incremental value of cacao sales.

d) **IR4**. All activities implemented under IR4 remain terminated.

e) Infrastructure. Activities supporting access to irrigation water include two irrigation systems, Dubre in the north and Chalopin in the northeast. The updated irrigation targets are to improve 571 irrigated ha on Dubre and Chalopin and improve the soil and water management on 429 ha of banana/plantain, cacao, and rice production areas, for a total area of 1,000 ha.

Other targets in the current contract are 22,500 ha under improved technologies and assisting 28,000 farm households to increase their income. Annex A presents AVANSE's Indicator Performance Tracking Table (IPTT) with all the indicators and revised targets for each IR.

AVANSE has learnt from the experience of the last five years and adjusted its approach accordingly. In FY 2019, it intends to build upon the successes to date and continue to improve areas where performance has lagged. A renewed emphasis has been put on sustainability and incorporating youth and gender into all its activities. Priorities are to implement the two approved irrigation sub-projects; improve the availability of supplemental irrigation to commercial plantain farmers; support commercial entrepreneurs operating in agriculture supply, services, and processing in northern Haiti; forge new and expand existing public private partnerships; and award the remaining grant funds. A particular focus of this final year is improving the management and operations of local water user groups ensuring the permanence of AVANSE's impact.

With limited time and resources left, AVANSE intends to focus on those zones within the Northern Corridor with the highest potential for the three target crops, and with drought a continuing challenge, on increasing the availability and management of supplemental irrigation. To help ensure sustainability, AVANSE will use small grants to engage local communities and will work with associations and entrepreneurs to build on and expand the impact of the investments made to date.

This document is AVANSE's sixth annual work plan and outlines AVANSE's field activities for FY 2019 (October 2018–September 2019). It includes the period October 2019 to December 2019, when project closedown will occur. This work plan was drafted internally by the AVANSE team, and then discussed with a range of community participants, both public and private, and modified based on the input and suggestions received. Each major activity in this work plan has specific outputs. The proposed activities have been selected to meet all the contract targets and achieve the intermediate results in the AVANSE modified results framework. (Annex A).

Intermediate results in AVANSE's modified results framework (October 19, 2018):

- IR 1: Agricultural Productivity Increased
  - Sub-IR 1.1: Availability of Improved Production Technologies and Systems Increased
  - Sub-IR 1.2: Extension of Agricultural Technologies Strengthened
  - Sub-IR 1.3: Access to Inputs Increased
  - Sub-IR 1.4: Irrigation Systems Constructed/Rehabilitated and Management Capacity Increased
  - Sub-IR 1.5: Management Capacity of User Associations Increased
- IR 3: Agricultural Markets Strengthened
  - Sub-IR 3.1: Improved Access to Storage and Processing Facilities
  - Sub-IR 3.2: Improved Market Information Systems

THE STRUCTURE OF THIS WORKPLAN

This work plan includes the following main sections:

- Brief overview of project management, focused on any changes from FY 2018
- Activities for each of AVANSE's IRs; including
  - Challenges faced to date
  - The strategy proposed for each sub IR
  - Details of each proposed sub-activity, with outputs
- Annexes (IPTT, Environmental Management System and Budget)

AVANSE'S MANAGEMENT STRUCTURE AND STAFFING

As AVANSE enters the final year of implementation, its management structure, staffing, and systems have been slightly modified. There has been a reduction in staff, and some changes in roles.

A major change is that the current deputy chief of party (DCOP), Mr. Macorel Saint-Elien becomes chief of party (COP) in January 2019, and the current COP, Mr. Jonathan Greenham, transitions to technical advisor/LTTA.

Table 1 presents the roles of the senior management including key personnel (* denotes key personnel), and all the management transitions.

Table 1: Personnel Changes for 2019: AVANSE

Senior LTTA Personnel	Name	Comments
*Chief of Party, Expatriate	Jonathan Greenham	Transitions to a Technical Advisor Role in Jan 2019
*Deputy Chief of Party, Expatriate	Macorel Saint Elien	Transitions into the COP role in Jan 2019
Cacao Production Specialist, CCN	Raoul Dominique	Transitions to DCOP role in Jan 2019 and continues as Cacao lead
*Director of Operations/Sr. Financial Manager, Expatriate	Jeffrey Donahue	Continues in his current role through end of project
Irrigation/Civil Engineer, Expatriate	Michael McGovern	Phases out once the two irrigation sub-contracts are well under way
Construction Manager, CCN	Tamika Manigat	Takes on the Infrastructure Manager role
Project Engineer, CCN	Mikerson Paul	Continues in current role until completion of infrastructure activities
*Agribusiness and Markets Specialist, Expatriate	Eric Johnson	Phases out once the private sector activities are underway
Private Sector Manager, Expatriate	Vanessa Filippini	Transitions into the Agribusiness and Markets Specialist role, with support from the Technical Advisor
Rice Production Specialist, CCN	Jean Buddy Lucien	Continues until the field production portion of rice program phases out
Plantain Value Chain Team Lead, CCN	Tardier Decius	Changes role and assumes increased responsibilities
Watershed Management Specialist, CCN	Jean-Claude Pierre Louis	Phases out. Closes down NRM Program by Dec 2018
Senior Project Environmental Officer, Expatriate	Jean Marc Racine	Takes on broader responsibilities
Hillside Agro-Pastoral Specialist, CCN	Frandz Cothiere	Finalizes NRM and takes on Senior Manager role in cacao to support the Value Team Lead

Senior LTTA Personnel	Name	Comments
Grants, Subcontracts, and Procurement Manager (GPSM), Expatriate	Bangaly Sylla	Phases out in Dec 2018
Deputy Grants, Subcontracts, and Procurement Manager, Expatriate	Jacques Cesar	Becomes Grants, Subcontracts, and Procurement Manager
Finance and Accounting Manager, Expatriate	Alain Denis	Continues in his current role
Communications Coordinator	TBD	Recruitment underway
Program Coordinator, Expatriate	Marc Germain	Leaves project in Dec 2018
M&E Specialist, CCN	Eril Joseph	Left project in Oct 2018
Economist, CCN	Lonege Ogisma	Became M&E Specialist

MANAGEMENT STRUCTURE

AVANSE's COP is ultimately responsible for all of the project's results and ensures that coordination and integration occur across all of AVANSE's activities. He also directly supervises, on a daily basis, the managers responsible for rice, plantain, cacao, infrastructure, agribusiness, monitoring and evaluation (M&E), and communications. He is supported by a DCOP, who is responsible for daily management of the technical specialists in cacao and environmental compliance (EC). The COP also oversees the project's coordination with the Government of Haiti. The director of operations, supervises the managers responsible for finance and accounting; grants, subcontracts, and procurement; human resources; information technology; and administration and logistics.

Additional organizational changes have placed specific marketing staff directly into each value chain team to hasten and assist with the commercialization of the agricultural products and ensure that the private sector takes over the lead in supporting agricultural activities in Northern Haiti after AVANSE.

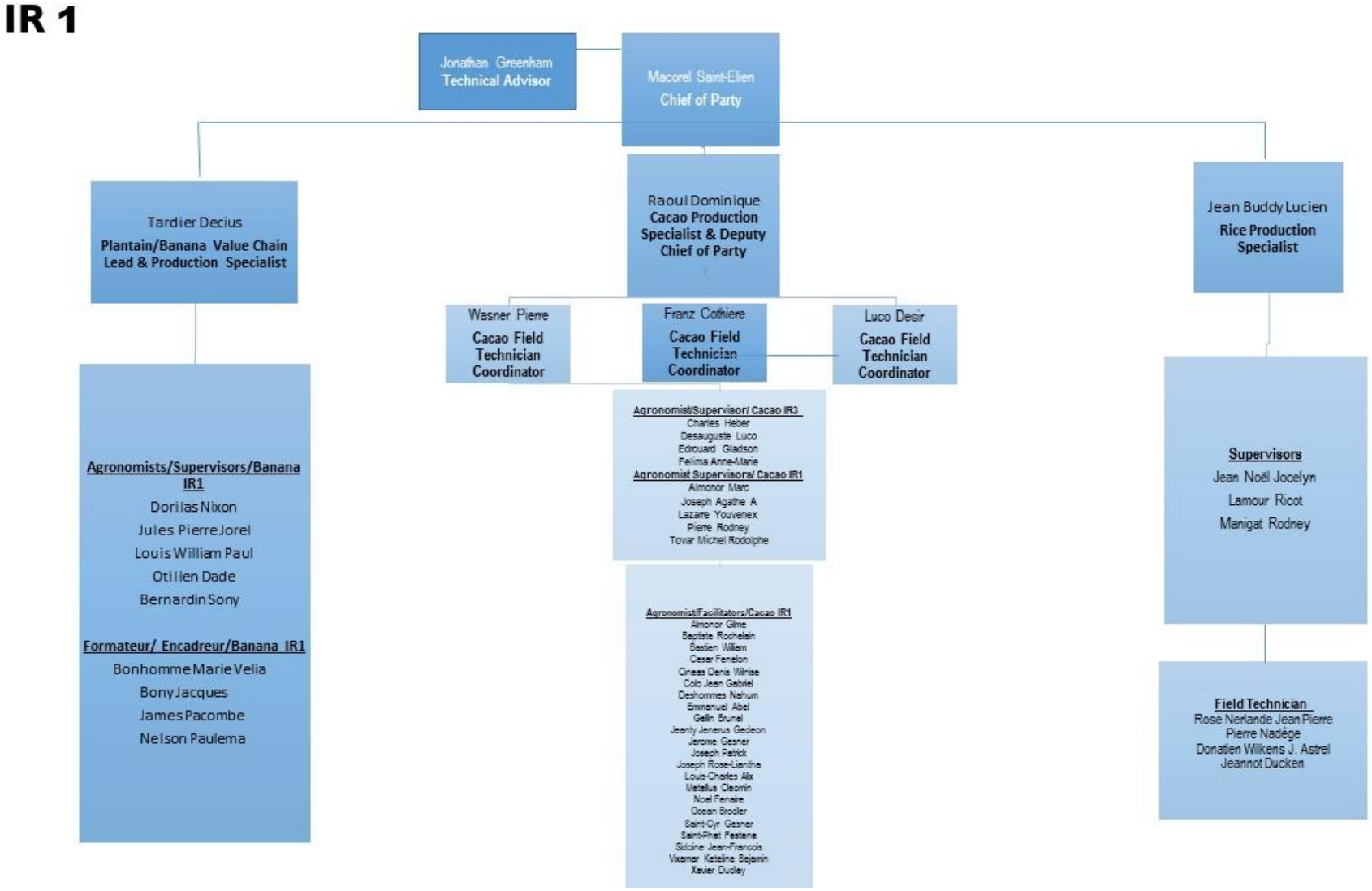
The EC unit helps ensure Reg. 216 compliance, resource conservation, and good stewardship. In 2019, the Environmental Team will expand its activities to include oversight of the impacts of the rehabilitation of the irrigation systems and improving hazardous waste management.

During FY 2018, the M&E staff were reorganized to improve the processing, evaluation, and analysis of project results. In 2019, they will continue to collaborate closely with the technical teams to ensure AVANSE has timely reports on project progress for its managers and for USAID. Finally, the AVANSE Communication Team will continue to share details of all of AVANSE project activities with a wide audience using a variety of media (print, radio, SMS, etc.) at a number of different venues.

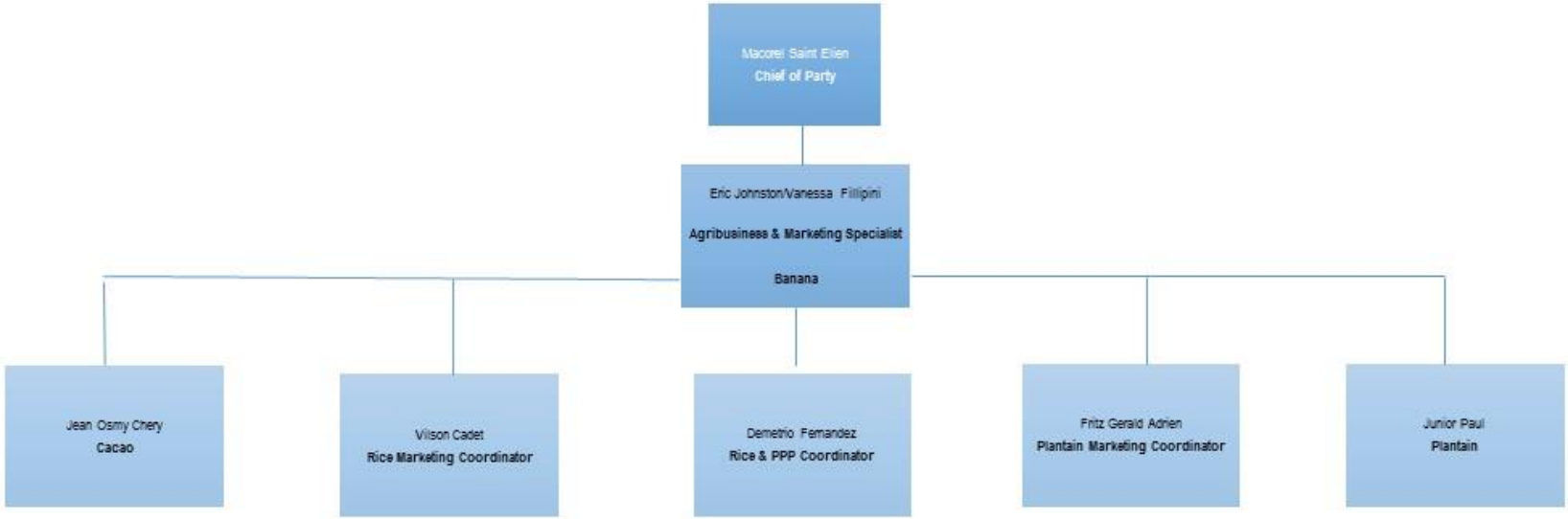
All these changes in project staffing will support AVANSE farmers through linking them to commercial supply and marketing firms, by creating sustainable systems, and by continuing to move the focus of the activities from production to improved marketing and processing.

The five organizational charts in Figure 1 illustrate the AVANSE project's current staffing.

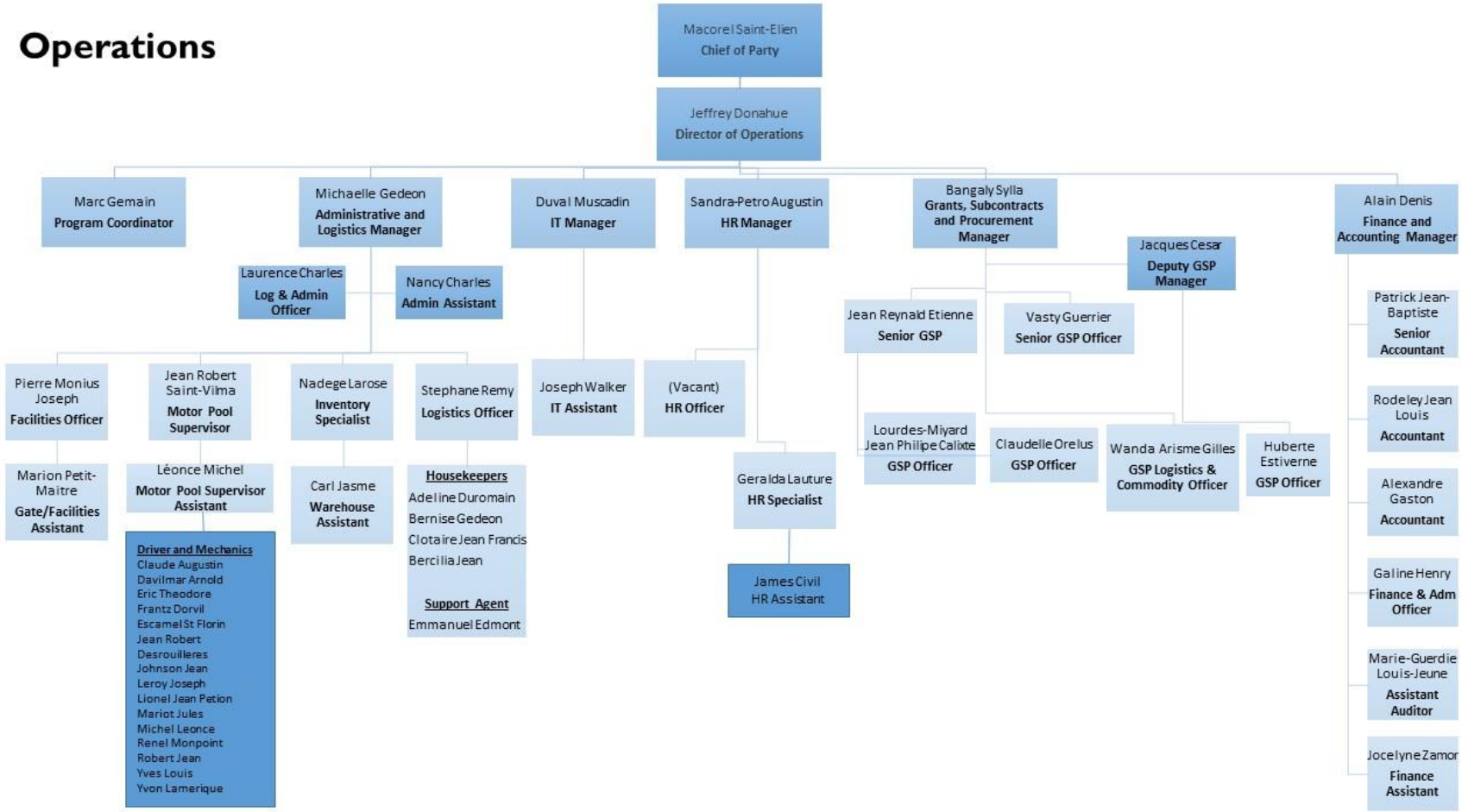
Figure1: Current Organizational Charts



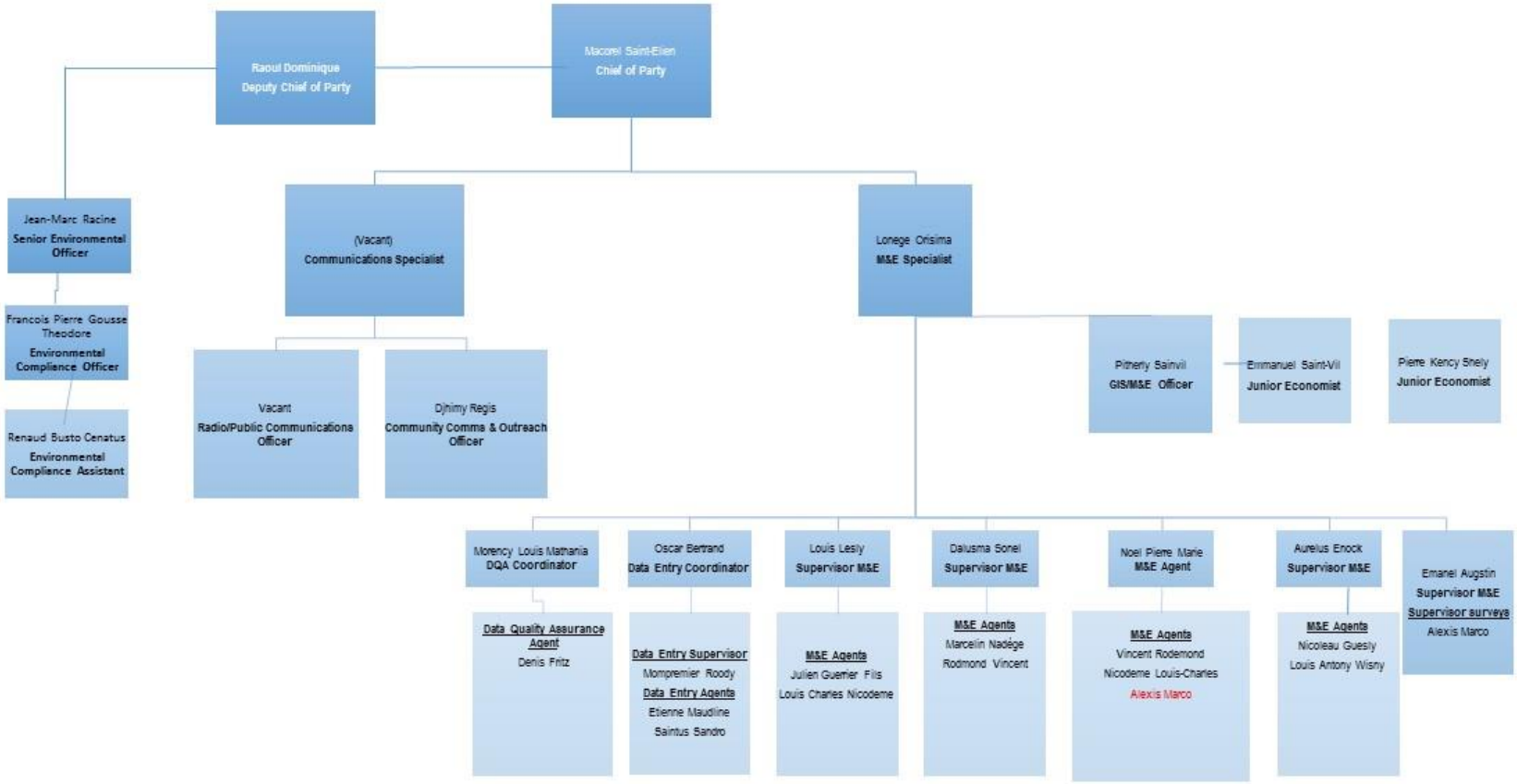
IR 3 - Commercialization



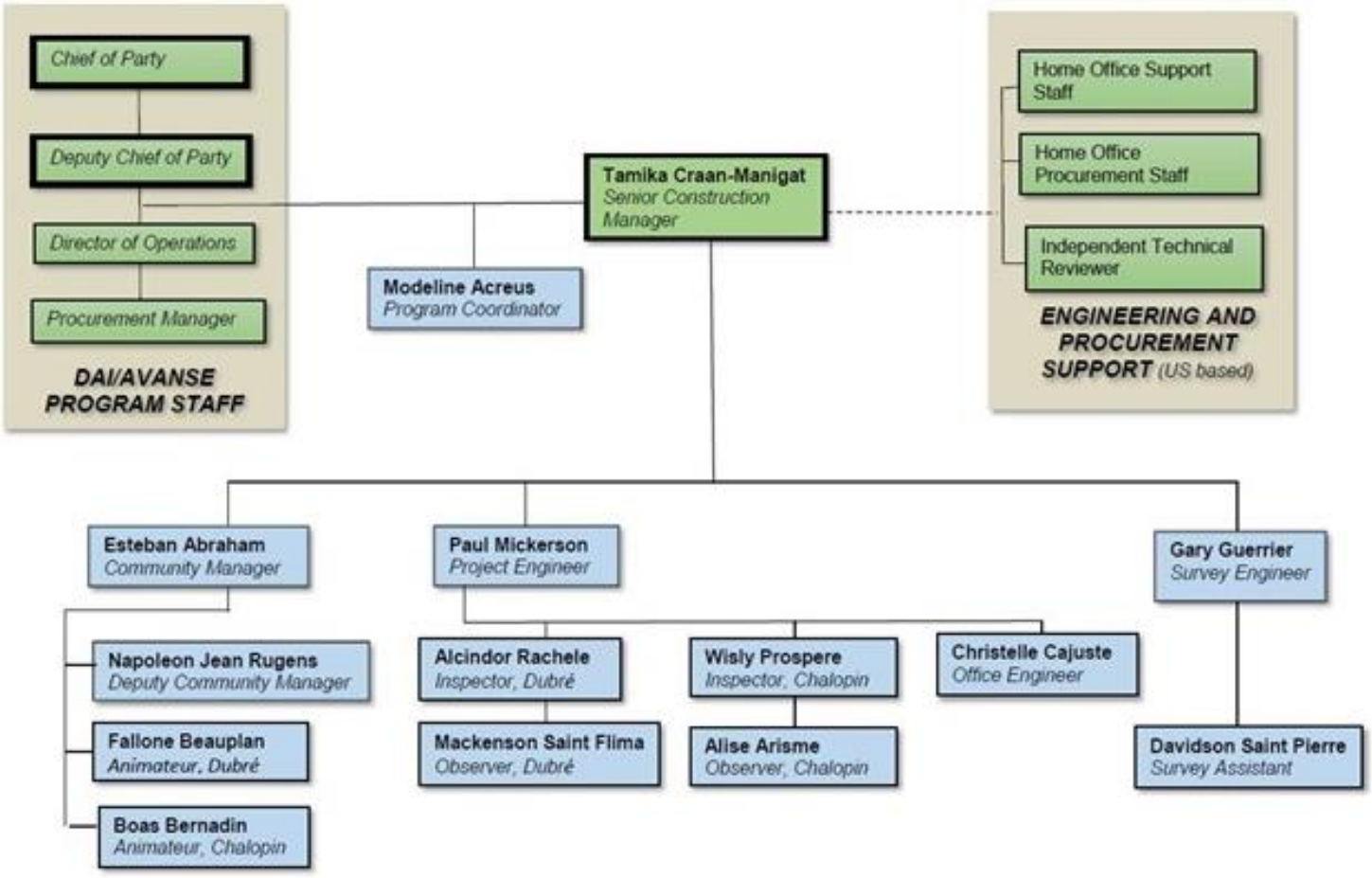
Operations


Macorel Saint-Elien
Chief of Party
Jeffrey Donahue
Director of Operations
Marc Gemain
Program Coordinator
Michaelle Gedeon
Administrative and Logistics Manager
Duval Muscadin
IT Manager
Sandra-Petro Augustin
HR Manager
Bangaly Sylla
Grants, Subcontracts and Procurement Manager
Alain Denis
Finance and Accounting Manager
Laurence Charles
Log & Admin Officer
Nancy Charles
Admin Assistant
Jacques Cesar
Deputy GSP Manager
Jean Reynald Etienne
Senior GSP
Vasty Guerrier
Senior GSP Officer
Patrick Jean-Baptiste
Senior Accountant
Pierre Monius Joseph
Facilities Officer
Jean Robert Saint-Vilma
Motor Pool Supervisor
Nadege Larose
Inventory Specialist
Stephane Remy
Logistics Officer
Joseph Walker
IT Assistant
(Vacant)
HR Officer
Rodeley Jean Louis
Accountant
Lourdes-Miyard Jean Philipe Calixte
GSP Officer
Claudelle Orelus
GSP Officer
Wanda Arisme Gilles
GSP Logistics & Commodity Officer
Huberte Estiverne
GSP Officer
Alexandre Gaston
Accountant
Marion Petit-Maitre
Gate/Facilities Assistant
Léonce Michel
Motor Pool Supervisor Assistant
Carl Jasme
Warehouse Assistant
Housekeepers
Adeline Duromain
Bernise Gedeon
Clotaire Jean Francis
Bercilia Jean
Support Agent
Emmanuel Edmont
Geralda Lauture
HR Specialist
Galine Henry
Finance & Adm Officer
Driver and Mechanics
Claude Augustin
Davilmar Arnold
Eric Theodore
Frantz Dorvil
Escamel St Florin
Jean Robert Desrouilleres
Johnson Jean
Leroy Joseph
Lionel Jean Petion
Mariot Jules
Michel Leonce
Renel Monpoint
Robert Jean
Yves Louis
Yvon Lamerique
James Civil
HR Assistant
Marie-Guerdie Louis-Jeune
Assistant Auditor
Jocelyne Zamor
Finance Assistant

Cross-Cutting



DAI/AVANSE INFRASTRUCTURE GROUP



AVANSE'S APPROACH: FY 2019

AVANSE'S OVERALL APPROACH

The main goals of AVANSE for FY 2019 are 1) to maximize the use of the extra time gained due to the project extension; 2) to ensure that a) all major activities are completed and b) by the end of the project the private sector and the communities have taken ownership of the project activities; 3) to ensure that the various gains made to date are consolidated; and 4) to achieve or exceed its targets.

To achieve these goals, AVANSE's objectives for FY 2019 include:

1. Reorganizing its human resources and focusing activities on the areas of **greatest potential;**
2. **Completing facilities** to ferment cacao, produce chocolate, mill and dry rice, and produce export bananas, and partnering to provide market information and make agricultural equipment more available;
3. Building on the knowledge and experience gained to improve **land and water management**;
4. Improving the **sustainability** of interventions by closer collaboration with all partners;
5. Increasing availability of inputs and service, via **commercial sales,** driven by demand, not subsidies;
6. Continuing to **work with the Haitian government** through the Ministry of Agriculture, Natural Resources, and Rural Development (MARNDR) and other government agencies, as appropriate; and
7. Fine tuning the technology packages, analyzing the results achieved, and disseminating information; **targeting those beneficiaries** most likely to adopt technology packages post-project.

AVANSE's overall implementation approach is summarized below; the expected outcomes and more specific details of how the project will achieve these seven objectives are in the work plan sections that follow.

Reorganizing and focusing resources: The project team has been streamlined, the management has been changed, the responsibility for commercialization has been spread across the value chain teams and within each value chain activities are focused on the areas that have given the best response to date;

Completing facilities and projects in process: Joint ventures are underway with the private sector in rice, cacao, plantain, and bananas to improve the access of the farmers to more profitable markets. The technical advisor's priority in 2019 is the completion of these grant-funded activities.

Improving land and water management: A considerable amount of knowledge has been gained about the behavior of the rivers and the groundwater aquifer. There is an increasing use of pumps for irrigation in the area, and the soil laboratory should be operational in 2019. As FY 2019 starts, one irrigation rehabilitation activity has been approved and another is pending. These two schemes will improve the availability of irrigation water on 571 hectares, and a new well improvement program is targeting at least another 429 ha of plantain production.

Focusing on sustainability: The technologies, new approaches, and systems AVANSE introduced will only persist if demanded by farmers and supplied by the private sector. The project will:

- Increase the specialized trainings for farmers, especially in pest and disease management, irrigation system maintenance, and management of associations and cooperatives;
- Involve and engage the commercial and financial sector to invest in agribusiness;
- Build the management capabilities and capacity of local partner associations, such as the cacao, bananas, and water users' associations; and
- Partner with MARNDR to provide market information, continue collaboration on irrigation projects, and engage with local universities to provide practical training to students.

Increased availability of inputs and services: The improvements AVANSE promotes have to be driven by farmer demand and market choices, and have to be available after the project ends.

- Put more emphasis on analyzing where progress has been slow and implement solutions; and
- Allocate additional resources toward mobilizing the private sector – including providing small grants to a number of smaller entrepreneurs processing, marketing, or providing services.

Maintain our engagement with the Government of Haiti and the private sector: In FY 2019, AVANSE will work closely with MARNDR, increasing their involvement in project activities. Specific activities in FY 2019 include:

- Additional grant support to MARNDR through the *Systeme d'Information sur les Marche Agricole (*SIMA) for the diffusion of market and crop information; and the establishment of a soil testing facility at the *Campus Henri Christophe de Limonade*/University of Haiti (CHCL/UH).
- Continuing and expanding partnerships with all three major cacao buyers/exporters in the Northern Corridor to increase farmers' access to improved planting materials and better markets.

Each value chain now has a designated staff member for marketing, who will play a key role in the development, expansion, and successful implementation of these long-term commercial relationships.

Technology transfer and information sharing: AVANSE has been promoting a number of improved technologies, ranging from pest and disease management and machinery services to new varieties and improved cacao orchard maintenance. Wider acceptance of new technologies requires involving farmers and considering their constraints and goals, which AVANSE will do by quantitative and qualitative field surveys and through focus groups, followed by sharing the knowledge gained.

In 2019, AVANSE plans to continue to refine and disseminate the existing technical packages to meet the needs of commercial farmers. It will partner with the University of Florida on plantain pests and diseases and with the University of Auburn on soil testing, and it will collaborate with the training institutions, MARNDR, and the private sector to share information and continue technology transfer for farmers post-AVANSE.

PROPOSED APPROACHES TO EMPOWERING HAITIAN WOMEN

- **Training & technical assistance along target value chains**: Offer training and learning opportunities for women to enhance their skills and knowledge on all aspects of a value chain from production, to value addition/processing, and marketing and business management. This will introduce women to new technologies, such as labor/time-saving production and processing practices.

- **Leadership and advocacy**: Deliver a Champions for Change leadership course to empower existing female leaders to lead change in their communities, motivating them to organize and train others as well as to advocate for improvements in female access to land, inputs, and finance.
- **Entrepreneurship, business planning, and marketing**: Develop the capacity of female producers, market women (*Ti machann*), and traders (*Madam Sara*) in management and marketing.
- **Learning events:** Co-host and organize learning events that offer women an opportunity to learn about new topics, trends, and technologies in agriculture and to network and establish business linkages.

Table 2 presents AVANSE's menu of activities by the objectives contained in the USG Global Food Security Strategy and the FY 2019 work plan.

Table 2: Summary of FY 2019 Activities

Objective (s)	Activities
Increase the sustainable productivity of all producers	**Training** • Training of trainers for lead farmers on production techniques • Train farmers in cacao rehabilitation/organic production practices • Train in *Plantes Issues de Fragments* (PIF) technology and diseases for plantain farmers • Train in pest and disease control for rice farmers • Provide training to university and agriculture training schools staff and students in *Système Rizicole Intensive* (SRI).
Increase access to and wider adoption of inputs, technologies, and innovations	**Input Supply** • Organize a network of input providers and strengthen the input distribution system • Training of trainers with input suppliers so they can train farmers on the correct use of inputs, (seeds, fertilizers, chemicals) in collaboration with Bon Jaden Lakay • Develop the capacity of COMAG, S.A. and the new network for wholesaling inputs and extension services • Organize agricultural input and equipment fairs. **Agricultural Equipment** • Expand the partnership with Charles Fequiere to increase access to and sales of agricultural equipment • Expand the partnership with HAYTRAC (tractors) for sales and leasing of equipment. **Foundation Seed Production** • Train producers on raising foundation rice seed through *Collectif de Lutte contre l'Exclusion Sociale* (CLES) • Establish seed production centers with networks of trained farmers • Train farmers and water user groups in pump and operation maintenance for irrigation services • Develop water user groups and well diggers to provide irrigation services,
Strengthen resilience	**Irrigation Services and Water User Associations** • Repair and clean wells that can be used for pumping water to rice and plantain farms • Train WUAs in the efficient use of pumps and irrigation management for rice, plantain, and cacao farmers • Supply at least 14 pumps for target communities along surface water sources in seven communes • Sensitize farmers' associations about disaster management.
Expand access to knowledge through extension services	**Extension Services** • Train lead farmers (male and female) in Farmers Field Schools (FFS) to provide technical extension services • Strengthen the ability of the FECCANO and CPFN cooperatives to provide extension services to members.

Objective (s)	Activities
Increase access to finance and business development services	**Business Development Services (BDS)** • Issue an Annual Program Statement (APS) for BDS providers and provide contracts for up to [redacted] • Link cacao cooperatives/associations to financial institutions and get credit based on sales contracts • Pilot program with CPF, WOCCU, Fédération de Levier, and Caisses Populaire to access credit for technology.
Strengthen market systems	**Marketing** • Link producers to market information, *Systeme d'Information sur les Marche Agricole* (SIMA) system • Strengthen partnership with Novella on organic cacao and PISA on fair trade/organic cacao • Strengthen the marketing skills of *Ti machann* and *Madam Saras.*
Improve the quality of produce so that it meets the standards of higher-priced markets	**Post-Harvest Processing** • Train farmers in organic and fair-trade certification • Train farmers and cooperatives in the drying and fermentation of cacao • Improve local milling of paddy rice • Train farmers in the harvesting, storing, handling, and transporting of plantains.
Increase female empowerment and improve livelihoods	**Women's Empowerment** • Increase women's business skills and the income-generating opportunities of female producers, food trainers, and sellers • Train women in business skills and marketing • Link female micro-entrepreneurs to finance and promote the village savings and loan approach.
Increase youth empowerment and improve livelihoods	**Youth Entrepreneurship and Empowerment** • Train young farmers in intensive cacao, plantain, and rice production via Youth Farmer Field Schools and demonstration plots • Train youth in leadership for food security • Train youth in agribusiness and entrepreneurship (farming as a business) via Caseli, a BDS provider • Train youth in value addition and processing skills • Start up a youth business acceleration program via APS/ Broad Agency Announcement (BAA) • Provide start-up kits for youth (seedlings, tools, fertilizer).
Improve organizational performance	**Institutional Capacity Strengthening** • Strengthen the governance, leadership, and management capacity of cacao cooperatives (FECANO, CPCN) • Strengthen capacity of FFS to assume a leadership role post-AVANSE • Strengthen the WUAs to improve management of irrigation sites • Train university and agriculture training schools staff in SRI.

Specific activities are described further in the FY 2019 work plan sections that follow.

IR 1: AGRICULTURAL PRODUCTIVITY INCREASED

OVERALL STRATEGY

AVANSE's strategy to increase the profitability and production of rice, cacao, plantain, and bananas uses four guiding principles within a market-driven approach:

- Engaging local farmers to refine the improved technologies and practices and expand their adoption;
- Encouraging and facilitating improvements in land and water management;
- Continuing the renewed focus on the more commercial-scale producers; and
- Increasing the commercial supply of inputs, services, and marketing options tailored to each crop.

All of AVANSE's technical packages are intended to be profitable and accessible to local farmers, with a focus on the appropriate use of good agricultural practices (GAP). These training packages will be further refined in FY 2019 to help improve farmers' access to modern inputs, services, markets, and market and technical information. AVANSE will incorporate farmers' feedback on their use of modern inputs (plant materials, equipment, tools, fertilizer) and describe a variety of options for improved production, harvesting, and seed multiplication techniques, as well as efficient land and water management practices.

Local authorities are one key conduit to accessing and working with communities. In FY 2019, AVANSE will continue to work with communities and officials on a variety of initiatives such as grant-funded projects; building the capacity of commercial rice, plantain, and cacao producers; and strengthening the capacity of marketing and water management associations.

Haiti's commercial firms have been reluctant to invest in agribusiness, particularly in the north, but changes are slowly occurring. AVANSE plans to work with a variety of finance providers to increase their overall support to agriculture in the north and to engage and partner with more investors to increase commercial agribusiness. AVANSE will use partnerships and grants to encourage these changes.

AVANSE has been investing in the next generation of agronomists by providing field training to students, funding a number of interns to allow them to gain practical hands-on experience, and having AVANSE staff and consultants present workshops and teach at local universities. Those investments in the future will not only continue in 2019, but expand to add plant pest and disease training in partnership with the University of Florida and consultants from Cornell and the International Rice Research Institute (IRRI). Discussions between the Campus Henri Christophe de Limonade/University of Haiti (CHCL/UH), Auburn University, and AVANSE will continue; the goal is to have a functioning and self-sustaining soil laboratory by the end of FY 2019. Options being considered include leasing the facility or developing a management contract to operate the laboratory.

AVANSE has signed a Memorandum of Understanding (MOU) with local MARNDR officials that defines areas of collaboration, roles, and responsibilities. In FY 2019, activities planned with MARNDR include conducting joint training sessions with the recently recruited *Bureaux Agricoles Communaux* (BAC) technical staff; signing a joint MOU with the European Union, Digicel, and the Ministry, which will continue grant support to make operational and expand the MARNDR Market Information System (MIS) to cover the whole country; and partnering with MARNDR and the water user associations on the joint implementation of land and water management works at Dubre and Chalopin to ensure sustainability.

SUB-IR 1.1: KNOWLEDGE AND AVAILABILITY OF IMPROVED TECHNOLOGIES AND SYSTEMS INCREASED

Intensifying crop production is one route to increasing agricultural incomes, and the use of improved technologies can augment yields. AVANSE is working with farmers, input suppliers, and micro-finance organizations to increase farmers' access to quality inputs, and encourages investment by farmers and suppliers to build and expand agribusiness systems and increase the supply of goods and services.

AVANSE has already tested and promoted a range of improved technologies for each of its value chains. In preparation for the final report, a series of studies and focus groups will determine why certain technologies are not being applied by all the farmers and what their main constraints to adopting technologies are. An example is the limited adoption of mechanical weeders by AVANSE rice farmers, which appears to be related to problems with heavier soils and the availability of water at the time of weeding. Improved types will be tested in 2019.

Table 3: The Main Technologies AVANSE Will Promote in FY 2019

Technologies	Details
RICE (SRI)	
Improved nursery techniques	Use of selected seeds. Pre-germination, utilization of smaller quantities of seed and water
Higher performing rice varieties	Utilization of new varieties other than *Jaragua* and *Jouma*. Evaluation of new lines in collaboration with universities, ministry, and farmers. Seed production of these new varieties by farmers
Transplanting dates and densities	Using young rice plants (8 to 12 days old for SRI as opposed to 20 or more days for unimproved) with far fewer seedlings per hole and a regular 25 cm x 25 cm spacing
Optimal weed control	Local production of prototype rotary and other weeder design for testing and evaluation
Fertilization	Reduced fertilizer use and optimum timing (nitrogen phosphorus potassium, (NPK), urea, and di-ammonium phosphate (DAP))
CACAO	
Trimming of shade trees and pruning of cacao	Trimming shade trees and pruning of cacao optimizes and stimulates growth, reduces competition between trees, helps manage pests, increases flowering, and boosts cacao production
Improved nurseries and grafting	Progressive regeneration/replacement of older cacao plantations. Propagation of the most productive material from clonal gardens and super trees improves productivity
Improved plantation techniques and plant densities	Combination of improved cacao seedlings with temporary shade crops like plantain to generate short-term income. Higher plant densities and improved harvesting and drying
PLANTAIN	
Cover, intercrops, and mulches	Use of mulch, fast growing cash crops, or Mucuna/Canavalia for improved weed control
Production of healthy suckers via Plants Issued from Fragments (PIF)	Training in PIF methods and encouraging farmer-level production of PIF plants. Encouraging best practices, before planting in the nursery, trimming suckers to produce multiple plants and reduce pests and diseases
Plantation techniques	Optimal densities, and pruning for better humidity control and *sigatoka* management
Control of diseases (*Sigatoka* and *Erwinia*) and pests	Elimination of affected leaves and improved water management to reduce disease spread and manage snails. Use of IPM and GAP
Water management at the plot	Additional irrigation and use of cover crops, drainage, and mulch
Mechanical weeders	Reduced labor management cost for weeding
Fertilization	Appropriate use and timing of manure, compost, and chemical fertilizers
LAND AND WATER MANAGEMENT	
Better water control and reduction of losses	Rehabilitation of irrigation systems at Dubre and Chalopin followed by improved WUAs management and maintenance of their irrigation systems
Pumping and well repair	Installation of pumps on rehabilitated wells and river banks
Community engagement	Small grants to enable communities to better manage their land, water, and environment

Specific activities to make all these technologies available to farmers are described below. Extension and training materials will be produced in a format appropriate to the audience and distributed by AVANSE.

RICE VALUE CHAIN

More intensified commercial rice production is one route to increased agricultural incomes for Haiti's rice farmers. AVANSE has been working with farmers, associations, input suppliers, service providers, and micro-finance organizations to increase the rice farmers' access to quality inputs and services. To ensure the sustainability of these activities, in FY 2019 AVANSE will be encouraging investment by both farmers and suppliers to build and expand the agribusiness systems that supply goods and services.

Table 4: Summary of AVANSE's Technical Approach in 2019: Rice

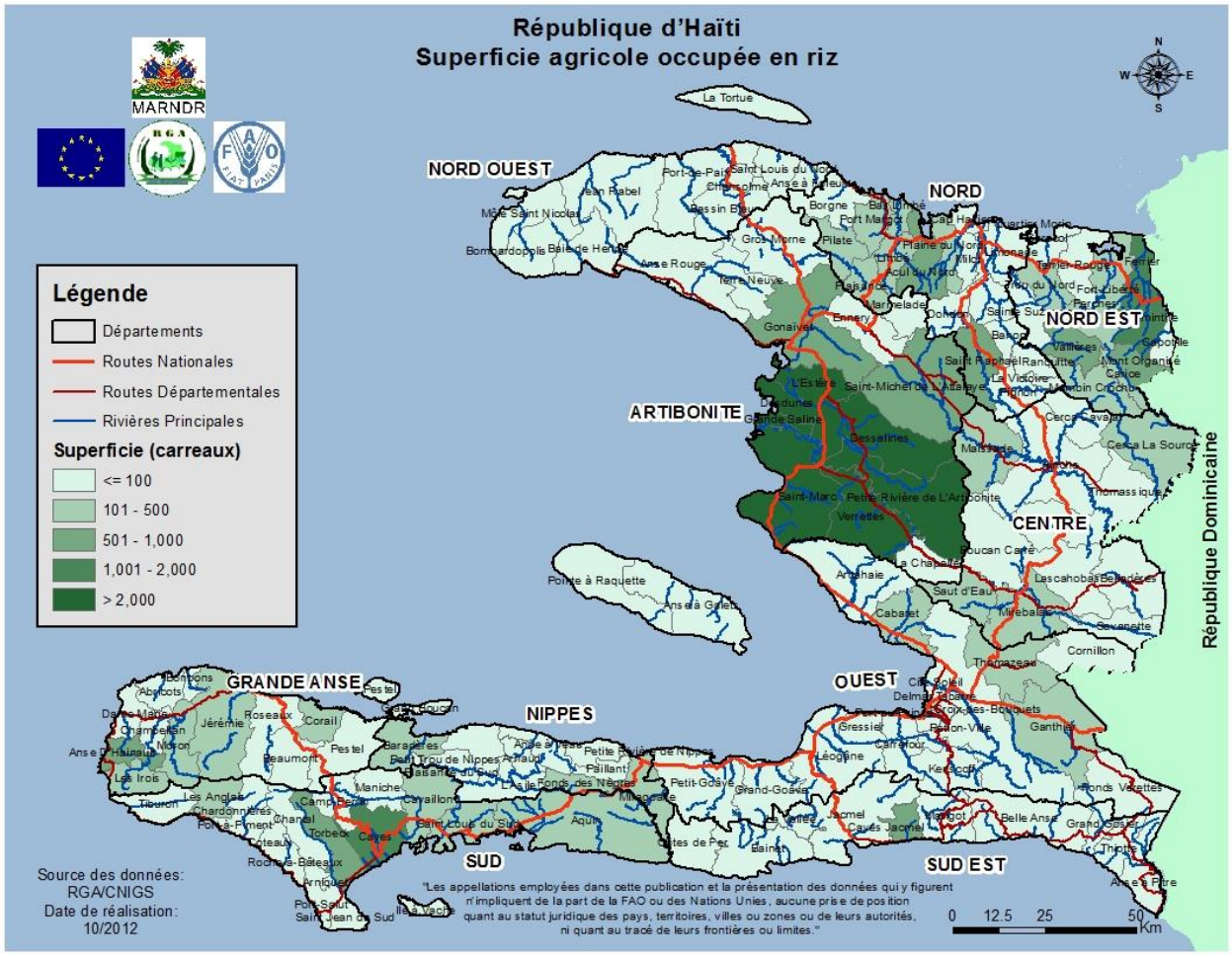
Planting Seasons	January, May, August (very dependent on rains and the availability of water)
Critical Gaps	• Limited availability of water control in the rice growing perimeters • Planting density and broadcasting makes weed management difficult • Limited availability of labor for transplanting and weeding • Two stage milling = lower quality rice
Key Aspects of the AVANSE Technical Approach: Production	• Working with the Water Users' Associations: Dubre and Chalopin *Intensive Rice-Planting System (SRI)* • Higher yields, reduced input use, and improved weed and water control • Nursery in dry conditions, early transplanting of plants at two-leaf stage (<10-12 days), defined spacing (25 x 25 cm), earlier weeding, and alternating irrigation/drainage all use less water *Improved Rice System (SRA)* • For farmers with limited water control • Transplanting at 20 days, then the same practices as the SRI system
Key Aspects of the AVANSE Approach: Marketing	• Facilitate improved milling and drying, improving local rice quality • Forward contracting: link farmers' groups to local rice mills to expand local market share • Organize producer: in particular locations to achieve commercially viable volumes and allow better land management and service provision
Targeted Zones	• Dubré, Fort-Liberté - Bayaha (Chalopin, Coicou), Ounaminthe - Ferrier (Haut Maribahoux, Bas Maribaroux). Grison-Garde réhabilitation cancelled

AVANSE has promoted a number of improved technologies for rice, based on SRI, and the adoption of these SRI practices has increased farmers' rice yields. However, adoption is not complete, and while farmers are moving away from traditional practices, many use only modified partial versions of SRI or SRA, which is nonetheless an improvement over the traditional rice system. The adoption of machinery by rice farmers has been slow due to both financial constraints and the adaptability of the machines to local practices. In FY 2019, a consultant will work with the rice value chain team on understanding farmers' constraints to adoption of all these improved technologies. Areas with low adoption rates will be chosen to selectively demonstrate the SRI approach.

A survey across the rice growing areas of the north and northeast found only 22 percent of the farmers had adopted all five of the activities recommended by AVANSE (Table 3); while the majority (68 percent) adopted some of the recommended practices, a minority (10 percent) adopted none of the practices in the SRI system (Table 5). At Ferrier, where the adoption rate is lowest, it appears this is due to a combination of a lack of control over the volume and timing of the irrigation water and the lack of available labor in the field at the right time. They direct seed, so they do not set up a nursery or have to transplant after sowing the nursery, avoiding operations that require transplanting labor and better control of the availability of irrigation water.

Table 5: Adoption Rates of New Rice Technology by Location

	Dubré	Grison-Garde	Ferrier	Fort-Liberté	Ouanaminthe	Mean
SRI	40 percent	25 percent	10 percent	10 percent	25 percent	22 percent
SRA	**60 percent**	**60 percent**	**70 percent**	**80 percent**	**70 percent**	**68 percent**
Système Rizicole Traditionnel (SRT)	0 percent	15 percent	20 percent	10 percent	5 percent	10 percent



SRI: Intensive Rice Farming System, SRA: Improved Rice Farming System, SRT: Traditional Rice System

Figure 2: Rice Growing Areas in Haiti

Demonstration, experimentation, and adaptation to local conditions of the various labor saving practices and machines will continue in collaboration with local suppliers and manufacturer working through the Farmer Field Schools. Table 6 summarizes those activities. A study on adoption, distribution, and spread of SRI will be done in Q1 and Q2 (Activity 1.2.1). The dialogue between project staff and farmers will be expanded to determine exactly why the various technologies are not being applied by more farmers.

Table 6: Improved Rice Technologies Being Supported in FY 2019

Technologies Supported	Main Details
LAND AND WATER MANAGEMENT	
Better water control and reduction of losses	Rehabilitation of irrigation and drainage followed by WUAs and improved irrigation/water management systems. Plot-level water management
RICE (SRI)	
1. Improved nursery techniques	Use of selected improved seeds. Pre-germination, reduced water use in nurseries. Utilization of smaller seed quantities
2. Higher performing rice varieties	Utilization of new varieties other than *Jaragua* and *Jouma*, seed saving by farmers. Evaluation of new lines in collaboration with the ICDF, ministry, and farmers
3. Transplanting dates and densities	Using young rice plants (8 to 12 days old for SRI as opposed to 20 days for unimproved) with fewer seedlings per hole and a regular 25 cm x 25 cm spacing
4. Optimal weed control	Local production of prototype rotary and other weeders for testing and evaluation
5. Fertilization	Reduced total fertilizer use and optimum timing (nitrogen phosphorus potassium, (NPK), urea, and di-ammonium phosphate (DAP))

AVANSE's rice technology activities build and expand on what is working already to help more farmers achieve the potential of higher yields. Even with its generally higher yields, lower water requirements, and its economical use of inputs, SRI is still not universally adopted. There are a variety of factors influencing adoption, which include household versus hired labor, water control, timely tillage, and weeding costs.

Objectives

In FY2019, AVANSE's extension messages will be fine-tuned to encourage greater adoption of improved rice technologies, increased water management, and improved timing of field operations. The project will also continue to facilitate better access to local inputs/services and more advantageous markets to help more rice farmers to increase their revenues. This year, AVANSE will continue to work with lead farmers, local agribusinesses, associations, and MARNDR to build on its successes to date, with a renewed emphasis on sustainability, working with producer groups and WUAs, linking rice producers to markets, and continuing grant support to a local rice mill to leverage private funds for processing.

Challenges to Success and Opportunities for Action

The inaccessibility of many rice-growing locations, especially during the rainy season, makes extension, mechanized activities, and marketing difficult.

Delays in approval (Dubre and Chalopin) and cancellations of the planned irrigation system rehabilitations program (Grison-Garde, Bas Limbe, Ferrier) have made all these communities distrustful of AVANSE staff and more difficult to work with. In FY 2019, a more participatory approach will be taken. Engagement with the community and the use of the community grants program may improve relations. Drought was a real challenge to rice production in 2018, and that constraint is likely to continue.

Lack of coordination between the production and marketing parts of the project has been addressed by embedding IR 3 staff directly within the value chain teams.

1.1.1: Support to Rice Value Chain Through FFS, the Government, Associations, and the Private Sector

- Extension of improved technologies via associations, the private sector, the government, and FFS
- Farmers trained in pest and disease management, seed production, farm accounting, and agribusiness management

1.2.1: Building Local Understanding of SRI Among Farmers, the Agricultural Ministry and Students

- The good agricultural practices used by SRI/SRA for rice production and the principles are understood by a wide range of individuals
- Appropriate communication materials are available to a wide range of audiences

1.2.2: Integrated Production–Marketing: Increased Knowledge for Decision Making

- The Collectif de Lutte Contre l'Exclusion Sociale (CLES) completes its building and installs modernized milling, drying, and storage equipment
- The capacity of the Dubré and Chalopin Irrigation Associations is built and made sustainable (fee for service)
- An in-depth understanding of SRI adoption, farmers' decision-making, bottlenecks, and how it improved their livelihoods (impact)

1.3.1: Increasing the Sales and Use of Improved Inputs and Services

- Input stores and suppliers linked with farmers, so they can continue to respond to farmers' changing needs
- Input stores organized so they can bulk purchase quality products (especially fertilizer)
- Local access and knowledge of agricultural inputs and equipment (seed varieties, fertilizers, pumps, weeders, cultivators, threshers, etc.) improved
- Access to financial services for farmers improved (also see IR 3)

Figure 3: Objectives & Activities Planned for FY 2019: Rice

Figure 4: Drought Conditions in Rice Fields: Ounaminthe, Haiti, August 2018

SUB-IR 1.1: KNOWLEDGE AND AVAILABILITY OF IMPROVED PRODUCTION TECHNOLOGIES AND SYSTEMS INCREASED: RICE

AVANSE centers its rice production activities around FFS training sessions, with ten field technicians demonstrating improved techniques. The AVANSE staff help farmers implement these improved techniques directly on their own plots, this year assisted by farmers chosen from each field school to act as lead farmers to mentor and support the other farmers in the area. The technical content of the SRI package is being fine-tuned to match specific needs of the farmers, and to improve its profitability. In this final year, the emphasis on rice quality and improved marketing will increase, and the expanded use of improved post-harvest technology, such as moisture meters and threshers will be encouraged.

The marketing staff on the Rice Team will work closely with the suppliers of goods and services to increase the sustainable supply of improved inputs, including rice seed produced by AVANSE farmers. The Rice Team plans to continue to expand the number of FFS in those zones where they are already established (Fort-Libérté, Ouanaminthe, Ferrier, Grison-Garde) but the main SRI activities in FY 2019 will be in Dubré and Chalopin. The goal is to have 60 new FFS operational this year.

Activity 1.1.1: Support to the Rice Value Chain through FFS, the Government, Associations, and the Private Sector

Output 1.1.1a: Extension of improved technologies to Haitian rice farmers

Extension of improved production technologies via the FFS

At the beginning of each campaign, new producers that wish to participate in AVANSE's activities are identified and registered, and then grouped with as many as 20 other local farmers to form a FFS. The FFS serves as a mechanism to disseminate technical instructions and demonstrate improved

technologies. Sustainability is improved by the integration of unpaid farmer leaders into the extension activities.

Training of farmer leaders on rice extension and monitoring

The strategy of working closely with a farmer leader from each FFS during the campaigns, and ensuring that s/he understands the rationale for the various aspects of the technical application of SRI and SRA techniques will continue. Refresher sessions are planned for those leaders already trained by the project, to build understanding and consolidate their knowledge, ensuring local capacity is built for sustainability.

Output 1.1.1b: Farmers trained in pest and disease management, seed production, farm accounting, and agribusiness management

Developing local capacity in appropriate pest and disease management

A consultant is working with the rice team using quantitative and qualitative survey methods and focus groups to evaluate the current adoption rates and/or the local adaptation of SRI techniques. Transects across the irrigated perimeters will be used to identify the major pests and diseases and their current counter measures. In FY 2019, another consultant will look at the current status of the apple snails, rats, and other pests attacking the rice fields and suggest appropriate control methods.

Increasing the local availability of appropriate seeds

Initially, to ensure the adoption and implementation of the SRI technical package, imported rice seeds were donated to farmers. Last year, a group of farmers were trained to produce seed, and a private sector partner (CLES) cleaned, packaged, and sold the seed that was produced. Five farmers produced and sold two metric tons of seeds. A sustainable system that can provide the Northern Region with sufficient volumes of quality seed of the adapted varieties in demand in the north is being developed in collaboration with government researchers and the ICDF rice breeders.

If the region is to stay ahead of pest and disease pressure and reduce the reliance on imported varieties, one possibility is to get good quality basic seed of preferred varieties and ask the ICDF researchers in Artibonite to do mass selection, thereby making improved local seed available in the Northern Corridor. AVANSE intends to support another potential source of quality seed locally by engaging CLES to organize farmer seed production and distribution.

Helping farmers to track costs, revenues, and margins

The farmer survey planned for Q2 FY 2019 will identify the rate of adoption of individual SRI practices and link this to economic parameters. AVANSE will work with farmers in focus groups to examine the causes for the wide variations between the returns that individual farmers get from their efforts. Farmers will be trained to understand exactly how their yields, returns, and costs differ from their neighbors and what changes they can make to improve their profitability, plus how they can track and monitor their production costs, revenues, and margins.

SUB-IR 1.2: STRENGTHENED EXTENSION OF AGRICULTURAL TECHNOLOGIES: RICE

Activity 1.2.1: Building Local Understanding of SRI among Farmers, the Agricultural Ministry Staff, and Students

In 2010, the SRI approach to rice production was officially introduced to Haiti through an agricultural development project funded by USAID. Since then, its adoption has been slow, partly because a national implementation strategy and methodology to share the knowledge has been lacking. In 2019, AVANSE will continue to share information and train potential future trainers in the SRI methodology.

Output 1.2.1a: An in-depth understanding of SRI adoption and farmers' decisions

Spread of SRI

A review and survey of the improved rice production practices promoted by AVANSE will be designed in Q1 of FY 2019 with the help of a consultant; the information collected will provide an in-depth understanding of adoption, farmers' decision-making, and bottlenecks and enable a quantitative and qualitative evaluation of how the technologies have improved the livelihoods of farmers. The consultant and the Rice Team will design the overall study and identify key questions. The consultant will train the survey team, which will consist of rice field staff and M&E staff, as well as participate in the focus groups and the qualitative study, contribute to the analysis, and help the AVANSE team write up the study.

Design of study took place in November 2018 (qualitative field work to identify/refine the key questions and working with the study team to design the study). Study implementation will occur from January to June. Analysis and use of the study results in technical materials/communication outputs will be from July to December.

Output 1.2.1b: Appropriate materials available for various audiences

Technical communication materials

A consultant will work with the Rice Team and a communications firm to design and print a range of training materials for technicians and farmers. Potential topics include an overview of SRI and other improved rice production practices, and more detailed technical guidelines and information sheets on topics such as apple snail and rat control, weed control, seed varieties, organic matter management, etc.

Output 1.2.1c: SRI/SRA technologies are widely understood

Training of trainers

For five years, AVANSE has been popularizing the SRI system with local agronomists in the north and northeast who now understand and are trained in the application of this technology. Presentations have been made on SRI to students at the Don Bosco agricultural technical school, and more detailed presentations followed by field visits were also conducted for agronomy students or the University of Limonade. In FY 2019, working with six faculties of agronomy and four technical schools, and the government extension agents, AVANSE will share SRI extension strategies with farmers, the ministry, and universities. A number of presentations on various aspects of SRI will also be developed. These activities will help ensure a broader understanding of the techniques and contribute to their sustainability.

Activity 1.2.2: Integrated Production and Marketing: Increased Knowledge for Decision Making

Since 2014, AVANSE has improved rice production in two communes in the north, Plaine du Nord and Acul du Nord, and three communes in the northeast, Ouanaminthe, Ferrier, and Fort Liberté.

The potential rice production from the more than 6,000 rice producers that AVANSE has worked with in this time is approximately 37,000 ton. Further increases in rice production are possible if water is available for a second crop; a ratoon crop is possible with only limited additional costs.

Output 1.2.2a: CLES completes its building and installs modernized milling, drying, and storage equipment

CLES has been collaborating closely with AVANSE to build the rice value chain in Northern Haiti, collaborating to jointly implement activities such as the delivery of small-scale plowing services to farmers through the voucher program, and the packaging and marketing of rice seeds to producers. AVANSE has already signed a public-private partnership (PPP) with CLES that will enable it to expand its

services to farmers. While fulfilling an aggregation/processing/marketing role through its expanded milling and end-market sales operations supported by AVANSE, CLES also plans to offer farmers in the northeast a "package" of production services that includes input provision, operational credit, and tillage services and intends to continue to provide this technical support to rice farmers after the end of the AVANSE project.

AVANSE has provided grant funding for the acquisition of rice drying and milling equipment, which once installed will allow CLES to expand its purchases of paddy rice from the farmers in the northeast. This includes a significant share of the increased rice production expected from Chalopin, once AVANSE has rehabilitated the irrigation system there.

The original intent was that CLES would modify the existing building that contains the old mills to accommodate new mills and drying equipment. CLES was subsequently realized that the time required to make these structural changes would mean that the old milling equipment would not be operating for an extended period of time, so it was decided that a completely new building was required for the new equipment, and construction began, funded and managed entirely by the grantee. A site visit raised some concerns about the lack of detailed drawings and specifications, the quality of the construction, and the absence of qualified on-site supervision. AVANSE decided on two steps to ensure the new construction met some minimum standards: inspection of the partially completed building and funding the costs of a design with complete specifications and drawings. The agreement was modified to add these unforeseen costs.

At the same time, CLES is exploring ways to get additional financing to ensure the new building is built to an acceptable standard. The *Banque de la République d'Haïti* (BRH) has announced a line of credit earmarked for agriculture. The BRH will be providing funding to: banks and credit unions at an interest rate of 1-2 percent. Banks can then make loans up to $4 million at a maximum interest rate of 6 percent. The short term financial advisor is analyzing CLES's business plan and accounts and will make specific recommendations in Q2 on the various options for accessing additional funding for the completion of the construction. In the meantime, CLES has met with the Center for Support and Services for Local and International Businesses (CASELI) to explore sources of private sector financing.

These additional investments by AVANSE and CLES will help to ensure that after the project ends, the rice production and marketing will continue to be supported by local businesses. They should also enable AVANSE to reach its agribusiness and private sector investment targets by the end of the project in December 2019.

Table 7: Promoting the Marketing of Rice

Market Segment	Upgrading Strategy	Results	Goals of Activity/Partnership	Potential Partners
Fair Trade rice for export markets	• Improve quality of rice production by farmers through improved post-harvest practices (rice drying, humidity control, and processing) for direct sales to more sophisticated markets • Market specification: milled rice	Quality premiums to producers	• Organize production • Certify the supply chain in fair trade (not needed for local markets) • Improve post-harvest equipment • Improve processing facilities (grants) of existing entities • Develop market linkage with existing processors and distributors in North	• Producer associations: Association des Irrigants Dubre (AID), Mouvement des Agriculteurs de la plaine du Maribaroux (MAPLAM), Association des Irrigants de Grison-Garde (AIGG), etc. • Processors: CLES, etc. • Export buyers: TBD
Local markets: hotels, supermarkets, and Caracol				Local distributor: REBO
Local markets	• Structure paddy rice production and build partnership with local buyer/processors • Market specification: paddy rice	Reduced rice payment delays to producers by buyers	• Organize producers for direct sales (paddy rice) to buyer • Identify purchasing units in collaboration with private sector partner	CLES/PSF

Output 1.2.2b: Dubré and Chalopin WUAs operating sustainably

In 2017 and 2018, AVANSE worked with the Grison-Garde, Dubre, and Chalopin Water Users Associations to improve their technical, organizational, and financial capacity to operate their irrigation perimeters. In collaboration with MARNDR, the Chalopin WUA was legally registered. Written commitments to engage in fee collection and operations and maintenance (O&M) were received from the Dubre and Chalopin WUAs (the only irrigation structures in the revised contract).

During the rehabilitation work in FY 2019, O&M manuals will be produced for the two irrigation systems and used as a training guide for the irrigation associations. preliminary annual costs for O&M have been estimated; these costs will be updated and included in the O&M Plans. User fee levels sufficient to cover all the recurrent costs and also to accumulate resources for unplanned interventions will be calculated.

As the WUA training is being planned, the AVANSE team will be working closely with the MARNDR staff responsible for the Dubre and Chalopin perimeters prepare the training materials and include them in the trainings. AVANSE and the ministry will develop plans and procedures that will include scheduling periodic visits by MARNDR to assist the WUAs in managing and maintaining these rehabilitated systems.

The current mill at Dubre is inefficient and so its ability to generate profits that can be reinvested into maintenance is limited. In FY 2019, AVANSE will work with the Committee of the Dubre Irrigation

Association (AID) to ensure they improve their management of the mill. Activities will include developing written procedures for operating the mill and tracking rice flow (both volumes and costs) from its reception at the mill through its processing and selling to clients, building the association's capacity in financial management, and setting up internal control systems to ensure that funds are used according to defined standards.

At Chalopin, AVANSE will work with rice marketing groups and use an in-kind grant program to fund community-level improvements in the rice value chain. This will include evaluating the small local mills and considering the region's dry storage needs.

Specific O&M training will be provided to the WUAs that operate the Dubre and Chalopin systems. Training topics will include:

- Managing and scheduling irrigation rotations and water deliveries;
- Authorities and responsibilities of irrigation association officers;
- Water conservation and record keeping; and
- Annual maintenance requirements and reserving funds for extra-ordinary maintenance.

SUB-IR 1.3: ACCESS TO INPUTS INCREASED: RICE

Activity 1.3.1: Increasing Use of Improved Inputs and Services

Since 2014, AVANSE has been working through local producers and input suppliers to promote the use of high-quality inputs across the Northern Corridor. Applied correctly, fertilizer use, plowing, irrigation and weeding allow rice farmers to increase their net incomes. AVANSE's support to improve producers' access to inputs and agricultural services will continue in FY 2019, and the focus of that program is on:

- Increased linkages between private firms and farmers via the Farmer Field School (FFS);
- Building the capacity of local firms that have delivered good quality products and services; and
- Private sector partnerships to help develop the input and equipment supply chain in the north.

Output 1.3.1a: Input stores have their capacity built and are organized together so they can purchase quality products (especially fertilizer) in bulk to sell to farmers

For three years, AVANSE has been partnering with local agricultural input stores, assisting them to improve their facilities and expand their sales. In 2019, this collaboration will continue as the input stores and AVANSE create a network of input stores in the north able to purchase inputs in bulk and thus reduce their costs. AVANSE will also build partnerships to ensure an adequate supply of improved seed, fertilizer, agrochemicals, tractor services, credit, technology, extension services, and processing.

During FY 2019, input store owners will be invited to agricultural fairs organized by AVANSE so they can present their goods, stay in touch with farmers' demands, and plan their input purchases. AVANSE will also include input store staff in the technical trainings organized under IR 1.2.1 so that they are better equipped to provide advice to farmers after AVANSE ends.

AVANSE will continue to monitor its input store partners for compliance with environmental norms regarding input storage and handling, as well as providing supplemental training on inventory control, financial management, and accounting.

Output 1.3.1b: Knowledge of and access to agricultural technology improved

To help address the lack of a formal supply chain in the north and the limited technical support to purchasers on operating and maintaining agricultural equipment, AVANSE is using grants to assist

suppliers to sell their equipment to producers at a subsidized price. Farmers are expected to contribute 40 percent.

The program is demand-based, driven by the farmers' choices, and are open to individual farmers as well as producers' associations. Eligibility criteria are simple and cover minimum requirements that will allow farmers to maximize equipment use and profit from their investment; criteria include having access to adequate water for subsidized pumps and sufficient land for certain equipment. The AVANSE team will encourage the farmers and producers' associations who acquire subsidized equipment to sell services to other farmers to help to make their investment profitable and maximize their benefits. The value chain staff will work with the Communications Team to inform farmers about the subsidy program. Key messages will be defined by the Value Chain Team and transmitted to farmers.

The focus for FY 2019 will be on the provision of service to rice farmers through two main activities: 1) access to subsidized equipment for rice producer associations and larger farmers; and 2) the partnership between CLES, PSF, S.A., HAYTRAC, and AVANSE, which will not only facilitate farmers' access to tractors, but will also improve the capacity of operators to provide tillage services.

Output 1.3.1c: Access to financial services for farmers improved (see IR 3 3.5.2c)

In FY 2018, AVANSE collaborated with the World Council of Credit Unions (WOCCUs) *"Finance pour tous"* program and the microcredit institution *Federation Le Levier,* helping them to present their financial services to rice farmers. AVANSE and WOCCU are discussing a plan to support their expansion to other areas in AVANSE intervention zones in FY 2019. The pilot has been limited so far because of a lack of motorcycles. As of January 2019, AVANSE will be supporting the expansion of this technology to other credit unions (*caisses populare* such as CPD, KPTAT, etc.) to increase its impact.

Rice farmers will also have better access to operational credit to finance their upcoming campaigns through AVANSE's partners, CLES and *Production sans Frontières* (PSF), S.A. In FY 2019, AVANSE and CLES are jointly investing in a modern plant for rice processing in Ounaminthe, and as part of their plan to increase farmers' loyalty, CLES/PSF plans to offer credit facilities to farmers.

Table 8: Rice Activity Budget

Activities (Rice)	**FY 2019** Estimated Budget
Rice production support: material inputs, testing tillage, etc.	[redacted]
Rice production support: training and FFS support	
Training in pest and disease management and other topics	
Rice tillage, fertilizer, machinery subsidy program (grant)	
Building local capacity in SRI	
Rice water user interventions (outside irrigation budget)	
Total	

Table 9: Rice: Activities/Results/Verification

Main Activity	Output/Result	Means of Verification
Extension via associations, the private sector, the government, and FFS of improved technologies to rice farmers	Producers, boutique owners, government staff, and association officials trained or retrained	• Training participation sheets • Reports • Adoption rate of technologies
Farmers trained in pest and disease management, seed production, farm accounting, and agribusiness management	Extension training given to a minimum of 1,000 farmers in the SRI and SRA systems	• Attendance sheets for specific trainings • Extension agents' monthly reports • Special reports and surveys
The technologies used by SRI/SRA for rice production and the principals are understood by a wide range of individuals	Universities and schools of agricultural technology and BAC trained in SRI/SRA, 1,000 students participate	• Participant lists and survey sheet
Appropriate communication materials are available to a wide range of audiences	Technical information broadly disseminated	• Spot checks
CLES completes its building and installs modernized milling, drying, and storage equipment	Increased access to a value-added market for 1,923 new farmers per season; farmers become members of CLES' network and minority owners; increased revenue to rice farmers; producers' incomes increase by 31 percent; creation of about 19 new full-time jobs	• Grant reports • CLES accounts • Reports from the rice associations • Special surveys
The capacity of the Dubré and Chalopin Irrigation Associations built and made sustainable (fees for services)	Improved water management of the rehabilitated systems; capacity of associations to sustainably manage the system improved	• Technical reports • Systems operating successfully
An in-depth understanding of SRI adoption, farmers' decision-making, bottlenecks, and how SRI improved their livelihoods (impact)	Information available to design new program; farmers adjusting their practices to circumstances	• Report on SRI/SRA adoption and adaptation
Input stores and suppliers linked with farmers so they can continue to respond to changing needs	Quality seed of appropriate varieties available to growers, whether produced in farmers' fields or commercially	• MARNDR certificate of approval • Field surveys
Input stores organized so they can bulk purchase quality products (especially fertilizer) to sell to farmers	Quality inputs available at competitive prices close to the production areas	• Sales records • Increased use of inputs
Local access and knowledge of agricultural inputs and equipment, seed varieties, fertilizers, pumps, weeders, cultivators, threshers, etc. improved	Appropriate weeders, tillage equipment for small-scale rice available locally	• Sales records • Adoption of new equipment
Access to financial services for farmers improved (see IR 3)		

CACAO VALUE CHAIN

AVANSE has intervened in the cacao value chain in two main areas: 1) activities to increase cacao production with a target area of 11,500 ha; and 2) activities to improve the incomes of AVANSE's cacao producers by improving the quality of their cacao and providing access to better markets.

Given that Haiti's average yields are still below regional averages and that the market demand for quality cacao beans is increasing, the project will continue to work with Haiti's cacao farmers on increasing both the quantity and the quality of their production. These increases are driven by better germplasm

and improved crop management, combined with improved post-harvest handling to increase the commercial quality of their cacao. Organizing local producers into groups and certifying their cacao enables them to consolidate sales volumes and benefit from enhanced purchase prices. Supporting local fermentation by exporters allows more farmers to benefit from the higher prices for fermented cacao.

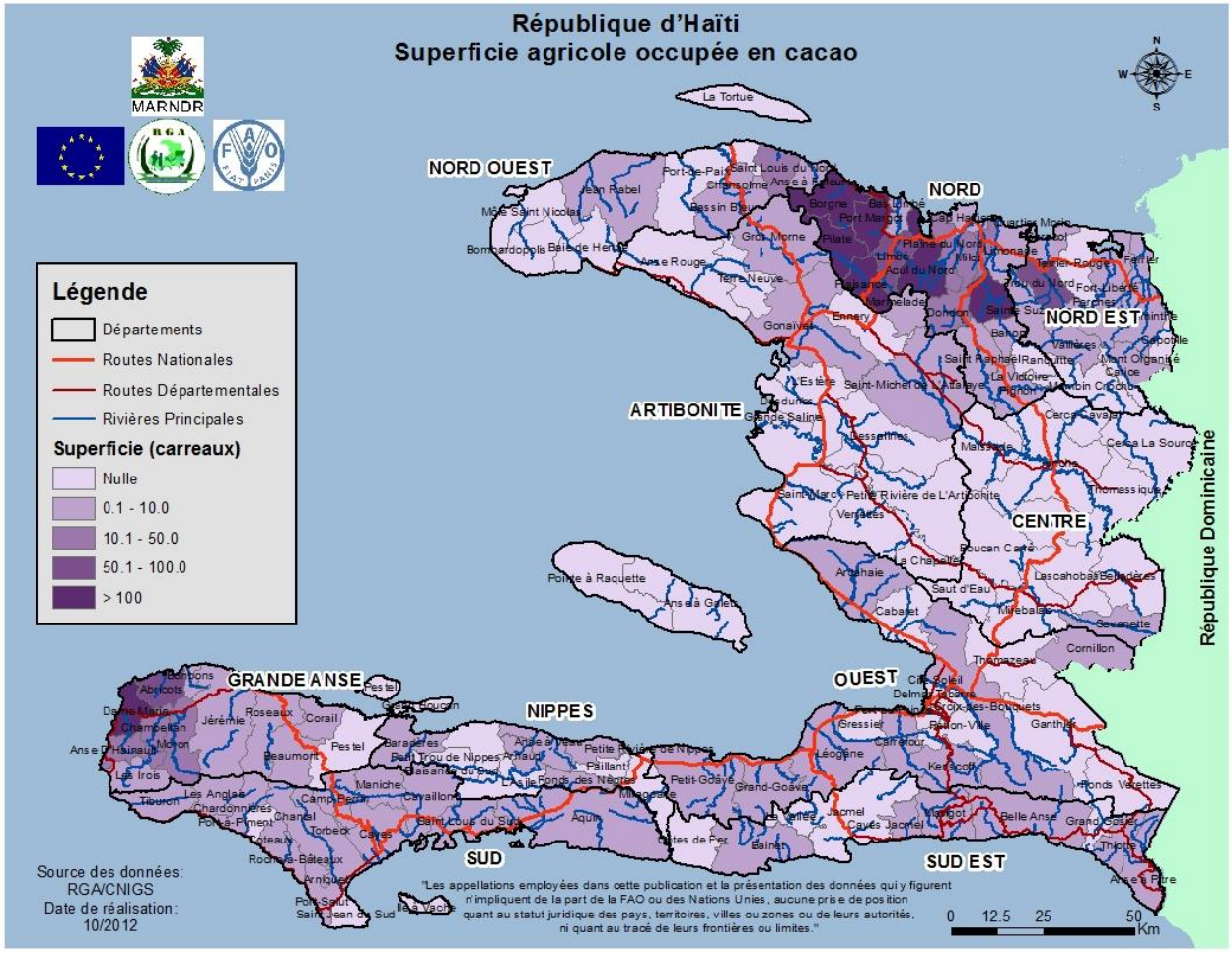


Figure 5: Cacao Growing Areas in Haiti

AVANSE engaged in discussions of the 2019 cacao activities with its private sector partners (Novella, PISA, Agrotech, Agrimex, and the Chamber of Commerce), with producers' organizations (the Federation of Northern Cacao Cooperatives – FECCANO – and the Cooperative of Cacao Producers in the North – CPCN – as well as non-governmental organizations (NGOs), the *Directions Départementales Agricoles* (DDAs), and the *Bureaux Agricoles Communaux* (BACs) from the 15 communes where AVANSE is working.

Table 10: Summary of AVANSE's Technical Approach in 2019: Cacao

Critical Gaps	• Local availability of high yielding planting materials • New plantations have a significant lag time to producing revenues • Loss of existing tree cover in coffee rust areas restricting cacao expansion • Low average quality of the dried cacao beans • Limited access to the higher value markets, such as fermented and organic
Planting Seasons	• October – December, April – May: dependent on rains
Key Aspects of the AVANSE Technical Approach: Production	• Intercropping during the first stages of plantation establishment; using crops adapted to a range of cacao densities (3 x 3m, 4 x 3m, and 4 x4m) • Increasing productivity and production of old cacao trees by maintenance, rehabilitation, and regeneration. This activity will continue into summer 2019, given the more immediate returns compared to establishing new orchards • Transfer of the maintenance of the 37 clonal gardens AVANSE established • Using grafting to reproduce and propagate the best cacao strains (super trees) • Encouraging locally organized and managed nurseries to produce improved seedlings close to farms, in a timely manner at a reduced cost
Key Aspects of the AVANSE Approach: Marketing	• Expanding the local capacity of the main exporters, PISA, NOVELLA, and FECCANO, to purchase fresh beans and ferment them thus providing farmers access to a new and better priced market for their beans • Fair trade and organic certification • Additional cacao sales groups formed; currently more than 5,000 producers are informally grouped. These groups will be encouraged to join the umbrella marketing cooperative CPCN (Cooperative of Cacao Producers in the North)
Targeted Zones	• Borgne, Port-Margot, Limbé, Bas-Limbé, Plaisance, Pilate, Acul du Nord, Milot/Plaine du Nord, Grande Rivière du Nord, Bahon, Limonade, Trou du Nord, Mont Organisée. Two slightly lower priority areas: Perches and Acul Samedi (Fort Liberte)

AVANSE's activities in 2019 to contribute to the development of a sustainable cacao economy in the north will be similar to previous years. Additional training and grant support will help cacao producers, exporters, and processors be ready to adapt to any new developments after the project ends.

These actions include:

- Strengthening cacao productivity and diversifying income sources in cacao agroforestry systems;
- Partnering with the private sector to improve the quality of the cacao produced for export;
- Increasing access by producers to cacao markets at the best quality and best price; and
- Improving the capacity of AVANSE partners to take charge of these activities.

ACTIVITY 1.1.2: Strengthening Cacao Productivity and Diversifying Income

- New orchards successfully established and gaps filled
- Pruning and shade control in young cacao orchards
- Control of cacao tree size and shade cover in old orchards
- Cacao producers trained and AVANSE's technical guides distributed

ACTIVITY 1.2.3: Partnering to Improve Cacao Quality

- Producers trained in improved quality control
- Producers' organizations producing superior commercial cacao

ACTIVITY 1.2.4: Increasing the Access of Producers to Higher Quality Markets

- Novella and its farmers get organic certification
- AGROTECH expands its processing of local cacao
- Novella starts processing fermented cacao

ACTIVITY 1.2.5: Improving Sustainability by Partnering

- 60 ha of old cacao rehabilitated with AVANSE's partner FECCANO
- AVANSE's partners (FECCANO, PISA, MARNDR) using clonal gardens
- Local cacao producer organizations (CPCN, APROCANO, FECCANO Cooperatives) strengthened

ACTIVITY 1.3.1: Increasing the Sales and Use of Improved Inputs and Services

- Farmers informed on the costs and returns of adopting technical itineraries; their capacity to track production cost, revenues, and margins built
- Improved access to financial services to farmers

ACTIVITY 1.3.2: Improving Access to Technology

- Supply chains for tested cacao technologies in the north strengthened

ACTIVITY 1.3.3: Improved Planting Materials

- Supply of improved cacao seedlings in the north increased

Figure 6: Objectives and Activities Planned for FY 2019: Cacao

SUB-IR 1.1: KNOWLEDGE AND AVAILABILITY OF IMPROVED PRODUCTION TECHNOLOGIES AND SYSTEMS INCREASED: CACAO

Activity 1.1.2: Strengthening Cacao Productivity and Diversifying Income Sources

AVANSE will continue to plant trees to fill any gaps, support access to improved genetic material, and train producers/cooperatives in the orchard and harvest management required to produce quality cacao.

Output 1.1.2a: New orchards successfully established

In FY 2016, the project supported nurseries managed by the communities in Borgne, Port-Margot, Limbé, Bas-Limbé, Plaisance, Pilate, Acul du Nord, Milot/Plaine du Nord, Grande Rivière du Nord, Bahon, Limonade, Trou du Nord, Fort-Liberté, and Mont Organisée. The trees planted from those nurseries will be producing soon. The 250,000 seedlings currently available in the community nurseries will be used to fill in the planting density in these 2016 plantations. During the October to March planting season, any gaps in these recently planted orchards will be filled. This will ensure the optimum planting density, maximize the use of the land, and increase the farmers' ultimate yields.

In 2018, PISA started setting up a nursery to produce high-quality grafted cacao seedlings for sale to local farmers. As part of the technical support, AVANSE will assist PISA to source quality budwood from the high potential trees in the clonal gardens it already established. Once it is operational, the PISA nursery should provide up to 150,000 seedlings each year. The AVANSE Cacao Team will provide training to PISA staff on nursery management, cacao grafting, and other regeneration techniques so their staff can, in turn, train more local cacao farmers in improved propagation methods.

Output 1.1.2b: Pruning and shade control in young cacao orchards

The project will continue to work with the new cacao orchards planted by the project. Activities will include management of shade trees and nurse crops and pruning of young cacao trees.

The project will continue to explore the future provision of pruning and grafting services that could be bought by farmers. The goal is that these services remain available after AVANSE has ended. If the demand for paid services by farmers is limited, perhaps other stakeholders in the industry, such as cacao buyers or processors, will subsidize these activities to ensure that this next generation of Haiti's cacao trees is cared for and maintained to safeguard future harvests.

Output 1.1.2c. Control of cacao tree size and shade cover in old orchards

Maintenance operations on the old orchards will continue, with management of the shade species, pruning of cacao trees for height control, sucker removal, and regeneration grafting as appropriate. In a normal rainfall year, the returns from the better management, correct pruning, and improved harvesting in existing orchards accrue rapidly. However, in drier years, the short-term reduction in yields caused by maintenance makes farmers inclined to defer the maintenance. In FY 2019 AVANSE will continue to work with cacao growers and the cooperatives' staff to help them understand the benefits of maintenance. The Cacao Team also plans to support the expanded use of more efficient pruning equipment by providing subsidies to local suppliers.

Output 1.1.2d: Cacao producers trained

With the assistance of a short term consultant from Costa Rica, an integrated pest management plan (IPMP) for cacao and cacao diseases and pests was prepared in 2018. And together with the Environmental Team, AVANSE farmers and technicians were trained in good agricultural practices (GAP).

The extension agents will use these AVANSE technical guides to continue to provide field training to help farmers adopt the GAP needed to successfully establish and manage their new cacao orchards, improve and maintain their old orchards, and increase post-harvest quality.

SUB-IR 1.2: STRENGTHENED EXTENSION OF AGRICULTURAL TECHNOLOGIES: CACAO

Activity 1.2.3: Partnering to Improve Cacao Quality

To help ensure sustainability, AVANSE partners with local exporters and producer groups. In FY 2019, AVANSE will continue to work through these partners to help Haiti produce more high-quality cacao, whether dried, fermented, organic and/or fair trade. With the goal of improving both the average quality

and the price per pound of beans that the Haitian cacao farmers receive, AVANSE will be assisting cacao producers with a range of improvements.

Output 1.2.3a: Producers trained in improved quality control

Meetings will continue between cacao farmers, producer groups, exporters, and the project. During these field meetings, the importance of quality and the changing requirements of the market will be stressed; the main local cacao buying firms will present information on their policies, pricing, quality, and delivery requirements for cacao beans. AVANSE will also continue to work with producers to improve their production and harvesting systems. The objective is to bring more farmers into direct contact with the main existing cacao buyers in the local market, Novella, PISA, and FECCANO.

Output 1.2.3b: Producers' organizations producing superior commercial cacao

During FY 2018, in collaboration with private sector partners, PISA, Novella, FECCANO, and AGROTECH, there was a strong emphasis on integrating marketing and production activities and strengthening existing partnerships to ensure that activities continue after the end of the AVANSE project. This collaboration will continue in FY 2019 with an emphasis on training of producer groups.

Activity 1.2.4: Increasing Producers' Access to Higher Quality Cacao Markets

Producers that understand the particular demands, requirements, and benefits of the various local marketing channels (cooperatives, exporters, middlemen) and markets (fermented cacao, unfermented cacao, organic, fair trade) are better equipped to make sales decisions. AVANSE will continue to provide this information on the local cacao market, in collaboration with the main cacao buyers in the north.

Output 1.2.4b: Novella and its farmer network receive organic cacao certification

Enrollment of producers who agree to follow the terms of the organic cacao certification program will continue. After registering for the organic certification program, each individual farmer signs a contract with Novella, the manager of the organic certification process. Every producer in the program has his or her parcel geo-referenced, which provides an estimate of the total organic cacao area and the potential production when all the plot data is aggregated. The goal is to export at least one container of organically certified cacao in FY 2019. A formal request has been made to the certification body for organic certification. The costs of the initial process of organic certification are being shared between AVANSE and the exporter, Novella. In 2020, certification costs will be paid by the exporter.

Output 1.2.4c: AGROTECH expands purchases of local cacao for processing

In FY 2019, AVANSE will provide funding to support AGROTECH's expansion and improvement of its cacao processing center in Les Perches. It is modernizing its current infrastructure through the acquisition of new cacao processing equipment, and receiving training to strengthen its capacity in management, marketing, and accounting. This joint investment will provide local cacao producers with another local market option. The AVANSE grant supplied the equipment to modernize the firm's chocolate production, improve product labeling and packing, and diversify its product line. In FY 2019, the equipment will be installed and the center will be operational (See 3.1.2d for more details).

Output 1.2.4d: Novella starts processing fermented cacao

Novella is working with more than 2,200 farmers on organic certification and is investing in collection centers in the main production zones to improve quality control and help respond to the international demand for organic certification. Currently, in a good year, Novella buys around 200,000 pounds of conventional cacao. To date, all of this has been exported as the lower-priced dried cacao. Novella is turning a former coffee center in Grande Rivière du Nord into a cacao fermentation center. AVANSE is supporting these efforts through a small grant to purchase fermentation equipment and the provision of technical assistance to train the exporter's staff and CPCN members.

Activity 1.2.5: Improving Sustainability by Partnering

AVANSE will continue to strengthen the organizational capacity of formal and informal farmers' groups and also work with selected cacao producer cooperatives in FY 2019.

Output 1.2.5a: 60 ha of old cacao rehabilitated with AVANSE's partner, FECCANO

In 2018, working through a grant made to two of FECCANO's cacao cooperatives, demonstration plots were planned in collaboration with MARNDR to allow farmers to compare well-pruned and shade-managed cacao with their traditional practices. However, the severe drought in 2018 made the cooperative members unwilling to do the major pruning required to ensure regeneration.

In 2019, AVANSE will continue to partner with FECCANO and the Agricultural Cooperative Jean Baptiste (CAJBC) located in Grande Rivière du Nord and the Cooperative of United Agricultural Planters (CAPUP) in Port Margot, but the focus will shift to training of trainers. These trainers will be able to demonstrate and promote the AVANSE cacao regeneration model to farmers. AVANSE will also ensure the local BAC makes this practical knowledge available to MARNDR staff.

FECCANO has committed that a portion of the fair trade funds generated by these two cooperatives will be used to finance and support cacao regeneration efforts for member farmers; this collaborative activity will also help ensure that more farmers use "super" trees from the clonal gardens for grafting.

Output 1.2.5b: Maintaining the clonal gardens

Because of variations in quality among individual trees, 70 percent of the total production of beans in a Haitian cacao orchard can come from just 30 percent of the trees. To improve the quality of the lower performing trees, AVANSE has been encouraging the use of grafted seedlings using scions from the highly productive super trees maintained in the clonal gardens.

AVANSE's strategy for creating sustainable sources of quality plants and grafting material to Haiti's cacao farmers into the foreseeable future includes the development of community nurseries and the involvement of NOVELLA in those nurseries, grant support given to PISA's nursery (part of the old grant to be completed by PISA), and encouraging the cooperatives to use the established clonal gardens for both seed and budwood.

Output 1.2.5c: Local cacao producer organizations strengthened

In FY 2018, AVANSE partnered with FECCANO, CAJBC and CAPUP, providing a grant that helped these cooperatives to invest in the improved post-harvest equipment that would enable them to increase the quality of their marketable cacao. This training and technical support will continue in FY 2019. AVANSE has also been supporting PISA with the institutional strengthening of its producer network (APROCANO) to ensure that this farmers' organization can be structured and organized to meet the requirements for fair trade certification. It is also working with Novella to build the capacity of CPCN under a PPP, providing training on the role of a cooperative, cooperative financial management, business planning, and providing member services such as fair trade. A strong CPCN should help ensure that after the project ends, cacao farmers continue to benefit from improved access to markets (i.e. via certification programs). AVANSE intends to continue these producer network activities in 2019 by providing support from the field team and specialized consultants.

SUB-IR 1.3: ACCESS TO INPUTS INCREASED: CACAO

AVANSE has been working with farmers and local suppliers to expand the use of high-quality agricultural inputs across the Northern Corridor. AVANSE's efforts in FY 2019 to improve the access of cacao farmers to modern inputs and agricultural services will include:

- Implementing PPPs with FECCANO, PISA, and Novella;
- Grants to agricultural equipment suppliers to develop a supply of pruning equipment in the north; and
- Capacity building with private-sector partners to maintain the delivery of products and services.

Activity 1.3.1: Increasing the Adoption of Improved Inputs and Services

In FY 2019, AVANSE will train the farmers to collect data on cost of production and revenue and intensify effort to enable them access to improved inputs and services:

Output 1.3.1a: Farmers informed on the costs and returns of adopting technologies

In Q2 FY 2019, the extension team will help farmers collect data on production, yield, costs, sales, and revenues. The data will be analyzed and the findings discussed by the farmers' groups. The provision of pruning, drying, and fermentation equipment by the associations for their members will be explored.

Output 1.3.1b: Improved access to financial services to farmers

Through the voucher program, AVANSE rice farmers started interacting with local financial institutions. In FY 2019, cacao farmers will meet with the same financial institutions. See IR 3 Activity 3.5.2c for further details on WOCCU's *"Finance pour tous"* program.

Activity 1.3.2: Improving Access to Technology

Modern equipment for pruning, harvesting, and processing cacao is critical to increasing productivity. One of the main constraints to the adoption of modern techniques and equipment is the lack of a supply chain in the North. Farmers also lack technical support in the operation and maintenance of this equipment.

AVANSE will work with farmers to increase the availability of modern equipment for pruning, harvesting, and processing cacao and encourage the exporters to be active in improving access to technology to farmers.

Output1.3.2 a: Supply chains for cacao technologies in the north strengthened

AVANSE has developed partnerships with agricultural and irrigation suppliers and has been using grants to allow them to expand the supply of equipment at a subsidized price to farmers. The goal is to encourage them to build up sustainable supply chains in the north that will continue post-project. Farmers invest 40 percent of the market value of the equipment and receive training in its use. Farmers pay their contribution at the supplier's office in the north and northeast. These grants are intended to encourage these businesses to expand the local supply of equipment over time.

The subsidy program is demand-based, in that farmers decide the type of equipment they want to purchase and provide their share of the costs at order time. Market prices are negotiated by AVANSE with the suppliers, who provide the equipment, the operator training, and after-sales services.

This subsidized production and harvest equipment is available to individual farmers, as well as cacao producers' associations. Eligibility for receiving the subsidy has been kept simple, but the requirements help ensure the program's success.

AVANSE will encourage lead farmers, producers' associations, and exporters to sell equipment services to others in order to make their investment more profitable and maximize the benefits of this activity to farmers. The Communications Team is working with AVANSE's supply partner to inform farmers about the program. Key messages are shared with farmers via the FFS, radio, and SMSs.

Activity 1.3.3: Improved Planting Materials: Cacao

The continued availability of improved planting materials is crucial to increasing overall productivity. Farmers need to invest in them, and once the project ends, local supply systems need to be in place.

Output1.3.3 a: Supply of improved cacao seedlings in the north increased

In FY 2019, AVANSE will continue to support the local supply of improved cacao germplasm by working with FECCANO's cooperatives to establish a network of producer-managed community cacao nurseries and with PISA to establish a commercial nursery. FECCANO and PISA will use germplasm from the

AVANSE clonal gardens. AVANSE will also provide technical assistance, mentoring, and training to community nurseries and PISA to promote their market viability. AVANSE is promoting community nurseries' use of seeds and grafting materials from super trees in the clonal gardens, and encouraging improvements in grafting techniques by training nurseries in the Northern Corridor. The aim of these activities is to support the local production of planting materials and to avoid importing unsuitable cacao varieties into the Northern Corridor.

Table 11: Cacao Activity Budget

Activity	Estimated Budget
Cacao nursery development	[redacted]
Support for new cacao orchards	
Existing plot maintenance	
Workshops and training	
Supporting the improvement of cacao quality	
Marketing activities	
Processing and storage (PPP and new grants)	
Cacao equipment subsidy programs	
Total	

Table 12: Cacao: Activities/Results/Verification

Objectives	Activities	Expected Results
New orchards planted by AVANSE to date well established and gaps filled	• Gap filling with 250,000 cacao seedlings • 150,000 new seedlings in partnership with PISA in 2019 • Produce and use 150,000 Moringa seedlings as intermediate shade trees for young cacao trees to improve and strengthen their resilience	• At least 1,000 ha planted with new cacao seedlings into the gaps in existing orchards • 500 ha of new cacao planted from existing seedlings • Minimum of 300 new ha in 2019 from PISA
• Increased productivity of Haiti's cacao • Improved pruning and shade control in young cacao orchards • Expanded control of cacao tree size and shade in old orchards • More cacao producers trained in improved techniques • AVANSE's technical guides widely distributed	• Maintain 3,750 ha of young cacao orchards • Maintenance and care for 2,000 ha of old cacao orchards • Use of cuttings from selected super trees in clonal gardens for regeneration of old cacao gardens • Training producers through FFS • Distribution of a technical guide • Building the capacity of grafters • Strengthen local knowledge of cacao grafting technique (training and service contract to the best grafters)	• 3,750 ha of new orchards maintained • More grafts made with cuttings from elite cacao trees/identified clones • Seeds used in cacao nurseries come from elite cacao trees • 20 clonal gardens/seed gardens operating • 12,000 handbooks distributed to 3,000 producers • 25 new grafters trained
• More producers trained in improved quality control • Local producers' raising producing superior commercial cacao	• Training producers in improving quality • Increase in the amount of cacao dried and stored • Local cacao organizations measure and check quality • Training of producers in the cacao market	• 2,500 producers trained • 2,500 new producers form groups and sell their cacao through the producer organization

Objectives	Activities	Expected Results
• Technical and organizational capacities of APROCANA and CPCN strengthened • AGROTECH expands its processing of local cacao • Novella starts processing fermented cacao • Improve the technical capacity to manage cacao production locally	• Improving the quality of the cacao marketed by producers • Support to additional producer groups, and the strengthening of their association to improve the quantity of quality cacao • Continue to support production companies (Novella and PISA) to gain access to the fair trade and organic markets (producer training, structuring of producer groups to meet fair trade and organic market requirements)	• 10,000 beneficiaries, 1,500 new • Novella and its farmers get organic certification • Novella and its farmers get fair trade certification • PISA and its farmers get organic certification • PISA and its farmers get fair trade certification
• 60 ha of old cacao rehabilitated with AVANSE's partner FECCANO • AVANSE's partners (FECCANO, PISA, MARNDR) using clonal gardens • Local cacao producer organizations (CPCN, APROCANO, FECCANO Cooperatives, and women's groups) strengthened	• Strengthen partnership with local stakeholders (FECCANO, etc.) to produce model plots demonstrating cacao regeneration techniques • Training producers in improving quality • Increase in the amount of cacao dried and stored • Local cacao organizations measure and check quality • Export enterprises benefit from technical assistance • A PPP supported by training and a grant to a chocolate producer in the northeast, AGROTECH • Support for the development of cacao production enterprises and local cacao-processing enterprises, dominated by women	• 60 ha demonstrating old cacao regeneration • 2,500 producers trained • 1,500 producers trained in improved post-harvest handling and drying techniques • 225,000 pounds of producers' cacao marketed at premium • Sales of cacao for local transformation and sales of chocolate on the local market both increased

Outcomes assume partnerships and collaborative arrangements with cacao exporters.

PLANTAIN VALUE CHAIN

AVANSE's technical strategy for plantain is based on the use of improved technologies; these include better land preparation and the use of clean, improved planting materials, combined with better crop husbandry (pest and disease control, irrigation, and drainage) and improved post-harvest handling.

In FY 2019, AVANSE will continue to help plantain farmers reduce their risks and to increase their productivity. Activities include subsidizing the costs of machinery for land preparation, weeding, and irrigation from ground or surface water; facilitating the local production of improved planting material; and increasing the involvement of youth and women in the production and marketing of plantain. In FY 2019, the grant funding supporting the establishment of a private-sector 50 hectare demonstration project for banana export, with modern post-harvest facilities, will continue (See 3.1.3a for more details).

Table 13: Summary of AVANSE's Technical Approach in 2019: Plantain

Planting Seasons	September – November, March – May
Critical Gaps	• Water control (flooding, drought) • Cost effective weed control • Knowledge of best technologies to better manage pests and diseases • Quality (size and number) of fruit • Aggregation of commercial volumes
Key Aspects of the AVANSE Technical Approach: Production	• Water management to address the main threats of drought, flooding, and *Sigatoka* and *Erwinia* • Introduction of mechanical weeders, along with cover crops (*Mucuna* and *Canavalia*) for weed control • Application of organic matter and fertilizer for healthy, stronger, and more productive plants and suckers • Training farmers in the PIF technique to increase availability of healthier seedlings of selected varieties
Key Aspects of the AVANSE Approach: Marketing	• Improve land and water management to ensure the increased and earlier production of marketable plantain fruit • Partner with an international exporter to pack and export local banana production from La Chapelle • With support from Banamiel for packing and export, expand pilot to achieve more commercial volumes
Targeted Zones	• Limonade, Quartier Morin, Caracol, Trou du Nord, Ouanaminthe, and Ferrier are the priority zones. Producers in other zones will be able to participate in trainings, etc.

For FY 2019, AVANSE has seven main objectives for the plantain farmers of northern Haiti:

- Strengthen the producers' knowledge of new and improved technologies;
- Improve the average yields and resiliency of plantain producers;
- Improve the capacity of producers to manage the irrigation and drainage structures at the farm level;
- Promote the sustainability of FFS;
- Improve access of producers to the markets, and expand the marketing and processing of plantain;
- Strengthen the skills and knowledge of youth (15-24) in improved plantain technology; and
- Strengthen women's skills and knowledge in plantain post-harvest and processing technologies.

The emphasis in FY 2019 is on increasing productivity on the existing plantain farms. Increasing yields and incomes on the existing plantations requires dealing with the widespread problems of land and water management, as well as improved control of diseases and pests. AVANSE will strengthen the dissemination of GAP through the FFS, focus on the most productive locations for plantain production, and provide more services to the larger commercial plantain farmers to increase average yields and generate employment.

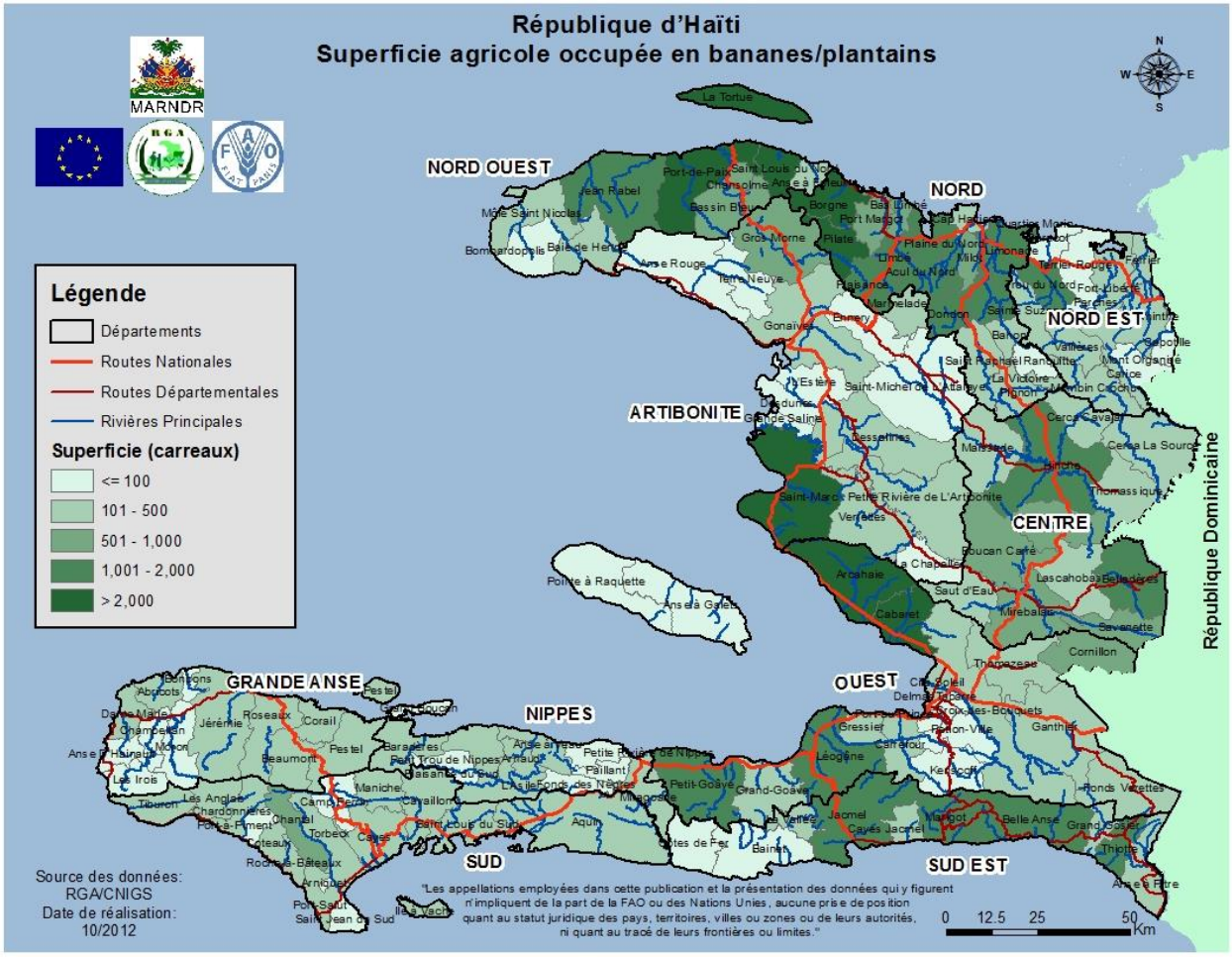


Figure 7: Plantain Growing Areas in Haiti

AVANSE's strategy for the sustainable production of plantain in the north and northeast region is based on the provision of collaborative technical support to producers (with a renewed emphasis on women and youth) and engagement of the private sector. Support will be given to demonstrations and exchange visits in order to help producers identify and deal with their priority technical problems. AVANSE will transfer the appropriate skills so farmers can diagnose and solve their problems, increase their gross margins through adoption of a refined technical package, and improve their productivity with an emphasis on irrigation, clean suckers, and better options for land preparation and weed control.

The main activities in FY 2019 will be improving the management of established plantations rather than starting new plantings, demonstrating a range of improved techniques on existing plantain farms, increasing the access of plantain farmers to irrigation, and a greater emphasis on marketing and processing.

Figure 8: Objectives and Activities Planned for FY 2019: Plantain

ACTIVITY 1.1.3: Strengthening Producers' Knowledge in New Technologies

- Producers trained in best practices for plantains
- Selected lead farmers and facilitators trained in PIF techniques
- PIF technology demonstration plots established
- Exchange visits to see improved production techniques

ACTIVITY 1.1.4: Improve Average Yields and Resiliency of Plantain

- Direct support provided to selected lead farmers

Improve Irrigation and Drainage Practices

- Producers organized and trained to clean and maintain wells
- Producers trained on best irrigation and drainage system practices
- Irrigation services provided to the communities

Promote FFS Sustainability

- FFS members continue working together in an organized structure

Improve Access of Producers to the Markets

- Facilitate links between producers and buyers (i.e. Madam Saras, processers, etc.)
- Producers trained on SIMA

Strengthen Youth (15-24) Skills and Knowledge in New Plantain Technology

- Capacity of youth leaders to lead and manage change within their communities increased
- Young producers trained on SIMA

Strengthen Women's Skills and Knowledge in Plantain Post-Harvest Processing Technologies

- Training women's groups to transform plantains
- Training women's groups in agribusiness and entrepreneurship

Activity 1.3.1: Increasing the Sales and Use of Improved Inputs and Services

- Access to financial services for farmers improved (see IR 3).

SUB-IR 1.1: KNOWLEDGE AND AVAILABILITY OF IMPROVED PRODUCTION TECHNOLOGIES AND SYSTEMS INCREASED: PLANTAIN

Activity 1.1.3 Strengthening Producers' Knowledge of New Technologies

To achieve its plantain productivity and income targets, AVANSE will work with farmers through FFS, using the farm of an FFS member as a regular meeting place and training environment for a group of 20–25 farmers throughout the growing season. AVANSE uses FFS and their associated demonstration plots

as practical training locations to increase awareness and test new technologies, and to encourage the adoption of improved techniques. The demonstration plots at these locations serve as a model for both FFS members and their neighbors, allowing them to observe the potential of innovative plantain production techniques and compare the new technologies to their current practices.

Output 1.1.3a: Producers trained in best practices for plantains

AVANSE will provide technical advice to farmers with established plantain plots who meet some minimum agronomic requirements (suitable soil, access to water, etc.). Extension agents have identified all the plantain farms in their area that meet the criteria, and a comprehensive program provides these farms with appropriate technical supervision across the seasons, delivering activities to help farmers increase their output and incomes.

The plantain value chain team and the plantain marketing advisor meet with the FFS, listen to farmers' constraints, and have detailed work plans for each FFS that will prioritize challenges faced by the FFS members and identify the solutions to be tested on members' fields. This allows the identification of the main challenges and ensures that AVANSE's technical assistance is tailored to meet farmers' needs.

A plot demonstrating GAP has been established in each FFS. The emphasis of each demonstration depends on the main problems at that site. The producer operating the plot is responsible for the daily management of the demonstration plot, which promotes new technical activities. Producers can compare their traditional practices to better fertilization, irrigation, or phyto-sanitary methods. The various FFS members meet at these GAP plots to discuss the impact of the innovations.

Extension will be done via guided tours of successful demonstrations, field days (for farmers in the same zone or occasionally from other zones), and the production and distribution of technical sheets and posters in Creole to provide information on promising plantain technologies.

Output 1.1.3b: Selected lead farmers and facilitators trained in new techniques

In FY 2018, AVANSE selected one or two of the more entrepreneurial and innovative farmers from each FFS and helped them invest in testing or demonstrating new technologies (e.g. the establishment of pilot PIF production, irrigation methods, weeding, cover crops).

The lead farmers play a role in the FFS (during formal training sessions and outside the regular meetings) helping to popularize new or improved practices. This help increases the demand for improved inputs (e.g. plant protection products for *sigatoka* control, tillage machinery, pumps, fertilizer based on soil test results, weeding equipment, or cover crop seed). Concurrently, AVANSE works with suppliers to increase the availability of improved inputs on the local market and to facilitate the links between plantain producers and the suppliers of these products and services.

Output 1.1.3c: PIF technology established

Access to good quality planting material is one constraint to the development of plantains in northern Haiti. The use of contaminated planting material spreads pests and diseases and limits the potential future production. To enable northern farmers to have access to healthy plants of good genetic material and increase their production of plantain, AVANSE has been working with local producers to implement the PIF method (plants derived from stem fragments). In FY 2018, the PIF technique was promoted through the establishment of demonstration plots, one per FFS, allowing producers to assess and evaluate the performance of PIF plants versus suckers. The advantages of using the PIF methodology include healthy planting materials of a known variety, and that several plants can be produced from one stem.

AVANSE will link farmers who wish to purchase PIF plants directly with PIF seedling producers. The farmers can determine the quantities, price, and timing in negotiation with the supplier. To support the expansion of this technology, AVANSE will distribute a Creole PIF production sheet, identifying locally available materials that can be used for nursery structures and to provide the necessary shade. The field team will identify larger farms interested in combining their use of PIF plants with intercrops, such as

Canavalia or *Mucuna*, to control weed growth and reduce labor costs. A consultant is available in FY 2019 to train farmers interested in adopting and using a cover crop technology.

Output 1.1.3d: Exchange visits to see improved production techniques

At least one local visit per FFS will be organized in Northern Haiti, one visit to Arcahaie, and one visit to the Valley of Trois Rivières.

Activity 1.1.4: Improving Average Yields and the Resiliency of Plantain Producers

AVANSE will continue to promote good agricultural practices to increase the yields and will improve farmers 'resilience by subsidizing pumps and accessories.

Output 1.1.4a: Direct support provided to selected lead farmers

For FY2019 AVANSE will work with selected lead farmers by providing them direct support in

- Conducting soil analyses
- Facilitating access to inputs such access to planting materials and fertilizer
- Increasing access to plowing, labor
- Improving access to irrigation equipment (pumps and accessories)

Activity 1.1.5: Improving the Capacity of Producers to Manage Water

Establishment of plantain plants and production yields are very sensitive to untimely water deficits. Peak production requires high humidity (60-90 percent) and a regular water supply (120-150 mm/month). A serious deficiency of water over several months, which can occur in many parts of northern Haiti, means that supplemental irrigation is essential for plantain productivity. A shortage of water also slows the development cycle and the emergence of leaves, and reduces the final production, resulting in a longer period between harvests, fewer bunches, and smaller fruit. Conversely, plantains are also very sensitive to excess water. In FY 2019, AVANSE will continue training farmers in improved irrigation and drainage to ensure maximum yields, and positively affect plantain production and farmers' income.

Measurements conducted by AVANSE during the Programmatic Environmental Assessment (PEA) and again, more recently concluded that even during low season, the surface flows in the Grande Rivière du Nord provide up to 21 million cubic meters in recharge to the groundwater. Therefore, it should be possible to use surface water to irrigate up to 1,000 ha of land on both sides of the river. A program to help farmers access the groundwater in the Bord de Mer/Limonade zone and the surface flows in three watersheds – Haut du Cap, Grande Rivière du Nord, and Trou du Nord – is planned in FY 2019.

Output 1.1.5a: Producers organized and trained to clean and maintain wells

More than 60 people have been identified with experience in cleaning and repairing wells. A training program has been put together and a selected group of well cleaners will be trained by AVANSE in FY 2019. Once trained, these individuals will help plantain farmers clean their existing wells and maintain them.

Output 1.1.5b: Producers trained in irrigation and drainage best practices

The irrigation team and the plantain extension agents will offer advice to pump buyers on the positive effects of irrigation. A pump promotion strategy is planned in plantain-growing communities. This will include meetings, advertisements in public places, radio spots, and more. AVANSE will work with local microfinance institutions in order to make it easier to buy gasoline to operate the pumps, using the lessons learned from the past years.

Site visits will adapt the irrigation systems to each particular farm in order to improve drainage and irrigation. These visits will be followed by:

- Training of groups of farmers on irrigation and drainage techniques;
- Rehabilitation and development of the existing irrigation wells in the Northern Corridor;
- Development of drainage system for plots; and
- Technical support for the chosen irrigation method.

Output 1.1.5c: Irrigation services provided to the communities

The plantain team will work with new pump owners to offer irrigation services to neighbors, although this is not a condition of purchase. The Plantain Field Team, together with the irrigation engineers, will also work to identify farmer groups interested in purchasing subsidized pumps and will train the groups to operate and maintain them. Farmers will be expected to contribute to the costs, and each group will have a pump maintenance and replacement plan. A FFS could have access to one or two pumps, and FFS could work like a WUA. AVANSE anticipates organizing up to 50 FFS, with each pump covering between 5 and 10 ha; a similar approach will be used to add more irrigable hectares using the surface water in the Grande Rivière du Nord.

To help improve access to water for plantain producers, AVANSE is encouraging expanded supply chains for irrigation equipment and services in the north and northeast by attracting new professional suppliers to either locate there themselves or to develop links with local firms. Initially, the price of the equipment and services will be subsidized by AVANSE using a grant.

A cost-benefit study suggested that a profitability threshold for pumped irrigation is about two hectares; that is, individual producers with this much land or more can benefit significantly. For the smaller producers, AVANSE will offer subsidized pumps to farmers who are organized as a WUA, and have a clear plan for the management of the pump.

Criteria for participation in the program will include the capacity to pay the non-subsidized portion of the equipment, being a current producer of plantain, and access to a dependable source of water (See IR 1.3.6).

SUB-IR 1.2: STRENGTHENED EXTENSION OF AGRICULTURAL TECHNOLOGIES: PLANTAIN

Activity 1.2.6: Promoting the Sustainability of FFS

Output 1.2.6a: FFS members continue working together in an organized manner

The FY 2019 training initiatives will be tailored to meet the specific needs of the different categories of stakeholders, including 1) extension agents/facilitators; 2) agricultural agents of the BAC; and 3) producers.

AVANSE plans to engage consultants/specialists to provide technical assistance in plantain production and marketing, and develop training modules adapted to each audience. Topics will include:

- Production techniques (irrigation, weeding, maintenance, pest and disease control);
- Post-harvest/marketing (market structure and prices, quality control);
- New handling techniques and post-harvest care of plantain (calibration, improvement of transport and storage, and size);
- Processing/product transformation; and

- Financial management, and profit and loss calculations (in collaboration with Auburn University and the University of Limonade).

Further activities include the training of MARNDR supervisors, lead producers, extension agents, and others on specific topics related to plantain cultivation, such as:

- Diseases and pests (In collaboration with the University of Florida);
- PIF techniques;
- GAP;
- Land and water management on plantain plots; and
- Natural fertilization (composting, green manure, and cover crops).

Activity 1.2.7: Improving Access of Plantain Producers to Markets

Output 1.2.7a: Facilitate links between producers and buyers

In the spring of 2017, AVANSE conducted two fresh plantain marketing trials with a Port au Prince buyer who was purchasing 6,000 pounds of fresh plantain per month to produce plantain chips (*papita)* for sale to supermarkets in the capital. The market price in northern Haiti and the costs of transporting fresh plantains to Port au Prince were too high to allow an adequate margin for both parties. Small producers cannot produce significant volumes of the right quality over time, which prevents the development of economies of scale and building a one-to-one relationship with buyers.

To address these constraints, in FY 2019, AVANSE plans to aggregate production and support plantain transformation in the north to reduce the costs of transport. Activities planned include identifying local processors (in the north) that are motivated and willing to work with plantain producers post-AVANSE; and encouraging producers to work together in order to respond to requests from the processors for volumes that a single small producer cannot meet. AVANSE will also continue to train farmers in the proper techniques to produce the quality of plantain in demand by the fresh market.

Table 14: Promoting the Marketing of Plantain

Market Segment	Upgrading Strategy	Results	Goals of Activity/Partnership	Potential Partners
Plantain flour	• Add value to plantain production by improved post-harvest and processing practices • Market specifications: cut and dried plantains, chips, flour, and other processed products	Higher prices for producers	• Improve drying capacity of farmer groups • Improve processing facilities for plantain drying • Develop market with higher paying clients in the north	• Les Farines Quisqueya
Plantain chips for local buyers: Cantine scolaires, PAM, Caracol, supermarkets, and hotels				• Producer groups • Processors • Distributors
Fresh plantains to hotels and supermarkets	• Improve quality and transportation • Market specifications: fresh plantains by "hands," not regime		• Improve plantain storage and transportation	

Output 1.2.7b: Producers trained on SIMA

See IR 3.2.1.

Activity 1.2.8: Strengthening Skills and Knowledge of Youth (15-24) in Improved Plantain Technology

Agriculture offers employment and wealth creation opportunities for unemployed or underemployed youth across the plantain value chain, i.e. production, processing/value addition, packaging, marketing, and export promotion. Youth have the vigor, strength, and mobility to engage in plantain activities.

Youth also have better skills and knowledge in ICT than their parents as well as more access to online information and innovations in agriculture and market information through mobile phones and computers. In rural areas, youth help their parents with farming and have access to their parents land, family inheritance, and social networks. However, they lack the skills and knowledge in production techniques and access to resources (inputs, technologies, etc.) to cultivate these lands. Most importantly, they lack the interest and motivation to participate in agriculture. The perception is that farming is risky, low-income, and requires hard manual labor. However, there is evidence from around the world that agriculture can become a strong generator of income, employment, and a source of wealth creation for young people.

Output 1.2.8a: Capacity of youth leaders to lead and manage change within their communities increased

Young producers (15-24) that have passed basic primary school and have a signed permission slip from parents would be eligible to be trained to grow plantains.

Activities targeted at youth in FY 2019 include:

- Establishing FFS for youth and training the leaders as trainers;
- Training young producers in GAP and the PIF technology;
- Establishing GAP and PIF demonstration plots managed by youth;
- Distributing plantain seedlings produced using PIF to the youth FFS;
- Training of youth on the post-harvest care of plantain (storing, handling, and transport) and on value addition (*papita*);
- Training of youth in marketing and business skills; and
- Linking the youth FFS to sources of credit and to plantain wholesalers.

Output 1.2.8b: Young producers trained on SIMA

See IR 3.2.1.

Activity 1.2.9: Strengthening Women's Skills and Knowledge in Plantain Post-Harvest Processing Technologies

In rural Haiti, women are the head of nearly 40 percent of households. They are active in all aspects of agriculture from production to commercialization. They engage in planting, weeding, and harvesting, but they play an even more important and bigger role in post-harvest activities including transforming, transporting, marketing, and selling of food products. Women are regarded as the *poto mitan* (the pillar of the family) as they are responsible for feeding and caring for the family. They tend to dominate in retail as *ti machann* (market women), *Madam Sara* (traders), and food processors. The *Madam Sara*, the larger female food traders, are the principal distributors of domestic produce in Haiti. They link the rural Haitian food producers to markets across the country. They buy directly from the producers on the farm and they distribute and sell produce in small towns and urban markets. Although considered a part of the informal economy, many *Madanm Sara* have specific trading routes, clients, and buying networks. Some have grown to be quite established businesswomen, and these *Gros Madam Sara*, (larger

traders) often employ their own *Ti machann* (market women) and *Ti Madam Saras* (smaller traders). The *Gros Madam Sara* aggregate produce and do bulk sales to the regional capitals and to Port-au-Prince. However, both female producers and micro-entrepreneurs are crowded at the bottom of the economic pyramid. They face challenges and risks, and their role is undervalued.

Output 1.2.9a: Training women's groups in agribusiness and entrepreneurship

AVANSE will create female associations of plantain producers and train the members in organizational strengthening topics such as leadership, business planning, management and marketing and value addition.

These activities will enable AVANSE to:

- Promote the spread of good agricultural practices through farmer field schools;
- Train female farmers on watering techniques and water management in their plots;
- Promote the use of PIF seedling methods;
- Train female producers on the economics of plantain production for better cost control;
- Train women's groups (wives of farmers, female farmers, and *Madam Saras*) in market information; and
- Train women's groups (wives of farmers, female farmers, and *Madam Saras*) to transform plantains (i.e. chips, nutritional porridge, flour).

SUB-IR 1.3: ACCESS TO EQUIPMENT INCREASED: PLANTAIN

AVANSE has been working with farmers and local suppliers to expand the use of high-quality agricultural inputs across Haiti's Northern Corridor. AVANSE's efforts to improve commercial access to modern inputs and agricultural services for plantain farmers in FY 2019 will include:

- Grants to agricultural equipment suppliers to develop the supply chain in the north;
- A greater emphasis on using the FFS to link private firms and farmers; and
- Capacity building with private-sector partners to improve the delivery of products and services.

Activity 1.3.5: Increasing the Sales and Use of Improved Equipment and Services: Plantain

Output 1.3.5 a: Equipment and machinery suppliers and service providers improve their range of products and services

Activities in FY 2019 will include the continued expansion of the pump and machinery subsidy program, encouraging the use of organic manure and appropriate use of pest and disease control measures.

Output 1.3.5 b: Plantain farmers tracking the costs and returns of adopting techniques

In Q2 FY 2019, the extension teams will collect data on production, yield, costs, sales, and revenues. The results in terms of revenue increases, rate of farmers' adoption of new practices and technologies, and other findings will be brought to the FFS for discussion with farmers. This will allow farmers to fully appreciate the costs and benefits of applying new technologies such as pumped irrigation.

Output 1.3.5 c: Improved access to financial services to farmers

AVANSE farmers started to work with local financial institutions through the voucher program. Meetings will be arranged with the plantain FFS and the financial institutions to build on this link, thereby allowing the financial institutions to continue to present their services to farmers (See IR 3 3.5.2c for further details).

Activity 1.3.6: Improving Access to Agricultural Services: Plantain

Modern equipment for production and post-harvest operations are key pieces of increasing productivity. One of the main constraints to expanding the use of modern equipment is the lack of a supply chain in the North. There is also a lack of technical support from sellers to operate and maintain this equipment.

Output 1.3.6 a: The use of tested technologies by plantain farmers expanded and supply chains in the north strengthened

AVANSE has implemented a partnership with agricultural and irrigation equipment suppliers to help address the lack of a formal supply chain in the north and the limited technical support from sellers to purchasers to operate and maintain agricultural equipment.

These subsidy programs are demand-based activities, driven by the farmers' choices, and are open to individual farmers as well as producers' associations.

Table 15 lists examples of the types of products included in this program. The program is demand-based; the farmers decide which make and sort of equipment they want to purchase and provide their share of the costs at order time. AVANSE negotiates market prices with the suppliers that supply the equipment, the operator training, and after-sales services prior to sales.

Table 15: Potential Production and Post-Harvest Equipment

Equipment	Type	Initial Estimated Demand
Rototillers	Production	50
Irrigation pumps	Production	250
Plastic crates	Post Harvest	1,000

The Communications Team will work to inform farmers about the programs, transmitting key messages to farmers using the FFS, radio programs, and SMS.

During FY 2017, AVANSE mobilized local entrepreneurs interested in investing in the delivery of mechanical plowing services to producers. A study was conducted that showed that both the use and the delivery of plowing services was profitable once a certain minimum area was covered. With the shift in strategy of the plantain value chain and combined with the availability of plowing services through the Government. For the FY2019, the project will focus on existing plots rather than encouraging farmers to plant new fields.

Activity 1.3.7: Improved Planting Materials

Improved planting materials are crucial to increasing overall productivity. Farmers need to invest their resources in them, and once the project ends, local supply systems need to be in place. In FY 2019, AVANSE will continue to support the local supply of improved plantain planting materials (PIF) by plantain farmers to avoid the import of varieties from outside the Northern Corridor.

At the end of FY 2019, it is expected that at least 1,500 ha of plantain plantations will be applying improved technologies or good agricultural practices, that there is improved land and water management on 1,000 acres, and 500 ha will have improved access to irrigation water.

Table 16: Plantain: Activities/Results/Verification

Main Activity	Output/Result	Means of Verification
• Continue training producers in best farming best practices for plantains • Training selected lead farmers and facilitators in PIF and sensitizing them on the importance of PIF • Continuing to use PIF technology on demo plots and provide all the necessary materials and input to guarantee success • Organizing FFS exchanges and visitations with lead farmers and Dominican farmers to see application of improved production techniques	• The 89 current FFS, with 2,000 farmers, trained in best practices for plantains. • Up to 200 lead farmers and facilitators trained in PIF technology • Provide seven kits of required materials/equipment and input to selected lead farmers with demo plots. The kits include planting material, fertilizer, plowing, and labor (one in each commune) • At least one local visit per FFS organized in North Haiti, one visit in Arcahaie, and one visit in the Trois Rivières Valley area	• GPS used to identify all banana areas. Measurement of yields on improved plots. • Report/list of plots (per location, area, FFS, and farmer) • List of material and equipment provided to lead farmers with demo plots • Visit report with lists of participants • Survey of technology adoption rate
Provide direct support to selected lead farmers	• A minimum of 100 lead farmers received project support to conduct soil analyses, facilitate access to inputs such access to planting material and fertilizer, and access to plowing, labor • Facilitate access to irrigation equipment (pumps and accessories)	• GPS all plantain areas • Methodology for selecting farmers, list of selected farmers who receive delivery receipts of materials and input signed by the selected farmers • Participation lists, ongoing survey of production costs and returns, PHS, review and analysis of status
• Organize and train producers to clean and maintain wells • Training producers on best irrigation and drainage system practices • Training producers on pump maintenance • Facilitating contact between pump providers and producers in marketing and communication meetings • Promote the creation of irrigation services in targeted communities	• Identified wells that require repair and maintenance • Up to 100 farmers (konbits) organized and trained to do well maintenance • Distribute guide with best irrigation and drainage system practices • 150 farmers trained in pump maintenance • Organized at least one meeting between pump providers and producers in each commune • Supported at least seven community members and provide them with subsidies to purchase irrigation pumps and to sell irrigation services	• List of wells identified • Technical guide for well maintenance • Participant list • Number and location of guides distributed • List of training participants • Methodology to develop irrigation service providers, Request for Proposals (RFP), and bookkeeping notes of producers who provide the service • List of meeting participants • Report demonstrating increased access to irrigation water by plantain farmers in the north and northeast
• Encourage FFS members to continue working together in an organized structure • Continue encouraging local partners, like the other projects and Ministry of Agriculture, to be directly involved in FFS activities	• Facilitated meetings to identify and support the needs of FFS members and their common interests • Invited local partners to visit demo plots and invited representatives to speak at FFS meetings • Shared information about FFS activities with local partners	• Report about the needs and common interests of FFS members. • List of invitations and information sent to local partners

Main Activity	Output/Result	Means of Verification
• Facilitate links between producers and buyers (i.e. Madam Saras, processers, etc.) Training producers on SIMA	• Each FFS and their associated Madam Saras trained on marketing techniques and how to identify viable markets • At least 2,000 farmers trained to access SIMA, 50 percent women and 25 percent youth ages 15-24	• Report about the market linkages established • List of training participants, including their ages and gender
• Training young producers (15-24) to grow plantains using PIF technology Requirements: 1) Basic primary school 2) Signed permission slip from parents Training young producers on SIMA	• Trained at least 100 youth in PIF technology, and assisted at least five young producers to create PIF plots • Five plots used as demonstration plots • Up to 500 young people, ages 15-24 (PIF participants and children of producers) trained to use SIMA	• Develop methodology for selecting youth • List of youth involved in PIF trainings • List of youth with established plots • List of youth attending the training
• Training women's groups (wives of farmers, female farmers, and Madam Saras) to transform plantains (i.e. chips, nutritional porridge, flour) • Training women's groups (wives of farmers, female farmers, and Madam Saras) on SIMA • Training women's groups in agriculture entrepreneurship	• At least 100 women trained in plantain transformation • At least 1,000 women trained in SIMA • At least 50 women trained in agribusiness	List of female participants

Table 17: Plantain Activity Budget

Activity FY 2019	Estimated Budget
Extension support to plantain farmers through FFS – demonstrations	[redacted]
Local production of improved plant materials	
Extension support to plantain farmers through FFS – training	
Extension of good agricultural practices	
Expansion of irrigated plantain production	
Expansion of commercial input supplies for plantain	
Marketing and processing of plantain	
Total	

SUB-IR 1.2: STRENGTHENED EXTENSION OF AGRICULTURE TECHNOLOGIES

AVANSE's Sub-IR 1.2 activities extend the technologies being promoted by AVANSE under the IR 1.1 activities. Additional details are given under the production and marketing activities in IR 1 and IR 3.

Activity 1.2.10: Extending Improved Practices

In FY 2019, AVANSE will continue to support the diffusion of improved cropping practices and good agricultural practices for rice, plantain, and cacao. The IR 1 technical team will work with the staff in Communications to produce Creole training materials for use in AVANSE field trainings and for dissemination.

All extension materials include an emphasis on marketing. AVANSE will provide the input and service suppliers with extension materials and encourage them to take a role in disseminating these materials to producers. This is one part of our strategy to make project activities more sustainable after the project closes. The DDAs are also incorporated into AVANSE's extension activities, so they can understand, contribute to, and support a private sector approach for providing technical services to producers after the project ends.

The calendar for the discrete field training sessions is determined by the cropping cycles and is depicted graphically in Figure 9. Strategies to ensure that key inputs are available commercially in a timely manner are described under Sub-IR 1.3 activities.

Activity 1.2.11: Capacity-Building Support to the DDAs and BACs

The members of the IR 1 team, under the direction and coordination of the COP and DCOP, will continue to interact closely with the two DDAs in the north and northeast, organizing joint field activities and providing capacity-building support to BACs. A recent recruitment drive led to a number of new BAC directors being hired.

AVANSE has been supporting and assisting the BAC officers (local extension agents) by providing the additional knowledge and skills needed to help producers in the north and northeast. The plan is to continue to include these new recruits in trainings in order to help them master various techniques, such as SRI and grafting at the PISA nursery, so they can continue to provide support to farmers after the project ends. They have a particularly important role to play in the development of the water user associations.

There is also a growing collaboration with the Department of Environment staff and the municipalities.

SUB-IR 1.3: ACCESS TO INPUTS INCREASED

Activity 1.3.8: Support to a Soil Testing Laboratory

A grant was made to CHCL/UH at Limonade to establish a soil-testing laboratory including equipment and technical training with technical support from the University of Auburn. The equipment has been installed and the staff trained, both at Auburn and in Haiti. In Q1 FY 2019, the final training and commissioning of the laboratory will occur with a formal opening planned in Q2.

Figure 9: Training Schedule for Producers in Each Value Chain

CROP	Jan	Feb	March	April	May	June	July	Aug	Sep	Oct	Nov	Dec
CACAO	Establishment and maintenance of new cacao plantations							Establishment and maintenance of new cacao plantations				
	Productivity- increasing measures for existing cacao plantations					Productivity-increasing measures for existing cacao plantations						
						Rehabilitation techniques for old cacao trees						
			Major diseases, insects and other pests of cacao and control methods					Diseases, insects and other pests of cacao and control methods				
	Harvest and post-harvest treatment of cocoa for improved marketing											
PLANTAIN				Soil preparation Field layout, sucker selection, trimming,and planting. Nematode control				Soils preparation Field layout, hole digging, selection of suckers, trimming,and planting				

CROP	Jan	Feb	March	April	May	June	July	Aug	Sep	Oct	Nov	Dec
PLANTAIN					Weeding, fertilization, preparing holes, fertilizer/manure, application of herbicide, leaf removal/desuckering, pistil removal					Weeding, fertilization, application of herbicide, leaf removal/de-suckering, pistil removal		
						Disease control				Disease control		
						Harvest techniques, post-harvest treatments, marketing					Harvest techniques, post-harvest treatments, marketing	
RICE	Soil preparation					Soil preparation						Soil preparation
	Variety choice Preparation of seeds in nursery						Variety choice Preparation of seeds in nursery					
	Transplanting, water control in the plot						Transplanting, water control in the plot					
		Fertilization and fertility management, weeding						Fertilization and fertility management, weeding				
				Different problems in rice crop						Different problems in rice crop		
						Harvest techniques, post-harvest operations, marketing					Harvest techniques, post-harvest operations, marketing	

Updated Select IR 1 Life-of-Project Results

- Increases in gross margin per ha of selected crops in targeted corridors: rice 300 percent; bananas/plantains 100 percent; cacao 147 percent
- Increases in yield per hectare for focus crops in the targeted corridors: rice 156 percent; plantain 109 percent, cacao 80 percent
- 10 new technologies/management practices introduced
- 23,500 ha under improved technologies or management practices:
  - Rice: 3,000 ha
  - Plantains/bananas: 4,000 ha
  - Cacao 11,500 ha
  - Natural Resource Management: 3,000 ha
  - Irrigation: 2,000 ha
- 30,500 rural households that apply new technologies or management practices
- 33,000 individuals have received U.S. Government supported short-term agricultural sector productivity or food security training

INFRASTRUCTURE

LESSONS LEARNED TO DATE

The last three years of project implementation have faced a range of issues and constraints. As a result, little progress has been made on extending the irrigated area in the north and northeast.

Some of the key lessons learned that have helped form the specific activities developed for FY 2019 are:

- Water management is crucial to the development and success of the rice and plantain/banana sector.
- The data available (on watersheds, rivers, ground water, etc.) are limited, difficult to find, often dated, and frequently scattered widely across government agencies, Ministries, and donor files.
- Collaboration with government ministries (particularly with MARNDR's Agricultural Infrastructure Directorate) is crucial in terms of strategic direction, policy compliance, and long-term sustainability.
- The integration of MARNDR, especially local staff, needs to start right from the beginning of program design as a way to ensure a sustainable exit. Integration should include strengthening local institutional capacity (human resource competencies, operating equipment, etc.).
- Engagement and establishment of strong WUAs for each project is essential to achieving AVANSE's goals and targets for irrigation and sustainability.

OVERVIEW

In 2019, the Infrastructure Team will primarily manage and monitor the construction of two USAID-approved AVANSE irrigation construction sub-projects:

- The Dubré Irrigation System Rehabilitation and Improvements Project; and
- The Chalopin Irrigation System – Primary Canal Construction.

This responsibility includes monitoring the subcontractor's implementation of the sub-project's environmental mitigation and monitoring plans (EMMPs) during construction. The Infrastructure Team will carry out additional activities during 2019 as follows:

1. **Training in Sustainability/Resilience of WUAs and MARNDR staff** on AVANSE-funded infrastructure operation & maintenance (Dubre, Chalopin, Jamb Pantalon)
2. **implementing** a well improvement program in Limonade
3. **Collecting and recording hydrologic data** from selected north and northeast surface and groundwater sources
4. **Support to community-based organizations** such as the WUAs and other community NGOs operating around the Dubré and Chalopin perimeters
5. **Work with the Grants/Subcontracts/Procurement team on managing minor grant-funded construction** activities.

STAFFING

This section and Figure 1 provide more details on the staffing of the AVANSE Infrastructure Team, which has engineering, construction management, physical survey, water resource measurement, and community-based organizational support capabilities and experience. The group is supported by experienced AVANSE project, administrative, and procurement managers and home office staff.

In 2018, an LTTA expatriate irrigation/civil engineer trained AVANSE's Haitian staff to manage the construction of the two infrastructure sub-projects, and to report to USAID on all the engineering and construction issues that affect other AVANSE activities.

The group has ICT gear (computers, tablets, cameras and mobile phones, engineering software, field inspection tools, and personal protection equipment), as well as testing equipment at the Limonade University Soils Laboratory for use during the AVANSE construction activities.

The following AVANSE operational plans were adopted in 2017:

- **Quality Control/Quality Assurance Plan**: Guides AVANSE engineering and construction management activities
- **Health & Safety Plan**: Specifies AVANSE's staff' procedures for operating in and around construction sites
- **Procurement Plan**: Used to plan and execute construction contracts and other engineering group procurement planning and execution
- **Document Control Plan**: Used to file and archive all electronic and hard-copy sub-project documents and establish official record documentation

SUB-IR 1.4: IRRIGATION SYSTEMS REHABILITATED/CONSTRUCTED

Activity 1.4: Construction Management (Dubré and Chalopin)

Table 18 summarizes the AVANSE infrastructure construction sub-projects to be finished during 2019. Both of these sub-projects are scheduled to be completed in eight months. This includes an estimated six-to eight-week hiatus for the anticipated rainy season from 15 November to end December 2018 (see attached schedule). Note that this actual construction period does not cover all of the sustainability/resilience training that the Infrastructure Team will carry out.

Table 18: Summary Costs/Schedule of AVANSE Irrigation Projects

#	Name of Project	Estimate or Bid Price	Period of Construction		Projected Construction Contract Dates	
		$	Days	Months	Start	End
1	**Dubre Irrigation System Rehabilitation and Improvements**	[redacted]	240	8.0	20 October 18	20 June 19
2	**Chalopin Irrigation System: Main Canal Construction**		240	8.0	15 November 18	30 July 19

Output 1.4a: Completion of Dubre and Chalopin sub-projects

Construction management will be carried out by office staff with full-time field staff on-site and will include the following activities:

a. Sub-Project Management

i. Sub-contract oversight
ii. Quarterly reporting
iii. Liaison with MARNDR and other GOH agencies as needed

iv. Document control
v. COP, DCOP, project engineer, other staff field trips to site

b. Full-Time On-Site Management

i. Daily inspection and observation
ii. Daily reporting
iii. Quality control, material inspections, sampling, and testing
iv. Monitoring the periodic EMMP activity delivery requirements
v. Site health and safety monitory

c. Construction Administration

i. RFI responses and management
ii. Potential variation review and processing
iii. Monthly progress meetings
iv. Monthly construction reporting
v. Periodic unit quantity and payment certifications
vi. Document control

d. Quality Assurance/Control

i. Physical survey checking and controls
ii. Submission review and approval

These construction sub-projects will be supplemented in the irrigated command areas by the AVANSE community grant program. (See Activity 1.4.5 below)

SUB-IR 1.4.1: MANAGEMENT CAPACITY OF WATER USER ASSOCIATIONS INCREASED

Activity 1.4.1: Construction Coordination and Training

Output 1.4.1a Support to the community during construction of Dubre and Chalopin

The CBO Support Team consists of two senior community organization specialists and two community organizers, one each for Dubré and Chalopin. This team is already well positioned in the communities and has a working relationship with the two WUAs and links to other community NGO s including women's groups. The CBO Team will engage the WUAs when the sub-contractor agreement is signed and will manage the communication and coordination between the sub-contractor and the local farmer groups. The CBO Support team is responsible for: coordination between the sub-contractor and the WUA and administrative training of the WUA.

Construction coordination will include scheduling construction with farmers so as to minimize cropping disruption and farm access and to ensure farmer and farm family safety during construction. Administrative training will be provided to assist the WUAs in strengthening their internal administrative capabilities so as to improve their operations, build trust within the membership, and be better prepared to undertake more organized system operation and maintenance (O&M) activities after construction is completed.

Output 1.4.1b: Water user associations trained in sustainability and resilience

AVANSE intends to ensure that irrigation and drainage systems upgraded with USAID/Haiti financial resources will provide benefits and have a reasonable service lifespan of 20 to 25 years. During 2018, the team:

1. **Held meetings with local water user associations and other community groups**, meeting frequently with farmers, community leaders, and women's groups at each sub-project site. They were informed that any construction work AVANSE might perform within their systems **must** include their commitment to improve operation and maintenance activities. They agreed enthusiastically and requested training;
2. **Obtained written local commitment to better manage and implement improved O&M practices**: The team obtained Farm and Irrigation Association commitment to these conditions.
3. **Developed a plan to produce an O&M manual for each AVANSE irrigation system under the construction program**: AVANSE staff have experience in producing "real world" O&M manuals for owners of many types of construction. While this is normally done for more sophisticated works, the team intends to do this for completed sub-projects and then use these manuals as training guides for the irrigation associations.
4. **Developed preliminary O&M annual costs**: AVANSE has also developed annual O&M costs for each system, which have been used in system economic analyses. These costs will be updated and included in the O&M plans.

AVANSE staff will use this information in 2019 and continue working with these organizations on each sub-project, especially as construction is winding down, to foster sustainable and resilient completed sub-projects and organizations.

O&M-specific training will be provided to community organizations that are the future "owners" of the AVANSE-funded infrastructure. The team will also provide training to women's groups in the sub-project areas and an in-kind grant program will be carried out in association with each sub-project. AVANSE's infrastructure engineers and construction managers will assist the CBO team in this work. Training topics in sustainability and resilience for the beneficiaries will include:

a. Managing and scheduling irrigation rotations and deliveries
    i. Authorities and responsibilities
        1. President
        2. Ditch master 1
        3. Ditch master 2
b. Water measurement
    i. Water conservation
    ii. Water and schedule record keeping
c. Annual maintenance requirements
    i. Management
    ii. Calendar
    iii. User responsibilities
    iv. Types of maintenance
    v. Diversion structures

vi. Gates
vii. Concrete walls
viii. Gabion walls
ix. Feeder canals gates
x. Lined primary and secondary canal
xi. Lined tertiary canals
xii. Roadways and paths
xiii. Bridges
xiv. Drainage channels

d. Disaster maintenance responsibilities
e. Environmental issues and prevention within the system
f. System Drainage and drainage infrastructure maintenance

Output 1.4.1c: MARNDR and WUA O&M training

CBO staff and engineers will work with the concerned MARNDR staff on each sub-project to include them in this irrigation association (IA) training, and provide them with information and assistance in developing plans and procedures that they can use to schedule periodic visits to assist the IAs in the management and upkeep of their systems.

Activity 1.4.2: Refinement of the Water Balance Model

As droughts become more frequent and are followed by large rainstorms, water management and improved irrigation is necessary for farmers to continue increasing their yields. To assist farmers' decision making, AVANSE will continue to carry out data collection and collaboration on water resources and updating the hydrologic water balance model.

Output 4.1.2a: Hydrological data collection and refinement of the water balance

AVANSE will continue to monitor surface water and groundwater in the north and northeast, adding to the data collected in 2017 and 2018 and used in the groundwater model developed with the French Geological Survey (BRGM). This monitoring program measures the weekly flow rates of five rivers: Jassa, Marion, Grande Rivière du Nord, Trou de Nord, and Haut de Cap. To complement this river flow data, AVANSE maintains nine rain gauges measuring rainfall in each river system. AVANSE technicians also monitor wells weekly, collecting static water level, electro-conductivity, temperature, and pH in areas of agricultural interest including Ferrier, Ouanaminthe, Limonade, Bas Limbe, and Caracol. This information is being used in AVANSE's well improvement program, enables improved calibration of the AVANSE groundwater model, and helps lay the ground work for comprehensive water management in the Northern Corridor. Plans are well advanced for the work to be taken over post-AVANSE and continued by the IDB, creating an integrated and sustainable approach to water resource management.

AVANSE will also continue to update the BRGM hydrological model by adding river flow and flood data so as to better predict ground and surface water resource availability. Specifically to support the well improvement program, and to minimize down-gradient effects of the intervention, AVANSE will:

- **Calculate yield and extraction rates** in relation to other area water uses and available supply. These calculations should take historic and projected up-gradient uses and depth to the water table into account.
- **Design improvements with an appropriate scale and capacity**. Demand projections should take into account the likelihood that the project will attract additional users. Accordingly, AVANSE will estimate current and projected water quantity and availability based on: current

water sources and existing uses, baseline measurements on quantity of water available (including seasonal fluctuations), current and historic use data (household, agricultural, and institutional), population data and forecasts, current and projected demand up and down stream/up and down gradient, and actual water use for similar projects in the past.

- **Assess water quality** to determine if water is safe to irrigate with and to establish a baseline so that any future degradation can be detected. Collaborate on water quality using data from Haiti Outreach and IDB-funded work.
- **Maintain periodic testing**. Ongoing testing is the only way to determine if a water supply is or has become contaminated. A baseline must be established for comparison purposes.

Activity 1.4.3: Designing and Implementing a Well-Based Irrigation Program

Output 1.4.3a: Irrigation projects for groups of farmers on less than 25 hectares using wells tapping the unconfined alluvial aquifer in the northern plain

Based on the previously developed BRGM hydrologic assessment, water availability for these small pump irrigation systems in the northern plain should not be a limiting factor. Mapping of the alluvial aquifer has been completed. This map identifies productive areas as well as areas with reduced recovery potential; and although the amounts proposed for pumping are small, placement of the wells will reflect the potential combined impact on water levels from existing neighboring wells. Some hydrogeological assessment will be necessary to predict the size of the cone of depression associated with each well and design possible mitigation measures where necessary. AVANSE has been pump testing wells and found that the rate of pumping even if increased for plantain irrigation would deplete water levels only temporarily, during the dry season. This depletion on the unconfined alluvial aquifer should not have any long-term impact, and water levels would recover immediately (except in Trou du Nord). Pumping tests carried out at the Caracol Industrial Park showed that a well pumping at a sustained yield of 50 to 60 liters per second resulted in a 20 meters drawdown at the well and a 3 meters drawdown at a test well 16 meters away.

While the proposed pumping of groundwater for plantain production will not place a large additional demand on groundwater resources, cumulative impact could compromise the viability of some investments, especially in the coastal areas if increased seawater intrusion occurs. For instance, the Cap Haitien aquifer is already stressed and lower than sea level. AVANSE has collected more than a year of water levels and conductivity measures in more than 30 strategically identified wells spread over the north and northeast. The development of groundwater pumping for plantain irrigation would require continued and expanded monitoring of groundwater quality and availability.

These pumped systems will be designed and installed in collaboration with communities using the following principles:

- **A community outreach program must accompany any well development**. Community participation and awareness building are essential to achieving sustainable changes.
- **Cost sharing to minimize subsidies**. When groups share the cost, they feel a sense of ownership and responsibility. This reduces overall cost, increases correct usage, and improves maintenance. It also has positive effects on ownership, community support, and long-term sustainability.
- **Use a participatory approach to choose the technology,** one that actively engages the community in all stages of the project, including planning and development of the management

systems, establishment of user fees, construction, and operation and maintenance. This will lead to appropriate design and generate the community commitment and support needed for maintenance of the wells.

- **Draw upon existing community organizations instead of starting new ones.**
- **Design the program so that it will be economically self-sustaining**. This requires cost recovery mechanisms such as user fees, taxes or levies to finance operations, monitoring, maintenance, and repairs, along with a sustainable management structure for collecting and overseeing these fees.
- **Include a system for sustaining operation and maintenance** as part of overall program design, including a mechanism for training local residents to operate, monitor, maintain, and repair the improvement. Education and training for locals on simple water testing and monitoring will be provided.

To reduce the vulnerability of plantain farmers to drought, a program is planned to access the groundwater in the Bord de Mer/Limonade zone, spanning two watersheds: Grande Rivière du Nord and Trou du Nord. Measurements conducted by AVANSE during the Programmatic Environmental Assessment (PEA) and again recently concluded that even during low season, the surface flows in the Grande Rivière du Nord are providing up to 21 million cubic meters in recharge to the groundwater, allowing for up to 2,000 ha of land to be irrigated with this surface water. In addition, the productive aquifer in the Grande Rivière du Nord watershed and the presence of many currently abandoned, but potentially serviceable and functional wells means that, with well rehabilitation and farmer organizations to operate and maintain these systems, another 750 ha can be irrigated. Of the 50 wells tested to date, 35 had sufficient water during the dry season to use for irrigation. The plantain field team, together with the irrigation engineers, will work to improve these wells, install these pumps and, if necessary, organize farmers into groups to maintain them, with the aid of the water user specialist.

The FY 2019 activities may include:

- Improving existing wells or drilling selected new wells;
- Providing farmers with appropriate pumps; and
- Designing distribution systems to irrigate the fields.

Activity 1.4.4: Grants to the Community (Dubré and Chalopin)

Output 1.4.4a: CBO Support

Community engagement grants (in-kind grants) will not exceed [redacted] per grantee, and AVANSE will procure the goods and services on behalf of the recipient. The "community" in the title refers to the areas surrounding the focal points, such as the Dubre, Chalopin, or well-based irrigation sites.

These grants-in-kind will expand engagement with the communities the program operates in and improve its ability to meet its objectives in terms of hectares of land under improved irrigation and drainage. To summarize:

- To build on successes and increase impact, these new community grants will target key locations and be tied to ongoing initiatives.

- A creative approach to identifying high impact interventions will be utilized. Local participatory meetings will serve as the basis for assessing a community's priority needs and awarding grants.
- These additional grant resources will be used to help build resilience and assist community participants to take more responsibility for their future.
- Community contributions, whether labor or materials, will serve as an empowering opportunity to mobilize pre-existing resources, showing a way forward for continued growth post-AVASNE.
- Particular attention will be given to scaling up the impact of successful existing initiatives.

Recipients will be expected to provide cost-share contributions, also either in-kind or cash, to further leverage the grant funding *and* to create ownership by the grantee. All cost-share contributions by the grantee would be in *addition* to the in-kind grant funds provided by AVANSE. The team will also seek private sector investment/leverage where possible, also as an addition to the AVANSE grant funds.

Activity 1.4.5: Procurement Support

AVANSE grant activities can include construction funded by the grantees themselves. In some cases, these Haitian grantees request engineering planning, survey, design, cost, and/or construction management advice. The Infrastructure Team sometimes provides this informal assistance when requested. In 2019, some examples of this kind of activity will include:

1. **UPBH Banana Farm Grant**: Provide physical farm layout surveys, assist in the planning of the pack house siting, utilities, driveways, parking lot, site drainage, irrigation system layout, location of farm drains, etc.;
2. **CLES Rice Processing Grant**: Assistance and advice for site planning for access, parking, utilities, drainage, building layout, soil issues, power supply, etc.; and
3. **Novella Cocoa Processing Plant Grant**: Site location review, building suitability, structural rehabilitations, and other reviews.

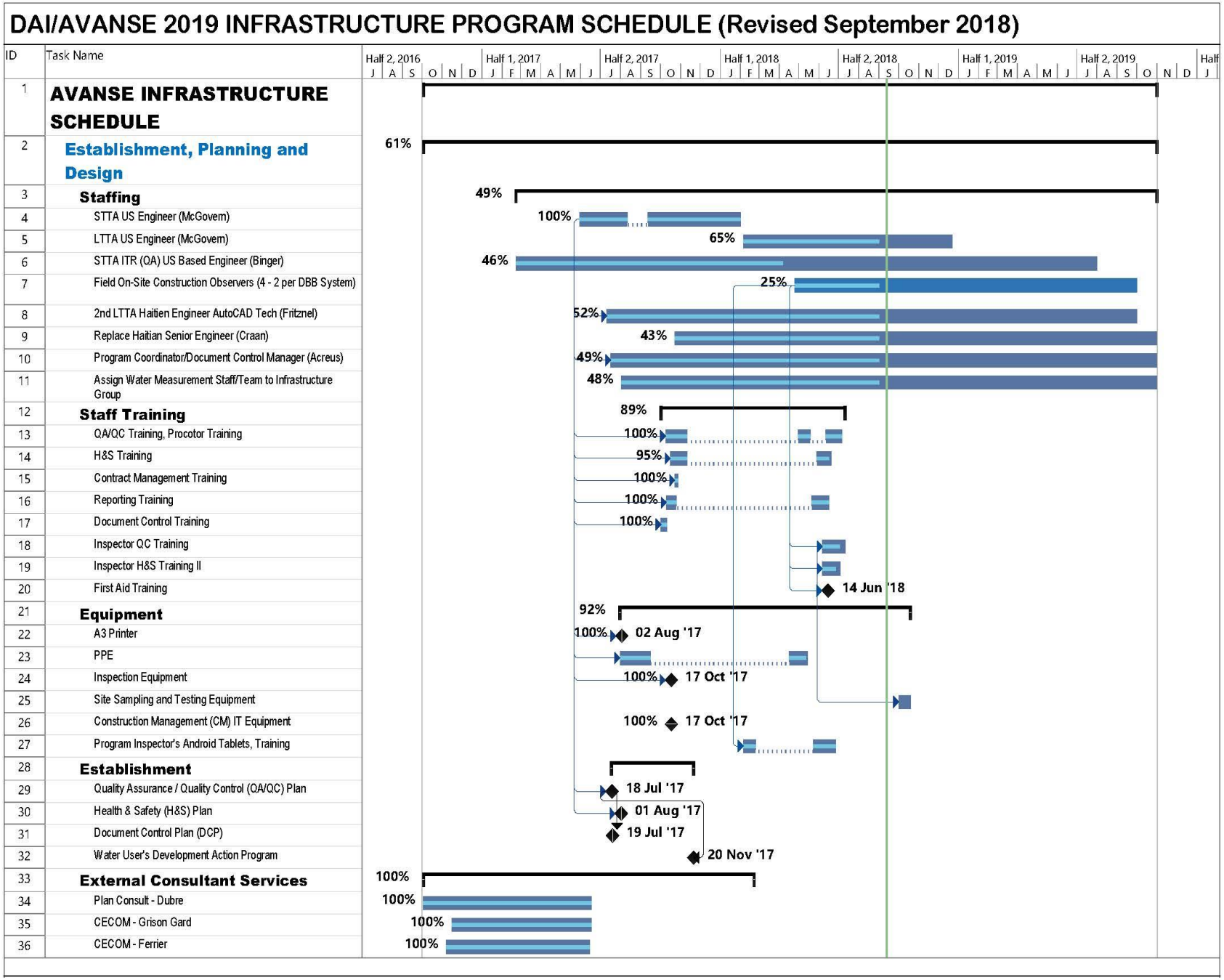
Anticipated RESULTS

1. Dubré Irrigation Sub-project completed
2. Chalopin Irrigation Sub-project completed
3. Dubre Water Users Association trained in sustainability and resilience O&M
4. Chalopin Water Users Association trained in sustainability and resilience O&M
5. MARNDR staff trained in O&M
6. Continued surface and groundwater data collection and sustainability plan
7. Improvements to the BRGM hydrological water balance model
8. Well-based irrigation program established on 229 ha
9. Small grants made to communities around Dubre, Chalopin, and well sites

SCHEDULE

Figure 10 shows the schedule for the FY 2019 Infrastructure Team activities.

DAI/AVANSE 2019 INFRASTRUCTURE PROGRAM SCHEDULE (Revised September 2018)



DAI/AVANSE 2019 INFRASTRUCTURE PROGRAM SCHEDULE (Revised September 2018)

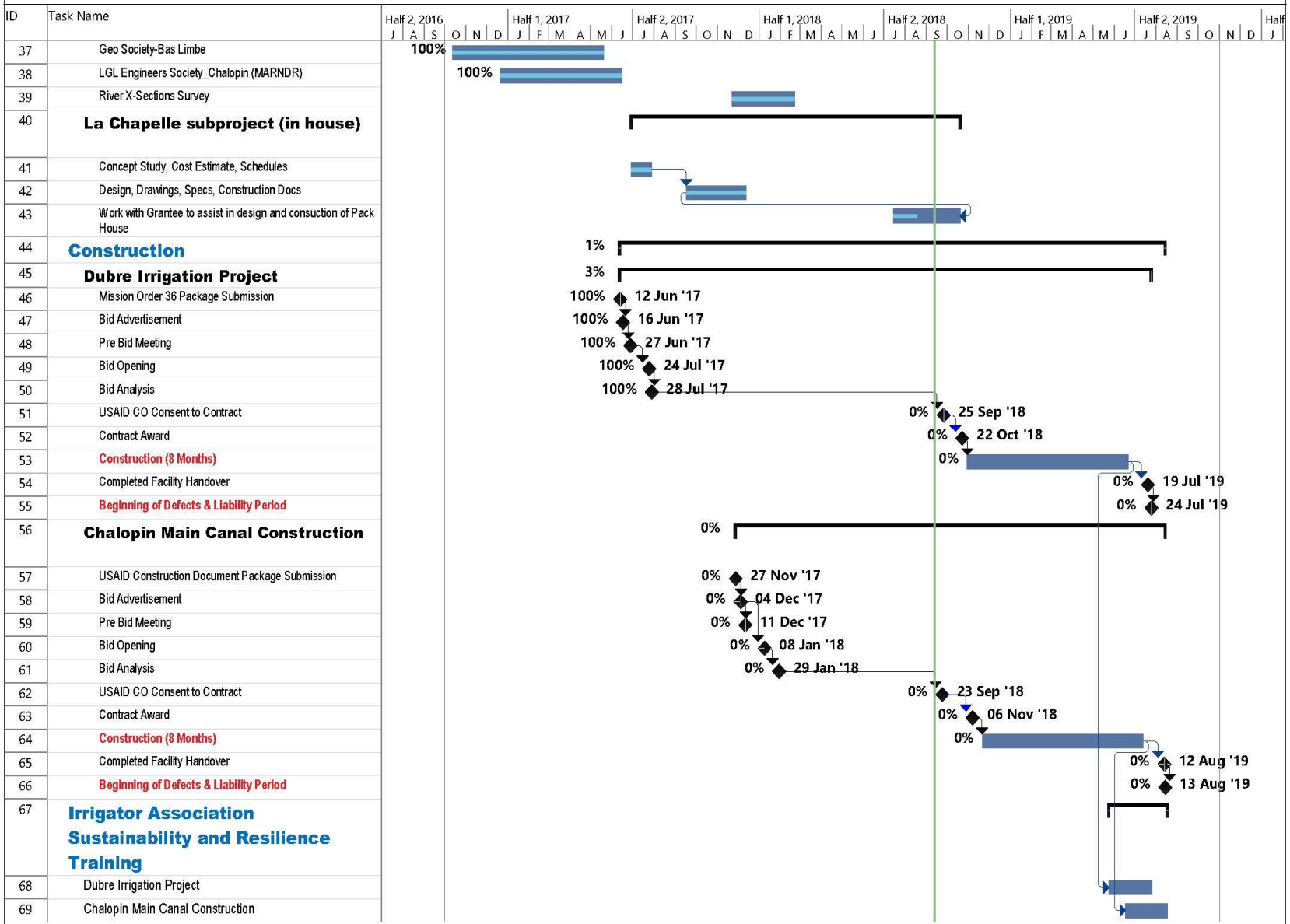


Table 19: Irrigation/Drainage/WUA: Activities/Results/Verification

Main Activity	Output/Result	Means of Verification
Rehabilitation/repair of the irrigation and drainage systems at Chalopin and Dubré	At least 470 irrigated ha under improved water management systems in the two irrigation systems	Provide GPS data for all rehabilitated areas. Improved plots show structures visibly improved. Photo-documentation of all the sites showing before and after pictures
Identify and plan improvement activities for additional irrigated areas; conduct technical and economic feasibility studies of pumped irrigation in Limonade and Quartier Morin	At least 450 irrigated ha under improved water management systems at the pumped irrigation sites	GPS locate all rehabilitated areas. Measurement on improved plots, showing structures visibly improved. Photo-documentation of all the sites showing before and after pictures
Strategic selection of sites to optimize impact and provide a minimum of 1,000 ha of rice and plantain supported by the project in FY 2019	At least 1,500 producers have increased economic benefits and improved their revenues from irrigated production, including plantain and rice	Preparation of a report showed increased access to irrigation water by rice and plantain farmers in the north and northeast
Organize and train two WUAs. Train 500 people in better water management techniques, and at least 10 managers in the collection of fees and the better repair and maintenance of their systems	Two WUAs have the legal status to collect user fees. WUAs have set fees and are collecting sufficient funds to maintain systems. More women in management Conflicts over water use are being resolved	WUAs present their accounts, which show fee collection and an increase from their prior practices

IR 2: WATERSHED STABILITY ABOVE SELECTED PLAINS IMPROVED

In the last three years, AVANSE's natural resources management (NRM) team has provided grants to CBOs and worked with them to manage communal work groups (*konbits*). These konbits have been supported to improve watershed management on their hillside plots and to reduce erosion. The goal of the CBO grants was to develop a biophysical/cropping model that is economically sustainable, would stabilize hill slopes, start to regenerate soil fertility and generate both food and income for hillside farmers.

By working through and with local CBOs on the field work, AVANSE has avoided some of the costs associated with the organization and management of these labor-intensive interventions. This approach based on agro climatic, market, and natural-resource factors uses a traditional self-help system and builds community skills in natural resource management.

AVANSE's NRM activities end in December 2018. Given the drought in FY 2018, AVANSE still has a number of activities planned in Q1 FY 2019. AVANSE intends to spend the remaining balance of the CBO grant funds on more vegetative materials to replace those lost during the drought and thus consolidate the improvements already made. A follow up survey will be made of the survival rates of the trees planted in 2018 to compare with the previous surveys in September 2017 and March 2018.

Discussions have been held with the reforestation project about that project continuing the work done under AVANSE, but unfortunately both their project locations and technical approach are different.

To commemorate the successful completion of the project and the hard work done by all involved, closing ceremonies will be held in Q1 FY2019 with the 11 CBOs that have been working with AVANSE to stabilize slopes, improve fertility, and increase farmer's incomes.

Activity 2.1.1: Survey the Establishment Rate of Trees Planted

In September 2017, a survey was conducted to establish the survival rates of trees planted by AVANSE at seven locations. The percent survival of fruit trees varied from 44 to 65 percent (average 51 percent) and forest trees from 52 to 74 percent (average 61 percent). A follow up survey in March 2018 had survival rates ranging from 6 to 40 percent for fruit trees and 9 to 44 percent for forest trees. Preliminary results in Q1 FY 2019 suggest these rates have been maintained.

The survival rate varies by tree type and by location. The survival rates measured in March 2018 are generally lower than those that had been measured in September 2017, largely due to the long drought from December 2017 to March 2018. What is interesting is that within a location, survival rates of the same species vary widely, suggesting that individual care may be a determinant.

In Q1 FY 2019, a final survival survey will be made across the CBO sites.

At the review and validation workshop of the Haiti 6th Country Biodiversity Report in November 2018, the main priorities for biodiversity protection in Haiti for the coming decades were presented. The team in charge of producing the country report for the Biodiversity Secretariat has asked to use AVANSE's NRM watershed-based agro-forestry to illustrate biodiversity governance in Haiti.

AVANSE's NRM approach, which focuses on supporting land restoration and slowing or reversing land degradation processes by promoting family-garden and farmers' exchange labor mechanisms leading to reforestation of heavily eroded lands, over time was praised as a good example of a governance strategy system capable of facilitating the restoration and protection of the country's biodiversity.

The involvement of existing CBOs in the identification of critically degraded land areas to be targeted for reforestation, the creation of blocks, and the ongoing management of the targeted areas after AVANSE meets the three requirements of a biodiversity governance system: 1) a management plan i.e. the watershed-based agro-forestry governance system for operations and maintenance implemented by a clearly identified 2) management unit (CBO) in charge of implementing the farmers' agreed upon 3) sustainability plan.

Table 20: NRM Activity Budget

Activities (NRM)	**FY 2019** Estimated **B**udget
Completion of the five new grants for hillside conservation work through CBOs	[redacted]
Direct management of revegetation at Grison-Garde and Bas-Limbé	
Direct management of revegetation on additional hectares	
Procurement of additional materials and workshop training costs	
Total	

Figure 11: NRM Targets and Results (FY 2014 – FY 2018)

AVANSE Program-Wide Objective: Increased Agricultural Income

- **Target:** 3,000 additional ha of hillside agriculture under improved agroforestry systems
  - **Result:** 2,891 ha at end of FY 2018
- **Target:** 5,000 people receiving USG-supported training in NRM and biodiversity conservation
  - **Result:** 6,479 people received training
- **Target:** 5,000 people with increased economic benefits from sustainable NRM/conservation
  - **Result:** 10,243 people with increased economic benefits

IR 3: AGRICULTURAL MARKETS STRENGTHENED

OVERVIEW

Strong and dynamic agricultural markets in the Northern Corridor, and enhanced access to agricultural technology and improved inputs, including finance and business services, are critical to improving agricultural productivity and food security in Haiti. Strong, dynamic markets require value-added handling, packing, and processing of large volumes of quality products by businesses. Enhanced access to machinery, inputs, credit, and other business services is essential for not only AVANSE's crops, but for the commercial success of Haiti's agriculture. In FY 2019, AVANSE will continue working with local communities and civil society to collaborate with the private sector, with a focus on post-harvest and processing activities, marketing, and input supply (including seed and seedling production). AVANSE will foster strategic partnerships with these stakeholders to improve the reach, effectiveness, efficiency, and sustainability of its efforts. For the maximum impact, it will target partners with the greatest potential to sustainably improve agricultural production, marketing, sales, and, ultimately, income.

Key to the sustainability of AVANSE's initiatives is that its innovations are widely adopted and all the major regional stakeholders are invested in continuing them. AVANSE will use this final year to widely disseminate information, strengthen its existing relationships, and find new ways to improve its communication with the private sector, communities, and government. It will work hard to deepen the engagement of all these stakeholders so they can replace the direct role of the project.

To achieve maximum impact, it is important to consider the different roles of women and men, and the differential impact all the programs have on men's and women's lives. IR 3 will advance Haitian women's leadership, participation, and decision-making in agribusiness and support targeted interventions that address issues unique to Haitian female producers and traders (*Ti machann* and *Madam Sara*).

IR 3 will implement these interventions in collaboration with private sector actors to increase access to inputs, technologies, business services, credit, post-harvest processing, storage, quality improvement, and marketing initiatives. The team will also use a flexible co-creation process that has been used by DAI on other farmer-to-farmer (FTF) projects to increase the engagement and role of the private sector.

AVANSE will facilitate inclusive and sustainable agricultural-led economic growth, help generate income, create employment, and encourage agricultural entrepreneurship opportunities for all with an emphasis on women and youth (15-24). It will continue to help established as well as nascent enterprises expand their operations through a customer (farmer)-oriented business growth strategy, working with them to design and implement business and marketing tactics that increase their profits, improve their utility to farmers, and build customers' loyalty.

AVANSE will facilitate the necessary linkages between key agribusinesses and financial institutions and business service providers to ensure that keystone firms can implement their growth strategies, finance their business expansion, and undertake strategic investments. Information will be shared with and between agricultural equipment, input, service companies, etc. This will help ensure that USAID's initial investments are more effective and that the agribusiness sector in Northern Haiti continues to expand.

In FY 2019, AVANSE plans to implement a new set of grants, community engagement grants (in-kind grants) that will not exceed [redacted] per grantee, and will procure goods and services on behalf of the recipient. "Community" refers to areas where AVANSE is investing in agribusiness or services related to agriculture.

Recipients will be expected to provide cost-share contributions, either in-kind or cash, to further leverage the grant funding and, more importantly, to create ownership by the grantee. AVANSE will also seek private-sector investment/leverage where possible, in addition to the AVANSE grant funds and community inputs.

These new grants-in-kind will expand project engagement with the communities it operates in, and improve its ability to meet its objectives in terms of "increasing agribusiness sales" and "private sector leverage" indicators. They will also improve and provide resources to smaller agribusiness entrepreneurs.

To summarize, in FY 2019, IR 3 will:

- Increase impact by focusing on key activities to ensure synergies and more sustainable outcomes.
- Hold local participatory meetings to engage more private sector and community partners.
- Partner with and link communities to public and private entities to help build their resilience and allow beneficiaries to take more ownership for their future.
- Share a range of technical information more widely using a variety of methods, including radio and mobile phones.
- Increase farmers' and small enterprises' access to finance.
- Pay particular attention to scaling up the impact of existing successful initiatives.

Activities implemented under IR 3 will focus on working with the private sector, with the focus on post-harvest and processing activities, marketing, and input supply (including seed and seedling production). The following are the AVANSE targets:

- 200 percent increase in the incremental value of rice sales,
- 200 percent increase in the incremental value of bananas/plantain sales, and
- 150 percent increase in the incremental value of cacao sales.

SUB-IR 3.1: IMPROVED PROCESSING, TRANSFORMATION, AND MARKETING

Building competitive value chains that generate sales, attract investment, and create jobs in Northern Haiti requires stronger business partnerships among the value chains' stakeholders, reliable and timely information, increased access to investment and working capital, and expansion of those activities that have been shown to add value. More support to the agribusiness sector requires more involvement with the private sector, strong partnerships, and alignment of objectives, plus new and improved skills and a business mentality among all AVANSE's partners and staff.

Increased profits for agricultural producers and processors can be achieved through upgraded quality, improved processing, enhanced marketing, and better supply chain management. AVANSE is working with the private sector to introduce all these changes and thus increase revenues for producers. All ongoing and new processing, transformation, and marketing activities that are specific to a value chain will be integrated into and managed along with that value chain's IR 1 production activities. For example, cacao organic and fair trade certification will be done by the AVANSE cacao field staff.

EG.3.1-14: Value of new USG commitments and private sector investment leveraged by the USG to support food security and nutrition: LOP Target - $2,750,000

Activity 3.1.1: Rice Marketing

Output 3.1.1a: Establishment of a rice organization to provide support and regulatory functions, driven by key stakeholders

Activities of this organization could include:

- Establishment of farmer clusters around existing rice mills
- Developing new markets for locally produced rice in the local and diaspora markets
- Disseminating technical, grades, and standards information
- Organizing farmers throught the Farmer Field Schools (FFS) to produce and trade increased volumes and assure regular supplies, especially to integrated mills (CLES)
- Linking farmers to owners of tractors and farm equipment supplying services

Output 3.1.1b: Establish an integrated rice processing-marketing project in Ounaminthe, providing tillage, extension, and marketing services to producers

In FY 2017, a PPP was signed between CLES, HAYTRAC, PSF, and AVANSE to increase the production, productivity, and profitability of rice farmers in the Northern Corridor. The investments being made by AVANSE and its partners support AVANSE's agribusiness and private sector objectives, contribute toward investment and job creation targets, and help ensure that rice farmers will continue to receive extension, tillage, and marketing services post-AVANSE.

AVANSE has partnered with the rice NGO CLES in Ounaminthe and its commercial arm *Production Sans Frontières, S.A.* (PSF), and with HAYTRAC. In FY 2018, a grant of [redacted] was approved by USAID to provide CLES with machinery to improve their drying and milling facilities and significantly increase the local capacity for post-harvest handling, rice drying, and rice processing, which will enable CLES to expand its purchases of paddy rice locally. CLES/PSF's investment in the land, buildings, and the existing equipment to date is estimated at more than [redacted] CLES/PSF also plans to redistribute a portion of their profits to the members of their producers associations and to increase the purchase price per kilogram of paddy rice over time. Once this new machinery is installed, they will be well positioned to capture a larger share of the expected increase in rice production resulting from the investments that the GOH, AVANSE, MARNDR, and Action Aid are making in the irrigation system at Chalopin.

The grant will equip CLES with a rice pre-cleaner and an electric dryer (10 MT/6h), modernized milling equipment (15 MT/6h), two silos (56 MT and 109 MT) and a generator (150 kW) to run the equipment. The suppliers will give the rice mill plant staff training on equipment use and maintenance.

Activities in FY 2019 will include the final procurement and shipping of equipment to Northern Haiti. CLES has started the construction of the building to house the milling and bagging equipment. An improved set of plans and specifications is being prepared. Installation and commissioning of the new milling equipment should take place by the end of Q2 FY 2019. Installation and commissioning of the drier (in another new building) will follow in 2019.

CLES is expanding its provision of technical assistance to producers, based on the SRI/SRA technical advances AVANSE introduced to rice farmers. AVANSE is providing training to the staff members of the association, so they could provide that support post-project. Haytrac will provide commercial tillage services. In Q2 FY 2019, a finance consultant will work with CLES on cash flow, business planning, and financing.

Rice production has increased considerably with the application of the technologies promoted by AVANSE. In some plots at Coicou (one of AVANSE's intervention zones), purchases of rice have been up to 6.10 metric tons per hectare versus 5.15 MT at Ferrier and 4.46 MT at Ouanaminthe.

This creates a number of potential opportunities for additional intervention and technical assistance by the AVANSE project: expansion of extension activities to under-served areas, support for local dry storage of surplus crops, and promotion of marketing activities that create product differentiation due to added value. These could include seed multiplication of preferred varieties, local packaging businesses, updating small local mills' equipment, and capacity building in marketing.

Output 3.1.1c: Development of a public/private partnership and a network to improve local rice processing capacity in the north and northeast

A specific support program aimed at existing small rice mills and Madam Saras will organize and train a network of Madam Saras around these rice mills to ensure a regular supply of quality rice. If appropriate, in order to facilitate improved post-harvest handling, storage, and processing, AVANSE will set up communal storage centers for Madam Saras. This network of existing small-scale rice milling units will serve as a market and source for the Madam Saras, AVANSE will work with both small rice millers as well as Madam Saras to improve their technical capacity to produce better quality rice and to address food safety requirements. If appropriate, AVANSE will promote strategic partnerships between and among existing processing units in the targeted areas to improve their processing capacities in order to raise the quality of locally produced rice to international standards.

Output 3.1.1d: Sustainable dissemination of improved inputs and technologies

Particularly following a drought, farmers are short of working cash and, because labor costs are high, they may not plant single seedlings. In areas where apple snails are abundant, single seedlings are very susceptible, so the farmers modify the package by planting larger seedlings later. In preparation for the final report, this year the team will be surveying farmer SRA practices along with the costs and returns and the impact of each component of SRI. They will also produce a series of technical sheets adapted to the local rice farmers' needs. To continue the expansion of the Rice Team's extension work post-project, lead farmers will be selected and trained to act as champions, with particular attention to finding female farmers. AVANSE has been training farmers in seed production and marketing, and the demand for improved seed is high. In FY 2019, AVANSE will facilitate working relationships with other interested parties, including research institutes in the Dominican Republic, to test, multiply, and disseminate new rice varieties.

Activity 3.1.2: Cacao Marketing

Cocoa is primarily an export crop, although there is some local transformation and consumption. There are only a limited number of well-established, private sector buyers/exporters. These buyers have both the interest and capacity to make investments and to enter into partnerships with farmers to improve production and product quality.

Output 3.1.2a: PISA's farmers are certified organic and PISA establishes a nursery

AVANSE provided a grant of [redacted] o PISA in 2016 to build a fermentation center, construct drying tunnels, and establish a cacao nursery ($150,000/yr). Fermentation and superior drying methods improve the export cacao quality, resulting in better market opportunities and higher prices for local farmers.

In FY 2018, PISA was decertified organic because the rules stipulate that they must be purchasing cacao from a legally recognized association or cooperative after a three-year grace period. In FY2019, AVANSE will continue working with the current informal group of farmers that make up the majority of PISA suppliers to establish a legal entity. AVANSE will also complete the training and certification of these farmers for fair trade in FY2019.

AVANSE's IR 1 team will provide training to PISA staff on setting-up and managing their nursery, cacao grafting, and other production and regeneration techniques so the PISA team can train farmers.

Output 3.1.2b: Novella establishes cacao processing at Grande Rivière du Nord

As part of a PPP signed between AVANSE, Novella, and CPCN, AVANSE is assisting Novella to establish a new fermentation center in Grande Rivière du Nord. AVANSE's support includes training on fermentation techniques and the construction of drying tunnels. AVANSE has also trained cacao farmers in organic practices and is waiting for ECOCERT to schedule an external audit and obtain certification. Training in fair trade practices will continue for the farmers who supply to Novella in FY2019.

Output 3.1.2c: FECCANO upgrades its fermentation and constructs drying tunnels

FECCANO provides marketing and export services to eight cooperatives. To improve the quality of their export cacao, AVANSE is supporting these cooperatives to refurbish/upgrade their fermentation boxes, and building drying tunnels to improve drying and reduce mold and insect damage. Progress to date has been slow but is slated to be completed by FY 2019 Q2. The IR 1 Cacao Team is working with FECCANO on training farmers in orchard regeneration/maintenance. Four nurseries are scheduled for construction in 2019 (6,000 seedlings per nursery). The target is 30,000 seedlings.

Output 3.1.2d: AGROTECH establishes a cacao processing center in Les Perches

In FY 2018, AVANSE and AGROTECH collaborated to establish a new cacao processing center in Les Perches to make quality chocolate. This partnership provides local cacao producers with another market for their cacao. Participating producers will increase their revenues as AGROTECH plans to provide financial incentives to farmers to ensure their loyalty (i.e. market premiums). In FY 2019, construction of the new facility will be complete and AVANSE will provide the equipment and training to modernize the firm's chocolate production, enabling it to diversify its current product line, improve the end product (chocolate), and enhance product labeling and packaging. AVANSE also plans to provide training to build AGROTECH's staff capacity to manage and operate their new plant, resulting in high end chocolate products. The expanded facility and additional equipment will not only allow the processing of up to 80,000 pounds of cacao into chocolate after year four of operation of the processing center, but it will also greatly improve the marketability of the finished product.

AGROTECH will be able to expand its sourcing to more than 1,000 cacao producers who will have access to these improved market opportunities and receive training on sustainable agricultural practices. Their revenue could potentially increase by as much as 200 percent through various incentives (a market price premium and 10 percent of the annual net benefit redistributed to farmers). It is also anticipated that the firm will hire an additional 14 employees.

With support from AVANSE, AGROTECH will explore marketing opportunities with a potential partner, CASELI, who provides market access support to agribusinesses, to reach out to niche diaspora markets in the United States.

Output 3.1.2e: Community grants to local small-scale cacao processers

AVANSE will provide grants of less than [redacted] o small-scale cacao processors to upgrade their operations, increase their production, and improve the quality of locally consumed chocolate. This will increase jobs in the industry and provide addition outlets for cacao farmers to sell their produce.

Output 3.1.2f: Support to advance organic and fair trade certification processes

To facilitate the organic and fair trade certification processes, AVANSE plans to train local staff to become a resource and potentially a service provider for organic, fair trade, and environmental procedures to work with producer groups and exporters on certification.

The roles could include facilitating communication between producer groups and the certifying organizations (such as EcoCert), arranging the field logistics for certifying inspectors and accompanying them as appropriate and helping exporters and farmers groups to address issues raised by the certifiers, which are common in the organic and fair trade certification processes. The facilitator will help ensure compliance of farmers' groups and exporters with the terms and conditions of contracts/agreements

established for fair trade or organic marketed cacao. This support will be done by IR 1 staff in FY2019, with the goal of the private sector or the farmers' groups taking up the support in the future.

Activity 3.1.3: Banana/Plantain Marketing

Output 3.1.3a: Work with Bonnefil and UPBH to export bananas

In 2016, AVANSE made a grant to the *Union des Producteurs de Banane d'Haiti* (UPBH), an association of farmers who agreed to pool land to develop a modern banana export project. UPBH and AVANSE have an arrangement with the Dominican banana exporter, Banamiel, and the British importer, WINFRESH, to market all the production from the project. Banamiel would be responsible for collecting the product from the Haitian packing facility and exporting it through the banana terminal in Manzanillo.

The project was delayed in FY 2017 by procedural issues surrounding land ownership and the lease agreements with the small farmers, and then again in FY 2018 by the death of the landowner. These issues have now been resolved, and the project is moving forward again.

The main activity foreseen in 2019 is the implementation of the production and marketing agreement with the UPBH. This grant-funded activity is investing in a 50 ha demonstration banana farm at Bord de Mer in the Limonade area. This demonstration farm will operate using a sustainable production model that meets international market requirements while also improving rural livelihoods, with an estimated 20 farmers and 100 farm workers as direct beneficiaries.

This grant supports a partnership with the landowner and an association of local farmers. The grantee will fund the construction of an approximately 120m^2 packing house, complete with cleaning, sorting, grading, and loading facilities, plus appropriate wastewater and sewer systems. The site will also include small office facilities, fruit-rinsing tanks, fumigation chambers, restrooms, a conveyor system, a loading dock, an unpaved access road, and parking area for employees and trucks. The grantee has also installed a pump house on the river to serve the sprinkler irrigation system, and is providing erosion protection on the river banks. The AVANSE-funded portion of the project includes the pump and the sprinkler irrigation, drainage improvements, a geotechnical survey, a cableway, and the meristems and installation of 50 hectares of bananas. The additional costs in FY 2019 are likely to be around [redacted]

Marketing activities in 2019 include signing operating agreements between the association and the marketing agents/exporters, developing and implementing a fair trade certification system for the banana farm, and helping to facilitate local market sales of bananas that do not meet export standards.

Output 3.1.3 b: Increasing access to irrigation for plantain producers

To reduce the vulnerability of plantain farmers to drought, a program is planned to access the groundwater in the Bord de Mer/Limonade zone, spanning three watersheds, Haut du Cap, Grande Rivière du Nord, and Trou du Nord. Given the productive groundwater aquifer and the presence of many currently abandoned but potentially serviceable wells, AVANSE plans to rehabilitate these wells and organize farmers to operate pumps to irrigate approximately 500 additional ha. Farmers will be expected to contribute, and each individual/group will have a pump maintenance and replacement plan. Interested plantain teams' FFS will organize themselves so that each is formed around a single pump. So each FFS will essentially become a WUA in its own right. AVANSE anticipates organizing around 30-50 FFS in the zone with a pump covering 5 to 15 ha.

The FY 2019 activities will include providing farmers with pumps appropriately sized for their needs; and training them in their maintenance and use. The IR 1 plantain team will take the lead on this activity, designing distribution systems to irrigate the fields and training farmers in water use.

Output 3.1.3 c: Improving the marketability of plantains

Update the marketing study on plantains and assist Madam Saras to improve the quality and marketability of banana through improved post-harvest handling, including the introduction of plastic crates for transportation.

Key Staff and Partners

Key staff: IR 1 teams, working with agribusiness specialist, senior technical advisor, consultants

Key potential partners: Novella, PISA, FECCANO, AGROTECH, small cacao processors, CLES, small rice processors, Madam Saras, UPBH, Bonnefil

End-of-Project Outcomes:

- Increases in values of incremental sales by farmers attributed to FTF implementation as follows: **rice 200 percent; plantain/bananas 200 percent; cacao150 percent**
- Baseline incremental sales: rice $267,736 (351); plantain $1,337,456 (421); cacao $491,180 (2,277)
- Per beneficiary: rice $763, plantain $3,177, and cacao $216
- **30 percent** increase in value of agribusiness sales. LOP target **$3.8 million**
- **$2.75 million** in new private sector investments in the agricultural sector and food chain leveraged
- **At least 200 full-time jobs** are attributed to FTF implementation in the north

SUB-IR 3.2: IMPROVED MARKET INFORMATION SYSTEMS (MIS)

Agriculture market information systems (MIS) collect, process, and disseminate information on the dynamics of agricultural markets. The system can be used by farmers both for advocating for more producer-friendly policies (through farmers' organizations) and to guide their production and marketing decisions (choice of what, when, and where to sell).

Farmers in Haiti are often price takers and sell at less than optimum prices to intermediaries because they lack the volumes required by the market and do not have access to cost-effective transport. Real-time access to credible market information on price levels and changes at different points in the marketing chain helps farmers and other actors in the value chain to maximize their incomes. Strengthening smallholder farmers' access to market information can improve the bargaining position of these farmers and result in higher incomes. Timely information on prices being offered by the important markets helps farmers understand the potential returns available locally, and may encourage them to cooperate to offer larger quantities or to undergo a certification process that allows them to access new higher-value markets. AVANSE is working with MARNDR on building a system that provides farmers with detailed market information.

Activity 3.2.1: Establishing a Sustainable Market Information System (SIMA)

In 2016-2017, AVANSE gave a grant of [redacted] o the USAI of the MARNDR to implement a MIS, but because the pilot program was heavily subsidized by the AVANSE project, it was difficult for MARNDR to take it over financially. It was jointly agreed that there was a need to find another way to operate the system, to ensure sustainability. Based on what AVANSE has learned in 2018, it has redesigned the program and brought in new partners, Digicel and BON, to establish a national farmer information service. An MOU is being signed with EU-BON, the way SIMA was operated by MARNDR has been changed so the BACs are directly involved in data collection, and Digicel has made a proposal to provide

their services to establish the software and hardware to implement both SMS and voice-activated information services. A public-private partnership is being developed with Digicel, and an application for additional grant funding of approximately $130,000 for SIMA is planned early in FY 2019. MARNDR will contribute a similar sum, and the Digicel contribution is dependent on its discounts for services, which is still under discussion.

In 2019, AVANSE, MARNDR, and Digicel intend to collaborate to establish a commercially sustainable SIMA program. The partners plan to transition SIMA from the pilot prepaid model to a "pay per use" service to reduce costs and transform the mechanism into a demand-driven service. The objective is to develop a commercially oriented, transactions-focused SIMA that will provide farmers and other users a whole range of information via different methods.

Output 3.2.1a: MARNDR and Digicel establish a national market information service

The national SIMA program is designed to include a whole range of different users (farmers, local traders (Madam Saras), wholesalers, distributors, NGOs, etc.). The pilot phase will allow AVANSE producers to have access to market information, but in the long-term, all 1.5 million farmers in the ministry database will have access.

In addition to price information, the system is being upgraded to include additional information such as extension information, availability of agricultural inputs, weather data, standard and quality requirements, and volumes. This information can be accessed via SMS and/or voice messaging. In a pilot phase funded by AVANSE, the SIMA will allow users to query the USSAI-MARNDR database for information on 10 to 12 products including cacao, beans, bananas, and rice, fruits, corn, etc.

Three types of interaction and transmission methods are available with the SIMA database: an interactive voice application (IVR), a USSD application (SMS), and web-based access. For those farmers that are illiterate and may have difficulties in using an SMS based system, the IVR will enable users to query the database directly. The website allows organizations and farmers with access to smart phones or computers to access the whole range of online data.

In parallel to these efforts, AVANSE supports training activities and publicity awareness campaigns to ensure that farmers understand how to access the information and benefits of using the system and the market opportunities that they provide. The project will also work with its beneficiaries, the ministry and Digicel to develop new ways for sharing the market information and other data, showing producers the value of using market data so they be willing to pay for the service after the subsidy period ends and the Ministry and Digicel take over the dissemination of the program.

AVANSE's assistance will primarily fund the development of the IVR and USSD applications and support to training of the famers and collectors.

The proposed specific activities include:

- Design a system to identify clients (farmers/traders and organizations) market; information needs and decide about the various products)
- Reorganize the current system to reduce the cost of data collection and processing
- Procure required infrastructure, equipment, and software for the new system
- Create the dissemination platform in partnership with Digicel
- Organize training workshops for users (farmers, traders, and collectors)

Output 3.2.1b: Support sustainable systems sharing technical information with farmers

AVANSE will continue to work with Novella, PISA, and FECCANO to encourage the diffusion of information on cacao market prices to the cacao farmers of Northern Haiti. This will be combined with

training to improve the farmers' understanding of how world market prices relate (or do not relate) to farm gate and local purchase prices for cacao, and the lag time in prices due to stocks, demand etc. Particular emphasis will be given to the premiums paid for organic and fair trade in the various markets and how that relates to their practices.

Discussions are under way with Digicel and the Ministry of Agriculture to develop a program to make a range of prices in their supply networks more easily available to farmers. Additional technical information will be shared on best practices. There are plans to use AVANSE's regular radio program to provide some of this background information. AVANSE is also working with exporters to develop a longer-term financing plan for this information sharing, involving them as much as possible in both the administration and financing of the system so that this initiative will continue after the project ends.

Key Staff and Partners

Key staff: IR 1 teams, working with agribusiness specialist, senior technical advisor, consultants

Key potential partners: MARNDR, DIGICEL European Union, farmers, Madam Saras

Main indicators for IR 3.2: Number of farmers accessing market information due to USG assistance: **Target 30,000**

End-of-project outcomes:

- Fully functional, semi-automated information system with a revenue stream
- Rural populations receive more high-quality, real-time information on prices and standards through a mobile phone or other media
- Rural populations receive targeted extension information in a timely manner

SUB IR 3.5: RELATIONSHIPS IN TARGETED VALUE CHAINS STRENGTHENED

One key to a competitive value chain is that the major stakeholders are vested in its success. To strengthen working relationships and improve the collaboration within the private sector, AVANSE has three sets of activities planned:

- Sharing information and facilitating the building of relationships and trust between producer groups and buyers for the mutual benefits of all parties.
- Strengthening the capacity of groups and associations through training, support, and facilitation of activities such as opening a bank account, negotiating a loan, or entering into formal contracts.
- Facilitating linkages between exporters and international buyers of cacao and bananas.

Activity 3.5.1 Sharing Information, Facilitating Relationships, and Building Trust between Producers and Suppliers

From FY 2014 until December 2017, AVANSE successfully implemented an agricultural input subsidy program using vouchers. The subsidy was gradually reduced each season. As part of this voucher program, AVANSE upgraded a number of input dealers' boutiques and linked producers to financial institutions. Since 2017, commercial links between these input providers and farmers continued, but input stores struggle to achieve the sales volumes they need to thrive in the market. In FY 2019,

AVANSE will develop partnerships between the input stores so they can make bulk purchases and achieve economies of scale thus improving the input supply chain in the north. AVANSE will also build partnerships with agricultural service providers to ensure an adequate supply of inputs including improved seed, fertilizer, agrochemicals, tractor services, credit, technology, extension services, and processing, although this will not be limited to these service providers.

In FY 2018, AVANSE continued to promote the adoption of new technologies by farmers and introduced hand and motorized weeders, irrigation pumps, and rototillers. To ensure the sustainability of farmers' investments, the project built a partnership with an agricultural equipment provider, Charles Fequiere, through which farmers can receive a full service package, including training on equipment use and after-sales services. In FY 2019, AVANSE plans to capitalize on this initiative and work with the partner to expand its coverage, introduce additional technologies, and improve the supply of equipment to farmers in the north. It will work with Charles Fequiere to include other potential suppliers/partners and machines/equipment for planting and weeding and add a credit mechanism for farmers. The input stores which the project has contributed to strengthen will be among the new partners in the purchase of agricultural tools, accessories and equipment

Output 3.5.1a: Increased availability of agricultural technology, services, and inputs

In FY 2019, AVANSE will work closely with agricultural input wholesalers to stimulate competition and strengthen their business model to concentrate on wholesale sales and the provision of other services, such as extension advice to input stores and farmers. In parallel, AVANSE will work with input dealers to reinforce their distribution system, help diversify their products and services and encourage them to regroup in a network so they benefit from economies of scale (i.e. group orders, transport, etc.) and increase their negotiating power. The partnership will emphasize knowledge transfer and capacity building of input stores' staff and potential agents to improve their marketing skills and the provision of extension services to farmers. AVANSE will also provide them with training of trainers (TOT), so they can train other farmers on the benefits of using improved inputs.

AVANSE intends to continue to work with Charles Fequiere to increase access to and sales of agricultural equipment. Ultimately, AVANSE will be facilitating Charles Fequiere to establish a permanent presence in the north. Charles Fequiere, with support from AVANSE, will organize a number of agricultural fairs/demonstrations to promote the use of modern agricultural equipment. With support from AVANSE, the firm will explore marketing tactics to develop farmers' loyalty and improve farmers' outreach to increase its sales.

To further increase availability of agriculture equipment to farmers in the north, AVANSE plans to broaden the existing PPP with HAYTRAC and introduce new activities. This could include a new leasing service for equipment as well as the sale of refurbished equipment.

AVANSE intends to expand partnerships with the Foundation of Vincent De Paul and develop other possible suppliers for the fabrication of rice and cacao production and processing equipment. It will also develop partnerships between international experts and agricultural service providers and Haitian service providers to expand the technical capacity of local service providers in pest and disease control (eg. *Sigatoka* control for plantain, apple snails on rice), irrigation-drainage techniques, and the introduction of new varieties.

In FY 2019, AVANSE will collaborate with the Appui à la Recherche et au Développement Agricole (AREA) project on evaluating the incidence of banana toppling disease (BTD) in Northern Haiti. Currently, little is known about the etiology, distribution, or economic consequences of BTD, but local growers report incidence rates reaching 30 percent. AVANSE will work with AREA to evaluate potential predictor variables for disease incidence, including weather, soil type, irrigation, nematodes, seed system, and tool management. Working with State University of Haiti's Faculty of Agronomy and

Veterinary Medicine (FAMV) and the AREA project, AVANSE will build a better understanding of current farmer management of the disease and the options for improving management.

Activity 3.5.2: The Capacity of Groups and Associations Strengthened through Training, Support, and Facilitation

Improving the financial management capacities of producers, associations and cooperatives is crucial to sustainability. In FY 2019, local service providers will deliver training services and the recipients will be expected to contribute financially. This kind of commercial relationship not only determines what trainings are seen as important by recipients, but it has the potential to continue after the end of the project. The financial company CASELI has developed training modules for farmers called "Farming as a business." CASELI is interested in developing its services in the north in collaboration with AVANSE. Commercial smallholders need to know how to manage their business, and make their investment profitable, and have access to working credit as the supply of agricultural services and equipment in the north expands.

Since the inception of the project, farmers, associations, and agro-enterprises have benefited from AVANSE training support to improve their technical, financial, and management skills. As these actors continue to grow, focusing on building their organizational capacity – instead of individual skills – will be critical to their sustainability. AVANSE will work with USAID's Local Enterprise and Value Chain Enhancement (LEVE) program to implement a human and institutional capacity development (HICD) program targeting agricultural associations, cooperatives, and enterprises, including women and young entrepreneurs. The curriculum will focus on local capacity development, finance, human resources, leadership skills, and business coaching. The approach will be to implement this through existing service providers, instead of direct provision, and to provide TOT to these entities on as-needed basis to ensure the sustainability of the service after the end of the project.

AVANSE will also work with BDS firms to provide "farming as a business" trainings to individual farmers and farmers' groups (i.e. CASELI) so they can make wiser business decisions as they invest in their farms (purchase of equipment and inputs, etc.). AVANSE will work with these companies to expand their offering to specific domestic value chains (i.e. plantain and rice) and tailor their products to female-owned businesses and youth. Some institutions are also supporting entrepreneurship through the development of incubation and acceleration services. Two prospective institutions include CASELI and the newly created Centre Financier aux Entrepreneurs (CFE) in Cap Haitian.

Output 3.5.2a: Better access to finance and business development services

Farmers and small and medium enterprises in AVANSE's zone of influence are underserved by BDS and financial institutions. AVANSE plans to issue an Annual Program Statement (APS) for BDS providers and financial institutions requesting concept papers to establish or reinforce their activities in the north. AVANSE will work closely with the Le Levier Fédération and associated credit unions as well as with CASELI to promote credit and savings to a wider audience. AVANSE has already worked with the Le Levier Fédération within the framework of SIBA, which allowed non-member producers to register and use financial services, many of them for the first time. A partnership with the Le Levier Fédération and the credit unions in the north will allow increased access and availability of finance to underserved farmers.

The Le Levier Fédération would like to expose producers to their various services and to combat prejudices against access to financial services. These marketing events will be done in conjunction with other private-sector firms such as Charles Fequiere and COMAG who also want to increase their respective markets. These joint events will encourage producers to have access to credit in order to finance the purchase of equipment and inputs from private sector firms. Le Levier Fédération is ready to mobilize credit unions according to zones so that they participate in these marketing events.

Expand access to financial services to farmers and small agro-enterprises in the North. One of the main constraints to increasing financial coverage of farmers and small agro-entrepreneurs in the North is the perception that these services are not "for them." However, a range of products exists to help them invest and expand their businesses. As AVANSE reduces its direct support and subsidies, the project will work, in collaboration with USAID's Finance Inclusive program, to overcome that perception by supporting financial institutions, such as the Le Levier's *Caisses d'Epargne et de Credit*, to deepen their outreach to farmers and develop communication campaign. The project will also assist interested financial institutions – and non-bank financial institutions (NBFIs) – in developing new financial products, or expanding existing ones, to better serve women and young entrepreneurs operating in agriculture and trade-related activities.

Output 3.5.2b: Technical assistance to foster the pilot mobile-money project for rice farmers and buyers, cacao producers, and exporters

Improve transaction efficiency using digital financial services. AVANSE will collaborate with Finance Inclusive to expand the use of *Mon Cash* by small agro-entrepreneurs, farmers, women, and youth in order to reduce transaction costs when doing business in agriculture. The technology allows small-scale entrepreneurs in rural areas to purchase inputs, secure orders or make deposits at input stores or equipment suppliers. This will help reduce the day-to-day cost of agricultural transactions in rural areas and help deepen commercial relationships between agricultural service providers and farmers. AVANSE will work on the supply side by mobilizing input stores and young entrepreneurs to become Mon Cash agents and develop access to the service in the north, while Finance Inclusive will work on raising awareness of users to build up demand (from farmers, women, and youth-led enterprises).

Output 3.5.2c: Rice and cacao farmers using mobile money

AVANSE will work closely with the USAID-funded finance project being implemented by WOCCU whose goal is to demonstrate that electronic tablet-based financial services such as depositing money, paying off their credit, or sending money to their peers. To date, AVANSE has facilitated the formation of groups in Dubre and Grison-Garde, but the pilot remains limited in terms of size because of a lack of capacity of the CPF to deploy enough motorcycles; AVANSE could bequeath some unused motorcycles to the partner. As of January 2019, AVANSE will support the expansion of this technology to other credit unions (caisses populaires such as CPD, KPTAT, etc.) to increase its impact. Similar technology can be used as for logistics, stock inventory, membership rolls, field maintenance activities, traceability, price info, ordering, etc.

Output 3.5.2d: Expanded export of cacao and bananas

AVANSE will work with Digicel and the three main exporters (Novella, FECCANO, and PISA) to implement the mobile payment Mon Cash system (See also 3.5.2c above).

Output 3.5.2e: Targeted actors (producers, buyers, processors, exporters, financial institutions, input, and service providers) in the rice, cacao, plantain/banana value chains have effective business relationships

Key Staff and Partners

Key staff: IR 1 teams, working with agribusiness specialist, senior technical advisor, community outreach specialist, consultants

Key potential partners: cacao exporters, cacao processors, Manda Sara, CLES, small rice processors, Charles Fequiere, HAYTRAC and other agricultural equipment suppliers, financial institutions, and business development suppliers.

Main indicators for IR 3.5 are:

1a: Value of cacao exported with USG assistance: FY 2019 target of **$6,454,861**

1b: Value of bananas exported with USG assistance: Target TBD

2a: Volume of cacao exports as a result of USG assistance: FY 2019 target of **2,800 MT**

2b: Volume of banana exports as a result of USG assistance: Target TBD

CROSS-CUTTING ACTIVITIES

STRATEGY

AVANSE's staff in monitoring and evaluation (M&E), data collection and management, geographic information system (GIS), environmental compliance (EC), communications, and outreach have three major functions:

1. Monitoring and evaluation of project implementation: verifying and measuring progress, reporting results, and providing managers with the information on the impact of their activities.
2. Environmental compliance: confirming that all AVANSE activities create no adverse environmental effects, while encouraging and promoting environmental stabilization and protection.
3. Sharing the data and information collected: using methods appropriate to the audience.

MONITORING AND EVALUATION OF IMPLEMENTATION

Reporting the impacts of the project to USAID requires monitoring and evaluation of AVANSE's activities in the field and analysis of the results. The benefits of the AVANSE project are both quantitative and qualitative. The focus to date has been on the quantitative indicators that have shown the yields and incomes for farmers supported by AVANSE increasing. As the project enters its last year, it will broaden its surveys to examine both the adoption rate of new technologies, such as SRI, and what the constraints to adoption are that restrict farmers from adopting new or improved methods.

AVANSE activities have improved the livelihood of beneficiaries throughout Northern Haiti. In addition to the increased incomes from agriculture, improvements in household livelihoods include school attendance, access to health care, investing new capital in housing or retail trade for spouses, buying livestock, and saving for emergencies. The overall impact of AVANSE on communities will be measured.

During FY 2019, AVANSE intends to implement the irrigation systems at Dubre and Chalopin and expand the use of pumps for irrigation and the production of new plantain plants using the PIF method. The appropriate plans to capture the impact of these new activities during the coming year are in place.

Given the importance of the private sector for sustainability, AVANSE will continue measuring the private investment, the number of jobs created, the value of sales, and the value and volume of cacao exported.

As the project enters its final year, changes continue to be made to improve AVANSE's data collection, analysis, reporting, and storage systems, focusing on developing new and refining existing tools and data analysis protocols. The goal is to provide project staff with an up-to-date and more accurate understanding of the impact of all the project's field-based activities on AVANSE beneficiaries.

The teams responsible for data collection, analysis, and storage have been reorganized and their responsibilities clarified. A team works closely with the M&E manager to streamline and improve data flow and the data management procedures. They consider the entire process, from the field collection by the extension agents through the review by coordinators and technical leads, up to the final analysis and reporting. Regular meetings are being held by the M&E team with the project field staff to discuss the challenges they face in the collection of primary data. The forms that are used project wide to record data have been improved, and the importance of good, complete primary records is continually emphasized.

In FY 2019, AVANSE will continue to build the capacity of the M&E staff to support the value chain information flows; improve the data validation and correction processes; enhance database management

– particularly related to issues of data connectivity to speed up the reception of data from the field; and to support the use of geospatial information to inform the programming and indicator reporting.

Other key activities will include:

- Regular assessments and feedback to the technical team leader for each value chain on data collection and their program's performance;
- Structured interviews with project beneficiaries and sample surveys to capture program impact; and
- A post-harvest survey (PHS) targeting more than 2,000 beneficiaries.

In FY 2019, the M&E team will continue to use mixed methods for data collection, including sample surveys, interviews, focus groups, and observations. The data collected will be triangulated with other sources and cross-checked. The project database that stored all the historic records has been migrated to an improved relational system, with improved data models and new functionalities. These technical teams prepare monthly reports to a standard format, and the role of everyone involved in the M&E process has been clarified and assigned, which has helped to improve primary data collection, database management, reporting, and evaluation.

MONITORING AND EVALUATION PLAN

The FY 2019 revised M&E plan discusses the policies, tools, procedures, and methodologies for collection, analysis, reporting, measurement, and target tracking. This is the guiding document for AVANSE's M&E, with the specific systems for tracking, managing, reporting, and verifying all of AVANSE's activities, and guiding AVANSE staff in the provision of reliable, timely, and valid data reports.

In FY 2019, the M&E team will continue to document and report on the progress against targets for the indicators in the project results framework, with regular reporting for the quarterly and annual reports. New activities for this work plan period include frequent farmer surveys to capture more detailed results, use of the improved post-harvest survey methodology, and data collection using mobile phones. Besides tracking progress against targets, a secondary purpose of M&E is adaptive management, adjusting and fine tuning program activities. To support this, a number of new activities will occur in 2019 including 1) surveys to measure the rate of spontaneous diffusion of technologies from direct to indirect beneficiaries; 2) working with the mobile phone company to devise a method to quantify the recipients of electronic (SMS) extension messages; 3) a report documenting the total area of rice and plantain farmers benefiting from improvements in water management through irrigation and drainage activities; and 4) in Q1 FY 2019 assessing the survival rate of cacao and NRM trees planted.

Activity M&E 1: Post-Harvest Survey

In Q4 FY 2018, AVANSE conducted a PHS of beneficiaries that collected data to track the progress of a number of economic and agronomic indicators for AVANSE's three focus crops: rice, cacao, and plantain. Toward the end of FY 2019, a final PHS will be conducted and the results presented over the life of the project.

Activity M&E 2: Estimating the Survival Rates of Planted Cacao Seedlings

In Q3 and Q4 FY 2018, the M&E Team helped the Cacao Team conduct a survey of the survival rates of seedlings the project planted. This survey was postponed as it was realized that the continuing drought would bias the eventual results. Now that the rains have restarted, AVANSE has restarted this survey.

Activity M&E 3: Reporting on Indicators

FY 2019 is the final year of AVANSE, and it is important to capture the lessons learned for future projects. The project will capture, among others, the impact of the new cacao orchards, the pruned orchards, the extension of the Dubré Irrigation System, expansion of pumped irrigation, and the

adoption rate of PIF. In addition, the grantees/enterprises NOVELLA, FECCANO, AGROTECH, PISA, UPBH, and CLES will be monitored. Not only will this provide information of the sustainability of AVANSE's activities, but it will also provide valuable input for any follow-on agricultural program.

AVANSE follows an annual reporting cycle based on the fiscal year, and drafts the annual results report in October each year to record progress for the previous 12-month period. Complementing the annual report, AVANSE also includes in quarterly reports results from its activities for the various output indicators that are measured quarterly. In FY 2019, the M&E team will continue to work with the technical staff to collect all the data needed for the final report. Particular emphasis this year will be given to capturing the data for indicators such as the land area adopting a new or improved technology, jobs created, investments made, and gross margins for plantain, areas where results lag behind targets.

M&E will also work with the rice value chain to analyze the adoption rates by farmers of new SRI or SRA techniques on their plots from the nursery to processing. Examples include: 1) the nursery: dry or flooded; 2) the transplantation of the seedlings: the age of the transplants (days), using a marker or not for transplanting, methods of transplantation (lined up or random), distance between plants, number of seedlings per hole; 3) the management of parcels: field flooded for more than half of the cropping season or not, irrigating alternately drying and irrigating or plot flooded all season; 4) methods of weeding: hand-held, herbicide, or weeding; 5) the burying of the rice straw in the soil during soil preparation; and finally, 6) estimating the rates of fertilizer, pesticide, and seed used.

Given the small size of the average farmers cacao orchard, even with increased yields and good prices, cacao itself often cannot provide sufficient income or ensure the food security of farmers. The addition of mixed cropping with plantain, yam, fruit trees, etc. is needed to ensure the sustainability of the AVANSE cacao farms. The monitoring of the cacao plantations will not only survey whether the community nurseries continue, but will also look at optimum ways to adjust the agroforestry system with cacao as main crop in order to increase incomes and enhance food security.

Specific M&E agents will work with the plantain value chain to monitor the field activities, such as the irrigation methods taught to plantain farmers, operating a PIF nursery, best agricultural practices, and the demonstration plots. AVANSE will focus these monitoring activities around the PIF nurseries and the wells that allow the farmers to irrigate their parcels. The performance of the pumped irrigation will be analyzed, and the team will produce a report every quarter for any program corrections/expansions.

Intensive monitoring is also planned for grant-funded enterprises, which have an obligation to deliver results by the end of the project. Data is being collected to compute the number of jobs created, value and volume of cacao exported, investment made, value of sales, number of jobs created, etc. on a quarterly basis. Data will be collected from PISA, NOVELLA, FECCANO, AGROTECH, CLES and UPBH to ensure that AVANSE's targets are being reached.

Activity M&E 4: Field Verification Visits

AVANSE project staff will continue to be trained in the procedures and protocols for the accurate capture of client data. The M&E monitoring team has expanded its schedule and frequency of field site visits to help cross check and validate the data collected by AVANSE field staff. During these field site visits, the M&E staff conduct periodic verifications of indicator results and spot checks.

Experience from 2017 and 2018 suggests that there is at least one area that needs particular attention in 2019: more accurately measuring the actual production, harvest, and post-harvest activities that farmers engage in following a training session. For example, what pieces of the technology packages are being adopted, and what impact does this adoption have on production versus non-adoption? Of particular interest is the range of yields that AVANSE farmers report and the correlation of their yields with other parameters such as farm size, location, irrigation, use of inputs such as fertilizer, etc.

During the field visits, team members will also conduct spot checks to ensure that any survey samples are reflective and truly representative of the total population of AVANSE beneficiaries and to help identify any adjustments that need to be made in the sampling or survey techniques before the next survey.

Activity M&E 5: AVANSE Beneficiary Database System

The database now allows more rapid disaggregation of results by geographic, campaign, and other key parameters. A significant percent of the data is now georeferenced and can be linked to maps. These changes will assist with the summation of results that will be required for the project final report.

Activity M&E 6: Spatial Analysis of AVANSE's Implementation Activities

In 2017, as part of AVANSE's overall improvements in M&E, the project rolled out additional GIS tools to map its implementation activities. Specific mapping efforts included detailed mapping of farmer plots, assigning parcel codes and linking parcels to beneficiaries, as well as crops, campaigns and technology adoption. All the NRM activities under the CBO grants have been geolocated in the watersheds, and the project activities mapped. This spatial analysis work will be improved and continue in FY 2019.

Activity M&E 7: Special Studies: Economic and Financial Analyses

To help ensure the effectiveness of its activities, and to redirect resources as necessary, AVANSE will continue to analyze the economic impact of certain technical interventions. Examples include the financial viability of irrigation using pumps, the economics of various methods of *sigatoka* control, or the returns to organic and fair trade certification. In FY 2019, AVANSE will conduct the special studies needed to provide data for further analysis on these and other topics of interest. These will include;

The rehabilitation of the Dubré and Chalopin systems will expand the area of irrigated rice. The analysis of the rice value chain will include not only these new farmers but also the continuing producers. In addition, the local rice market will be analyzed to determine the importance and role of various participants, such as Madam Saras and CLES, and the cash flow to farmers at planting and harvest.

The analysis of the cacao value chain will consider both the new and the improved plantations implemented by AVANSE. The team will continue to measure yields, gross margin, value of sales, etc., but AVANSE is also planning to analyze additional economic and social benefits accruing from the use of the cacao sales income and the impact of certification. Additionally, the importance of the yams, plantain, and other crops planted as shade in new cacao plantations or post-pruning on the cash flow and food security of the cacao households will be examined.

The subsidies to pumped irrigation promoted by AVANSE, particularly for the plantain value chain, will continue in FY 2019. The team anticipates that the farmers' incomes will increase since there have been good yields on the demonstration plots. The economic analysis of this activity is underway. Farmers complain that high fuel costs mean they need better prices for their plantain; the AVANSE marketing team will help farmers to aggregate and devise new marketing plans to reach better markets.

The AVANSE NRM activities terminate in December 2018. AVANSE will conduct an ex-post evaluation to measure the income derived from these activities and whether the CBOs have continued the agroforestry system taught by AVANSE. During the last year of the project, AVANSE will assess the benefits from the NRM activities, adding more details regarding the social, economic, environmental, and agronomic impacts.

AVANSE has distributed threshing machines to associations of rice farmers in order to improve the processing of rice after harvesting. This equipment is being used in the fields, but another enterprise has supplied some threshing machine to farmers, which allow harvesting, processing, and bagging. AVANSE has also started to distribute cultivators and weeders. During the second quarter of FY 2019, AVANSE

will determine the economic costs and returns of all types of machines used by rice farmers in the Northern Corridor in order to make recommendations to farmers.

ENVIRONMENTAL COMPLIANCE (EC)

The USAID-approved AVANSE PEA/LAC-EA-16-01 and USAID/Haiti PERSUAP/LAC-IEE-16-31 constitute the two main documents framing the activities and interventions of the Environmental Compliance team throughout the AVANSE project lifetime. This FY 2019 EC work plan directly derives from the project's technical team proposed activities in FY 2019.

Using the directives of the approved AVANSE PEA, the senior project environmental officer (sr. PEO) will continue leading the process of operationalizing any remaining activity-specific environmental mitigation and monitoring plans (EMMPs), and undertaking the environmental M&E associated with the implementation of mitigation measures for AVANSE project activities including grantees and subcontractors – complying with the AVANSE Environmental Management System (EMS) (see Annex B).

The sr. PEO will continue working with project technical teams to ensure that the prerogatives of the approved USAID/Haiti PERSUAP are integrated into the project's agricultural production practices. Training activities will continue during FY 2019 – as needed – in order to ensure that AVANSE's direct beneficiaries and field technicians continue to following approved USAID/Haiti PERSUAP's measures and guidelines. Training in good agricultural practices associated with the AVANSE PEA implementation requirements will also continue in FY 2019. For more details on the training activities planned and the associated training/presentation materials to be finalized, see the AVANSE PEA and USAID/Haiti PERSUAP Training Plan in Annex B.

This primarily implies that producing and applying the necessary integrated pest management (IPM) plans pertaining to AVANSE's focus crops (Integrated Pest-specific Management Plans (IPMPs)) and that ensuring that all applicable health and safety guidelines associated with pesticides' use in the PERSUAP implementation tracker/Table 3 are known and applied by project staff and implementation partners, including direct beneficiaries/farmers, grantees, and sub-contractors. IPM & IPMPs training activities will continue in FY 2019 in order to ensure that AVANSE's direct beneficiaries and field technicians are following approved Mission PERSUAP's measures and guidelines.

Considering the successful implementation of AVANSE environmental compliance prerogatives that have been implemented since FY2016 – as acknowledged and praised by the Environmental Audit conducted by USAID during Q2 FY2018 – another primary focus of AVANSE's environmental compliance activities during the project's close out year will be toward facilitating the sustainability of AVANSE's environmental compliance achievements – through deepening and focusing its environmental management mainstreaming efforts and a renewed focus on providing more targeted support to local environmental institutions and agencies – and thus meeting, and hopefully exceeding, one of the main prerogatives of 22-CFR-216 (Reg. 216), which directs USAID-funded projects to provide technical assistance supports to local institutions and agencies. This, in turn, will contribute in the long run to making AVANSE's successful environmental outputs and intermediate outcomes more sustainable.

MAIN ACTIVITIES EC

Activity E 1: Implementation of AVANSE's Environmental Compliance Functions

The project's TAMIS system formally links the senior project environmental officer to all the project activities. The technical staff will receive support in order to carry out the environmental monitoring obligations associated with their respective activities as per the AVANSE EMS. The Sr. PEO will continue to be responsible for supporting the technical teams and providing a series of practical and tailored field training exercises connected with the activity level EMMPs as needed. Any consultants in environmental-related topics will also have a capacity-building role.

Activity E 2: Working with AVANSE's Value Chains, Grantees, and Infrastructure to Integrate Environmental Compliance Requirements into Agricultural Production, Agro-Processing, and Construction Techniques/Management Practices

The Environmental Compliance team will continue providing input to the technical training packages used by the plantain, cacao, and rice value chains in their field interventions and the agro-processing-related initiatives, ensuring they incorporate any relevant environmental compliance mitigation and training measures – particularly PERSUAP's related compliance prerogatives. The EC Team will assist the Infrastructure Team to meet the resiliency/sustainability requirements (multi-hazards resiliency) associated with the two irrigation/drainage sub-projects implementation planned for FY 2019, Dubre and Chalopin, as directed in their approved EMMP packages and per the AVANSE PEA and USAID Reg. 216. In addition, and conforming to the training requirements associated with the USAID Mission PERSUAP & AVANSE PEA implementation, the EC Team will continue, whenever needed, trainings associated with the integration of GAPs and resiliency/sustainability construction prerogatives into project activities.

Activity E 3: Ongoing Screening of All Field Activities for Environmental Compliance

Throughout 2019, the Environmental Compliance Team will continue visiting FFS and other implementation sites and review AVANSE's activities for compliance with 22 CFR 216. This will include visiting production sites, market engagement partners, and irrigation infrastructure sites. In particular, it will include health and safety monitoring for agro-processing and irrigation infrastructure construction sites. Environmental compliance staff will issue regular reports on these findings to AVANSE management as required in the EMMPs and conforming to the AVANSE EMS.

Activity E 4: Train Implementing Partners in Environmental Compliance

All partners implementing activities that pose potential issues for environmental compliance will adhere to USAID environmental-compliance regulations. AVANSE subcontracts and grants include environmental compliance in the planning, monitoring, and implementation of AVANSE-supported efforts. As contracts signed with implementing partners (IPs) are being executed, the project's environmental compliance staff will continue to conduct evaluations of IP environmental compliance capacities and knowledge and offer ongoing training to ensure they are able to understand and implement the required procedures associated with their individual scopes of work. The AVANSE environmental compliance team will also conduct regular visits to audit environmental compliance records and field implementation measures. IPs will be instructed to enact remediation measures when they are found to be non-compliant, and AVANSE will retain the right to cancel contracts and grants if these are not implemented.

Activity E 5: Supporting Northern Region Farmers and Private Agro-Dealers in Addressing Issues Associated with Pesticide Containers Handling and Disposal

Within the framework of promoting environmental health and safety practices through safer pesticide use, AVANSE will be supporting Northern Region farmers/beneficiaries and private agro-dealers in their ongoing effort to safely handle and dispose of pesticide containers. In spite of the fact that AVANSE does not use nor promote the use of pesticides in its interventions, and only PERSUAP-approved pesticides are used when necessary, pesticides are used in the greater Northern Region, so proper handling and disposal of their containers is an issue that needs to be addressed.

This support will consist of:

- Updating the AVANSE 2014 inventory of pesticides available in the greater Northern Region in order to better assess the level of environmental health risks (toxicity, RUPs, carcinogenicity, etc.) as analyzed through the 2016 USAID Haiti PERSUAP;

- Identifying in-country contractors/partners potentially capable of safely disposing (recycling) of pesticide containers so as to promote waste recycling practices in the region;
- Establishing – with the support of the AVANSE's Grants/Subcontracts/Procurement team a comprehensive collection and disposal mechanisms for pesticide containers involving both farmers/beneficiaries and agro-input dealers in order to promote and facilitate the safe disposal of pesticide containers as adapted from existing best practices; and
- Using that project-based subvention framework, sensitizing the target groups (farmers, beneficiaries, and agro-dealers) on safer use of pesticides while continuously stressing the need to prioritize integrated pest management practices with the use of chemicals being the last resort whenever possible - as per Reg. 216.

Activity E 6: Collaboration with Local Environmental Institutions and Agencies

From an operational standpoint, support to local institutions and agencies is expected to be realized[1] through:

- Facilitating the implementation of Reg. 216 prerogatives of providing technical capacity support to local institutions and agencies in their efforts to increase the country's environmental decision-making support capabilities;
- Providing technical advisory support to ongoing inter-agency technical advisory/dialogue platforms (Environmental Impact Assessment, Integrated Watershed Management, Climate Change and Disaster Risk Reduction, and Sustainable Energy, amongst others) hosted by the Ministry of Environment (MDE) and associated ministries and agencies with the specific aim of helping to mainstream environmental compliance prerogatives;
- Assisting the establishment of the necessary mechanisms for comprehensively integrating environmental compliance at the regional levels as formulated at the central planning level, and thus creating a better framework for implementing future environmental protection projects: from environmental decision making/planning to integrated implementation;
- Supporting USAID's effort in building Haiti's capacity for sound management of chemicals (harmonization of registry, handling, and disposal) through providing technical assistance to existing local entities (private and/or public) that show the potential to make such services available to the country using internationally agreed upon standards and best practices; and
- Ensuring the sustainability of AVANSE's environmental compliance achievements and lessons learned through actively participating in exchanges amongst USG- and USAID-funded projects in Haiti, and hopefully facilitating the establishment of a USAID/Haiti projects environmental advisory group to be chaired by the Mission environment officer.

[1] Due to the centralized nature of the governmental decision-making process in Haiti, this will be facilitated through active participation in environmental management dialogues held at the central government level in Port-au-Prince.

Summary of the AVANSE Environmental Monitoring & Evaluation (M&E) Management Framework & Operational Mechanisms

As per the LAC-EA-16-01, all site-specific activities and associated grants of the AVANSE Environmental Management System require a specific EMMP to be produced and monitored and evaluated over the expected activity timeframe and/or the LOP, whichever comes first.

- The process for producing a specific EMMP starts with filling out the Section II: Narrative of the USAID/LAC/EMMP template. This section makes it possible for the Environmental Compliance Group to be fully aware of the activities that will be effectively implemented, to properly identify all potential impacts, and to propose appropriate mitigation measures, as generically identified in most cases by the AVANSE PEA.
- Upon completion of Section II by the staff that is in charge of carrying out the project activity, the process of producing the EMMP – i.e., filling out Tables 1 through 3 – can then be initiated.
- Overall, AVANSE's Environmental Compliance Group is in charge of producing all the EMMP documentation associated with the Approved AVANSE PEA. The section II/narrative of the aforementioned document – referring to project justification, background, baseline info and detailed description of the activities to be implemented – along with approach foreseen to address gender and climate change (CC) related issues are the responsibility of the staff directly in charge of that activity, however. The EC Team provides technical guidance to the IRs on the CC and gender issues and their main implications for USAID/LAC environmental compliance – and can produce these two sub-sections directly if needed.
- Table 3 of the EMMP is the main M&E tool for monitoring and evaluating the implementation of the mitigation measures throughout a project's activity timeframe – which in most cases corresponds to the LOP. Table 3 allows monitoring of the implementation of the EMMP for addressing the identified potential impacts. In that regard, it is a detailed activity implementation planning sheet.
- Table 3 – produced and finalized by the EC Team – is then explained in detail to the staff in charge of carrying out the activity or grant to which the specific EMMP pertains so that the Environmental Compliance M&E of the activity can be initiated. These trainings continue with the staff designated to carry out the EC M&E in the field. In that regard, the training associated with Table 3/M&E Implementation is an ongoing process.
- The IR's managers are directly in charge of the implementation of the EMMPs pertaining to their activities. They are, however, expected to designate a staff person (and/or a network of staff in the case of field activities with a high environmental M&E load) that will be in charge of carrying out the M&E activities in the field.
- Once finalized and understood by the IR managers and their designated staff, the EMMP is tested in the field and subsequently filled out by the IR according to the M&E frequencies pre-identified in their associated Table 3s.
- Through various status summaries and detailed reports from the AVANSE EC Group – and with support from AVANSE management (COP/DCOP) when problems arise – the Table 3s submitted are then reviewed (for accuracy and consistency), and environmental compliance is continuously monitored and evaluated to ensure that the activity remains in continued compliance with AVANSE Programmatic Environmental Assessment (LAC-EA-16-01).

COMMUNICATION, OUTREACH, AND SOCIAL PUBLICITY

AVANSE's communication activities are based on three pillars: communication (internal and external), awareness, and social media.

COMMUNICATION

For this activity, the Communication Team has put into place mechanisms for sharing experiences and to better understand the perception of the project by our partners in the field, the other stakeholders in the sector, and by the state actors in the technical areas.

Internal communication is one tool to support cohesion and encourage better teamwork. Information circulated internally helps the staff to have a better understanding of the project objectives and progress; based on feedback received from colleagues in the field, the team can adjust or augment communication strategies.

In-house, the Communication Team will promote a more fluid and dynamic flow of information between the different project members for a better understanding of the project objectives and the progress made. It is important that the objectives, the expected outcomes of the project and the progress made to date are known and understood by the AVANSE staff, beneficiaries, and USAID.

AVANSE's communication activities target in particular USAID (the client), state and private partners, especially MANDR and MOE, and the other major players of the agricultural sector in the north. The team will develop materials that inform customers about the actual progress made toward the expected results and other notable achievements. Examples include quarterly reports, fact sheets, newsletters, success stories, web pages, short briefing papers, workshops, other events, etc.

OUTREACH

Outreach is directed toward strengthening knowledge transfer regarding various new and improved technologies. In FY 2019, the Communication Team intends to intensify the outreach process based on two pillars: ownership and durability. Beneficiaries – the MARDNR staff and selected representatives of the state – will be targeted for these outreach activities.

Particularly targeted are the agronomy faculty of the Northern Corridor universities and technical agricultural schools, producer groups, associations, organizations and entrepreneurs involved in agriculture, and members of the FFS. The techniques used will be conferences, training sessions, awareness days, local agricultural events, guided tours of model plots, practical sessions, and demonstration fairs in AVANSE's intervention zones.

The celebration of World Water Day (March 22) and Earth Day (April 22) will be important opportunities for the project to share knowledge with a wider audience. The technical staff will work with the Communication Team on preparing for these events. Interviews for journalists on topics related to agriculture, and training sessions on the presentation of information on agriculture, plus Haitian agricultural data sources (with M&E) are also planned.

A communication awareness strategy called "*AVANSE nan jaden w*" will be developed, where a team of technical and communication staff will go to the rural areas with a sound truck and share information about AVANSE's activities. Individual farmers and members of producer and marketing groups will be invited to discuss solutions, and, after listening to the information presented, individuals can share their experiences or ask the AVANSE managers and technicians to answer specific questions.

At least quarterly, on "P*ATAJE for AVANSE*" day, several FFS from each value chain will meet to share their experiences with using and adapting technologies promoted by AVANSE and travel to visit and observe results on other beneficiaries' farms.

SOCIAL PUBLICITY

This final component of the FY 2019 communication activities concerns the public image of the project. It presents and promotes AVANSE's actions for the dual purpose of informing and inspiring. These social publicity actions are intended to publicize AVANSE actions as a leader in presenting innovative agricultural solutions. It has a secondary mission of correcting the image of the project when rumors or misinformation are present.

Social publicity relies on various outreach activities such as the public events and social media to share success stories, via texts, videos, and photos. Interesting photos and captions will be shared with DAI's Home Office to feed its accounts on various social networks.

Open days, interviews with the press, lunch with journalists, guided tours on model farms, and attendance at field events will be other tools that AVANSE uses.

In 2019, the Communication Team will continue to communicate AVANSE's activities, using a variety of methods including the monthly newsletters, success stories and lessons learned, the AVANSE field days, special events etc., to share information with beneficiaries, implementing partners, USAID, the Government of Haiti, and the Haitian national audience. The communications efforts will continue to target local authorities and communities, engaging them in a two-way dialogue to improve project implementation.

Given the fact that currently knowledge of AVANSE's activities and its successes is to some degree limited to direct beneficiaries and that there are misconceptions about AVANSE, in FY 2019, the Communication Team intends to bring in more resources to expand the Communication Team, and also enlist and assist the technical field teams to be part of communications outreach by sharing appropriate and relevant materials for northern Haiti, as well as adapting AVANSE's technical, commercial, and market information to specific audiences. These target audiences will include agronomists, private sector input/service providers, government staff, farmers, leaders of community based or water user associations, etc. A variety of methods will be used to present and disseminate this information, including a much greater use of community meetings and, with MANDNR, market information via SMS. The Communication Team also plans to bring in outside resources to organize public events, and help develop communications materials, success stories, and environmental materials.

FY 2019 Project Events

A number of media events to highlight AVANSE's achievements will be planned for 2019, including opening ceremonies for the UPBH packhouse, the milling operations at CLES, the soil laboratory at the University at Limonade, the launch of the SIMA messaging program, and others.

1. Private Sector Partnerships-Showcase & Tour

To showcase the work and results of the private sector partnerships in the rice, cacao and plantain value chains that the project has facilitated, AVANSE will organize a one day event for key stakeholders (Gov't, NGO, Private sector) to visit and tour the facilities of each of the partners. The participants will tour farms and processing facilities and be given live demonstrations of the technologies and equipment provided by AVANSE. The partners organizations will present the support and services received from the project, the results achieved, and prepare exhibits to display their products.

Partners: Collectif de Lutte Contre l'Exclusion Sociale (CLES), Novella, PISA, Agrotech, ; the Federation of Northern Cacao Cooperatives, (FECCANO), UPBH Banana Farm and the Cooperative of Cacao Producers in the North (CPCN),.

2. Inauguration of the Dubré and Chalopin Irrigation System Rehabilitation Subprojects

In recognition of the importance of water supply and management to the development of the rice, plantain/banana, and cacao value chains and to showcase the infrastructure works and activities of the water user associations, the project will organize a half day ceremonies to inaugurate and commission both the Dubre and Chalopin Irrigations systems. Dignitaries including Govt, NGO, and Private sector representatives will be given a tour of the sites and the products produced by the farmers.

3. AVANSE Close Out Ceremony

AVANSE will organize a half day close out ceremony in December to commemorate all the partners and staff that contributed to the successful implementation of the project. The project's success stories, accomplishments and results will be presented as well as the best practices and key lessons learned. High level dignitaries from USAID, the donor community, Government of Haiti, private sector and beneficiaries will be invited to participate in this celebratory event.

Activity C 1: Branding of All AVANSE Project Work

The Communication Team will continue to brand all USAID sites with the USAID logo brand in adherence with USAID Marking and Branding Guidelines. This logo appears on work-site signs, training material/posters, flyers, in-kind equipment, etc. The Communication Team works with the technical staff to oversee the production, installation, and implementation of all branding material in line with USAID's branding and marking plan and works closely with the mission's communication specialist to ensure compliance. Alignment with USAID branding standards for signs at the various project sites, at events, and on all project materials will continue.

Activity C 2: Engaging Beneficiaries and Partners

AVANSE will continue to develop its communication products and improve its existing methods of communications to expand project outreach and increase engagement with the local and national authorities, AVANSE's beneficiaries, and partners. Illustrative products include booklets, posters, fliers, fairs, public events, and mobile messaging, all of which will communicate information to beneficiaries to encourage the application of practices that contribute to AVANSE targets and adoption of the improved technologies. In particular, new products will be developed to encourage the correct and cost-effective use of pumps for irrigation use, to assist farmers with improved pest identification, and to provide guidance on environmentally appropriate management practices including handling and disposal of pesticides.

Activity C 3: Sharing AVANSE Implementation Progress and Lessons Learned

The Communication Team will produce communication materials to inform a range of external audiences about the work that AVANSE is doing in the Northern Corridor, the results, and the lessons learned. Potential audiences include USAID, the U.S. Embassy, Haitian government, U.S. audiences, Haitian national audiences, and other implementing partners. Specific materials include newsletters, success stories, media-relations materials, and presentations at public events. AVANSE will coordinate these materials with the development outreach communication specialist at USAID/Haiti.

Activity C 4: Production and Dissemination of a Variety of Extension Materials

While there is a wide range of technical information already available on the AVANSE crops from universities, other projects, and research institutions, there is a need to adapt it to a Haitian audience

and Haitian conditions. Specific activities in 2019 will be to improve materials on plantain, cacao, and rice pest and disease control and information on the costs and returns of improved practices.

Activity C 5: Encouraging Sustainability and Promoting AVANSE's Successes

This final year of the AVANSE project provides the opportunity to undertake activities that encourage and support the sustainability of the various activities implemented to date to improve the economic and environmental security of the north and northeast. While continuing to generate the regular set of communication products about project activities to share with USAID, AVANSE's public and private partners, and beneficiaries, the project's communications staff will also focus on raising the awareness of not just direct beneficiaries but also their neighbors, in order to transfer knowledge to the largest number of people and encourage adoption of the improved technologies introduced by AVANSE. At the heart of these communication activities will be the goals of ownership and durability. In the final year of project implementation, AVANSE will also highlight the achievements of the project and share them with a wider audience, strengthening AVANSE's and USAID's image with the public in the Northern Corridor in particular and Haiti in general.

ANNEX A: AVANSE INDICATORS

Table 21: AVANSE Indicator Tables - Indicator and Results Table

TABLE 2: FTF NORD-AVANSE - IPTT SUMMARY PERFORMANCE DATA TABLE FY 2018: INDICATORS AND QUARTERLY TARGETS

Indicator #	Indicator Title	Unit of measure	Disaggregation	Data Source	Baseline Year	Baseline value	Accomplishment FY14 (Oct 2013-Sept 2014)	Accomplishment FY15 (Oct 2014-Sept 2015)	Accomplishment FY16 (Oct 2015-Sept 2016)	Accomplishment FY17 (Oct 2016-Sept 2017)	Accomplishment Q1 FY18 (Oct-Dec 2017)	Accomplishment Q2 FY18 (Jan-March 2018)	Accomplishment Q3 FY18 (April-June 2018)	Accomplishment Q4 FY18 (July-Sept 2018)	FY18 actual (Q1+Q2+Q3+Q4)	FY2018 Target	% accomplishment compared with target (FY18 results/FY18 targets)	Accomplishment up to FY18 (FY14 total+FY15 total+FY16 total+FY17 Total+FY2018 Total)	% accomplishment compared with life of project (up to FY18 results/LOP targets)	New LOP Target 2019	Remarks for this quarter (Give an overview of the source of the data reported for the specific period)
USAID FY2011 - FY2015 Goal 0.0 Stable and Economically viable Haiti																					
USAID/Haiti Feed the Future Objective: Increased Food Security																					
FTF North objective: Increased Agricultural Income																					
[illegible]	[illegible]	USD	commodity (cacao)	[illegible]	2015																[illegible]
			Total value of exports in USD	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	5,221,124	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	Metric Ton	Total	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	%	Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	n/a	n/a		[illegible]	[illegible]	[illegible]				[illegible]	[illegible]
			Total New Continuing				[illegible]							[illegible]	[illegible]						
			New			[illegible]	[illegible]														
			Continuing			[illegible]	[illegible]														
			Gendered household Type																		
			Adult Female No Adult Male (FNM)			[illegible]															
			Adult Male No Adult Female (MNF)																		
			Male and Female Adults (M&F)			[illegible]															
			Child no Adult (CNA)			[illegible]															
[illegible]																					
[illegible]	[illegible]	[illegible]	Rice			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	n/a	n/a	n/a	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
			Plantain			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	
			Cacao			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	
			Male rice			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				[illegible]	[illegible]						
			Female rice			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				[illegible]	[illegible]						
			Joint rice			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				[illegible]	[illegible]						
			Male plantain			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				[illegible]	[illegible]						
			Female plantain			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				[illegible]	[illegible]						
			Joint plantain			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				[illegible]	[illegible]						
			Male cacao			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				[illegible]	[illegible]						
			Female cacao			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				[illegible]	[illegible]						
			Joint cacao			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				[illegible]	[illegible]						
[illegible]	[illegible]	[illegible]	Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				[illegible]	[illegible]	[illegible]	[illegible]	--	--	[illegible]	[illegible]
			Rice			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				[illegible]	[illegible]	[illegible]	[illegible]	--	--	[illegible]	
			Plantain			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				[illegible]	[illegible]	[illegible]	[illegible]	--	--	[illegible]	
			Cacao			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				[illegible]	[illegible]	[illegible]	[illegible]	--	--	[illegible]	
[illegible]	[illegible]		Total				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
			Rice				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	
			Plantain/Banana				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	
			Cacao				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	
			NRM				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	

Indicator #	Indicator Title	Unit of measure	Disaggregation	Data Source	Baseline Year	Baseline value	Accomplishment FY14 (Oct 2013-Sept 2014)	Accomplishment FY15 (Oct 2014-Sept 2015)	Accomplishment FY16 (Oct 2015-Sept 2016)	Accomplishment FY17 (Oct 2016-Sept 2017)	Accomplishment Q1 FY18 (Oct-Dec 2017)	Accomplishment Q2 FY18 (Jan-March 2018)	Accomplishment Q3 FY18 (April-June 2018)	Accomplishment Q4 FY18 (July-Sept 2018)	FY18 actual (Q1+Q2+Q3+Q4)	FY2018 Target	% accomplishment compared with target (FY18 results/FY18 targets)	Accomplishment up to FY18 (FY14 total+FY15 total+FY16 Total+FY17 Total+FY2018 Total)	% accomplishment compared with life of project (up to FY18 results/LOP targets)	New LOP Target 2019	Remarks for this quarter (Give an overview of the status of the data reported for the specific period)
EG.3.2.17 (4.5.2-5 FTF)	Number of farmers and others who have applied improved technologies or management practices with USG assistance (WOG) (R.1.1)		Total			0	7,815	13,780	9,890	6,844	2,720	987	2,459	1999	8,027	1,857	450%	45,093	133%	35,331	[illegible]
			Total Sex				7,815	13,780	9,890	6,844	2,720	987	2,559	1949	8,027		#DIV/0!	45,093			
			Male				5,102	8,737	6,093	5,057	1,983	570	1,866	1,107	6,732		#DIV/0!	33,339			
			Female				2,713	3,986	2,307	1,787	737	402	393	244	1,299		#DIV/0!	12,166			
			Value chain actor type																		
			Producers				7,807	13,780.00	9,890.00	6,844.00	2,720	987	2,459	1,939							
			Others				8	0				0									
			Technology Type																		
			SRI				400	3,827	3,198			12	32	15							
			SRI-1								0	13	31	27							
			Utilisation de fertilisants à doses minimales, Introduction du DAP						1,514		7	19	62	5							
			Soil related fertility and conservation																		
			Gestion de l'eau utilisation minimale					3,827	1,077		9	55	61	27							
			Utilisation de Rotations Manguiers						1,420		0	23	31	19							
			Utilisation de machines Cassava						33			8	18	0							
			Improved certified Rice Variety (Seed)				400	3,827	1,917		1	13	4	44							
			New Banana Plantation Techniques						1,142		7	9	1	29							
			IPM on Plantain (Bugurdus)				400	2,102	64		2	2	-	1							
			New cacao Plantation Techniques				2,300	6,355	3,883		1,052	1203	123	3							
			Biomechanical Structures				400	822	2,207		475	56	114	30							
			Hedgerows				400	322				3	0	1							
			Introduction of Agroforestry cropping				400	822			0	5	1	20							
			Contiguous Demonstration Blocks				400	502	1,243		312	17	1	8							
(3.2) EG.3.2.18 (4.5.2-2 FTF)	Number of hectares under improved technologies or management practices with USG assistance (WOG) (R.1.1)	ha	Total	Project records	2013	0	3,562	3,980	4,790	4,340	2120.74	986.62	1,980.98	1912.27	7,000.61	1,880	422%	22,659	120%	20,000	[illegible]
			Technology Total																		
			Improved certified Rice Variety (Seed)				125	1,054	552		4.16	36.2	4.29	25.03			#DIV/0!	2,214	72%	3,000	
			New Cacao Plantation Techniques						1,690	332	193.09	222.71	37.79	1.65			#DIV/0!	3,374	40%	9,000	
			New Banana Plantation Techniques						510	404	16.69	14.52	1.97	2				1,012		5,000	
			pest management							3.07	10.78	0	0					0			
			disease management							2.33		0	0					0			
			IPM on Plantain (Bugurdus)				400	972	3,562	2.98		1.78	0	9.64				1,420			
			Soil related fertility and conservation					3,820		-								3,820			
			Biomechanical Structures				600	175	667.00	222.53	431.97	33.88	39.97	31.2666				1,056		5,000	
			Hedgerows				600	93		42.72	0.00	1.74	0	0.43				739			
			Introduction of Agroforestry cropping				450	178		153.51	0.78	3.99	1.43	9.83				1,144		2,328	
			Contiguous Demonstration Blocks				386	176		300.03	169.86	9.7	0.32	3.33				1,036			
			irrigation				125			172.27	0.00	0	0	0				297		4,125	
			water management				125	1,052	510		13.13	26.9	64.21	28.67				2,169		3,435	
			climate mitigation or adaptation				290	670	1,222	869	27.94	211.68	195.41	144.78				2,922			
			other																		
			total w/one or more improved technology				3,988	3,923	4,790	4,340	2120.00	987	1,980.98	1912.27				16,959			
			Sex total				3,562	3,835	4,790	4,395	2120.74	986.62	1,980.98	1912.27				14,699			
			Male				2,759	2,730	3,469	3,101	1642.55	812.59	1,542.92	1538.99				10,075			

Indicator #	Indicator Title	Unit of measure	Disaggregation	Data Source	Baseline Year	Baseline value	Accomplishment FY14 (Oct 2013-Sept 2014)	Accomplishment FY15 (Oct 2014-Sept 2015)	Accomplishment FY16 (Oct 2015-Sept 2016)	Accomplishment FY17 (Oct 2016-Sept 2017)	Accomplishment Q1 FY18 (Oct-Dec 2017)	Accomplishment Q2 FY18 (Jan-March 2018)	Accomplishment Q3 FY18 (April-June 2018)	Accomplishment Q4 FY18 (July-Sept 2018)	FY18 actual (Q1+Q2+Q3+Q4)	FY2018 Target	% accomplishment compared with target (FY18 results/FY18 targets)	Accomplishment up to FY18 (FY14 total+FY15 total+FY16 Total+FY17 Total+FY2018 Total)	% accomplishment compared with life of project (up to FY18 results/LOP targets)	New LOP Target 2019	Remarks for this quarter (Give an overview of the nature of the data reported for the specific period)
			Female				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				[illegible]			
			[illegible]				[illegible]				[illegible]							[illegible]			
			[illegible] applied				[illegible]	[illegible]		[illegible]	[illegible]										
[illegible]	[illegible]	[illegible]	Total				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
			Rice				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	
			[illegible]				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	
			Cocoa				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	
			[illegible]				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	#	None	Project records	2017	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	#	Total	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
			[illegible]				[illegible]	[illegible]	[illegible]	[illegible]					[illegible]			[illegible]			
			[illegible]				[illegible]	[illegible]	[illegible]	[illegible]					[illegible]						
			[illegible]				[illegible]		[illegible]						[illegible]						
			[illegible]				[illegible]		[illegible]						[illegible]						
			[illegible]					[illegible]	[illegible]	[illegible]					[illegible]						
			[illegible]					[illegible]	[illegible]	[illegible]					[illegible]						
			[illegible]					[illegible]	[illegible]	[illegible]					[illegible]						
			[illegible]					[illegible]													
[illegible]	[illegible]	[illegible]	Rice			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
			[illegible]			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
			Cocoa			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	#	Total	Project records	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
			Sex				[illegible]			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]			
			[illegible]				[illegible]					[illegible]									
			Location																		
			[illegible]				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				[illegible]			
			[illegible]																		
[illegible]	[illegible]	#	Grand Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
			Total Sex				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]			
			Male				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]			
			Female				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]			
			Type of individuals																		
			[illegible]				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]			
			People in government				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]		[illegible]			[illegible]			
			People in private sector				[illegible]	[illegible]	[illegible]		[illegible]		[illegible]					[illegible]			
			People in civil society (NGOs, CBOs, CSOs, research and academic organizations)				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				[illegible]			[illegible]			
[illegible]	[illegible]	#	Sex total	Project records	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
			Male				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]			
			Female				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]			

Indicator #	Indicator Title	Unit of measure	Disaggregation	Data Source	Baseline Year	Baseline value	Accomplishment FY14	Accomplishment FY15	Accomplishment FY16	Accomplishment FY17	Accomplishment Q1 FY18	Accomplishment Q2 FY18	Accomplishment Q3 FY18	Accomplishment Q4 FY18	FY18 actual (Q1+Q2+Q3+Q4)	FY2018 Target	% accomplishment compared with target	Accomplishment up to FY18	% accomplishment compared with life of project	New LOP Target 2019	Remarks for this quarter
[illegible]	[illegible]	Ha	None	Project record, maps	[illegible]	0	0	0	0	[illegible]	0	0	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	Km	None	Project record			0	0	0	[illegible]	0	0	0	0		[illegible]	[illegible]		[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	#	None	Project record					0	0	0	0	0	0	0	0	[illegible]		[illegible]	0	[illegible]
[illegible]	[illegible]	Ha		Project record, maps	[illegible]	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	%	None	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	n/a	[illegible]	n/a	[illegible]	[illegible]	[illegible]				[illegible]	[illegible]
[illegible]	[illegible]	#	None	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	#	Total	Project record	[illegible]	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
			[illegible]				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]			
			[illegible]				0	0	0	0	0	0	0								
[illegible]	[illegible]	#	Total	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	n/a	n/a	n/a	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
			Male			0	[illegible]	[illegible]	[illegible]					[illegible]							
			Female				[illegible]	[illegible]	[illegible]					[illegible]							
[illegible]	[illegible]	#	Total	[illegible]	[illegible]	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
			Male				[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]			[illegible]			
			Female				[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]			[illegible]			

Indicator #	Indicator Title	Unit of measure	Disaggregation	Data Source	Baseline Year	Baseline value	Accomplishment FY14 (Oct 2013-Sept 2014)	Accomplishment FY15 (Oct 2014-Sept 2015)	Accomplishment FY16 (Oct 2015-Sept 2016)	Accomplishment FY17 (Oct 2016-Sept 2017)	Accomplishment Q1 FY18 (Oct-Dec 2017)	Accomplishment Q2 FY18 (Jan-March 2018)	Accomplishment Q3 FY18 (April-June 2018)	Accomplishment Q4 FY18 (July-Sept 2018)	FY18 actual (Q1+Q2+Q3+Q4)	FY2018 Target	% accomplishment compared with target (FY18 results/FY18 target)	Accomplishment up to FY18 (FY14 total+FY15 total+FY16 Total+FY17 Total+FY2018 Total)	% accomplishment compared with life of project (up to FY18 results/LOP target)	New LOP Target 2019	Remarks for this quarter (Give an overview of the status of the data reported for the specific period)
[illegible]	Value of new private sector capital investment in the agriculture sector or food chain leveraged by Feed the Future implementation [illegible]	USD	None	Enterprises Record Survey	[illegible]	0	0	0	0	0	[illegible]	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Value of agribusiness sales due to USG assistance	USD	Total	Project record	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
			[illegible]			[illegible]	[illegible]			[illegible]	[illegible]		[illegible]								
			[illegible]			[illegible]			[illegible]	[illegible]			[illegible]								
			Rice			[illegible]	0							[illegible]							
			[illegible]			[illegible]	0			[illegible]	[illegible]	[illegible]									
			Cassava			[illegible]	0	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]							
			[illegible]			[illegible]	0	[illegible]		[illegible]											
			[illegible]			[illegible]	0			[illegible]											
[illegible]	Number of processing facilities established or improved due to USG assistance	#	Total	Project record	[illegible]	0	0	0	0	0	0	0	0	0	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
			Cocoa processing facilities				0														
			Rice processing facilities				0														
			Cassava processing facilities				0														
[illegible]	Number of farmers accessing market information due to USG assistance	#	Total	Project record, Phone list	[illegible]	0	0	0	0	0	0	0	0		0	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]
			Male				0														
			Female				0														
[illegible]	Number of public-private partnerships formed as a result of USG assistance [illegible]	#	Total	Project record	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
			Agricultural production				[illegible]		[illegible]	[illegible]											
			Agricultural post-harvest transformation				[illegible]		[illegible]	[illegible]											
			Nutrition				[illegible]		[illegible]	[illegible]											
			Other areas				[illegible]		[illegible]	[illegible]											
			Multi-focus				[illegible]		[illegible]	[illegible]											
[illegible]	Number of full-time equivalent (FTE) jobs created with USG assistance [illegible]	#	Total	Project record, Agribusiness survey	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
			Urban			[illegible]	[illegible]		[illegible]	[illegible]											
			Rural			[illegible]	[illegible]		[illegible]	[illegible]			[illegible]	[illegible]							
			New			[illegible]	[illegible]		[illegible]	[illegible]			[illegible]	[illegible]							
			Continuing			[illegible]	[illegible]		[illegible]	[illegible]				[illegible]							
			Male			[illegible]	[illegible]		[illegible]	[illegible]			[illegible]	[illegible]							
			Female			[illegible]	[illegible]		[illegible]	[illegible]			[illegible]	[illegible]							
[illegible]	Number of for-profit private enterprises, producers organizations, water users associations, women's groups, trade and business associations, and community-based organizations (CBOs) receiving USG food security related organizational development assistance [illegible]	#	Total	Project record	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
			and New/Continuing			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]								
			New			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]								
			Continuing			[illegible]		[illegible]	[illegible]	[illegible]	[illegible]		[illegible]								
			Type of organization			[illegible]															
			Private enterprises			[illegible]		[illegible]	[illegible]	[illegible]	[illegible]		[illegible]								
			Producers organizations			[illegible]		[illegible]	[illegible]	[illegible]	[illegible]		[illegible]								
			Water user associations			[illegible]		[illegible]	[illegible]	[illegible]	[illegible]		[illegible]								
			Women's groups			[illegible]		[illegible]	[illegible]	[illegible]	[illegible]		[illegible]								
			Trade and business associations			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]								
			Community based organizations			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]								

ANNEX B: AVANSE'S ENVIRONMENTAL MANAGEMENT SYSTEM

AVANSE ENVIRONMENTAL MONITORING & EVALUATION (M&E) MANAGEMENT FRAMEWORK & OPERATIONAL MECHANISMS

AVANSE'S ENVIRONMENTAL COMPLIANCE STATUS SUMMARY & REPORTS

Overview

As per the LAC-EA-16-01, all site-specific activities and associated grants of the AVANSE Environmental Management System require a specific EMMP to be produced and monitored and evaluated over the expected activity timeframe and/or the LOP – whichever comes first - as per the USAID/LAC regulations.

SUMMARY OF KEY POINTS:

- The process for producing a specific EMMP starts with filling out the Section II: Narrative of the USAID/LAC/EMMP template. Without that section, it is impossible for the Environmental Compliance Group to be fully aware of the activities that will be effectively implemented and to properly identify all potential impacts and propose appropriate mitigation measures - as generically identified in most cases by the AVANSE PEA.
- Upon completion of Section II by the IR or group that is in charge of carrying out the project activity, the process of producing the EMMP – i.e., filling out Tables 1 through 3 – can then be initiated.
- Overall, AVANSE's Environmental Compliance Group is in charge of producing all the EMMP documentation associated with the Approved AVANSE PEA. The Section II/narrative of the aforementioned document – referring to project justification, background, baseline info, and detailed description of the activities to be implemented – along with approach foreseen to address gender and climate change-related issues, are the responsibility of the IRs and/or groups directly in charge of that activity, however. EC Group provides technical guidance to the IRs and groups on the CC and gender issues and their main implications for USAID/LAC environmental compliance – and can produce these two sub-sections directly if needed.
- Table 3 of the EMMP is the main M&E tool for monitoring and evaluating the implementation of the mitigation measures throughout the project's activity timeframe – which in most cases corresponds to the LOP. Table 3 allows monitoring of the implementation of the Environmental Mitigation and Monitoring Plan for addressing the identified potential impacts. In that regard, it is a detailed activity implementation planning sheet.
- Table 3 produced and finalized by the EC group – is then explained in detail to the IR or Group Leads in charge of carrying out the activity or grant to which the specific EMMP pertains so that the Environmental Compliance M&E of the activity can be initiated. These trainings continue with the staff designated by the IR/VC/group leads to carry out the EC M&E in the field. In that regard, the trainings associated with Table 3/M&E implementation is an ongoing process.

- The IR or groups leads are directly in charge of the implementation of the EMMPs pertaining to their value chains and/or groups – however, they (IR and group leads) are expected to designate a staff person (and/or a network of staff in the case of field activities with a high environmental M&E load) that will be in charge of carrying the M&E activities out in the field.
- Once finalized and understood by the IR and group leads and their designated staff, the EMMP is tested in the field and subsequently filled out by the IR and/or group according to the M&E frequencies pre-identified in their associated Table 3.
- Through various Status Summary and detailed reports from the AVANSE EC Group – and with support from AVANSE Upper Management (COP/DCOP) when problems arise, the Table 3s submitted are then reviewed (for accuracy, consistency), and environmental compliance and continuously monitored and evaluated (M&E) to ensure that the project remains in continued compliance with AVANSE Programmatic Environmental Assessment (LAC-EA-16-01).

A more detailed description of AVANSE's Environmental Management and Monitoring System follows.

A. THE AVANSE ENVIRONMENTAL COMPLIANCE M&E & DQA MECHANISMS

1. On EMMP Production: Section II/Narrative and Annexes (Tables 1 to 3)

a. Overall, AVANSE's Environmental Compliance Group is in charge of producing all the EMMP documents. Section II of that document – referring to project justification, background, baseline info and detailed activities to be implemented – along with approach foreseen to address gender and climate change-related issues, are the responsibility of the IRs or groups directly in charge of that activity, however. The EC Group provides technical guidance (including for training and information exchange purposes) to the IRs and groups on the CC and gender issues and their main implications for USAID/LAC environmental compliance – and can ultimately produce these sections for the IRs and groups if needed.

b. Table 3 of the EMMP is the main M&E tool for monitoring and evaluating the implementation of the mitigation measures throughout the activity timeframe – which in most cases corresponds to the LOP. It is a fully developed project activity implementation document allowing the IRs or groups to have a complete understanding of the different sets of mitigation measures to be implemented – as directly derived from the required detailed descriptive of the sets of project activities expected to be carried out provided to EC in the Section II of the EMMP by the IR/groups themselves. In that regard, it is a detailed environmental safeguards-focused activity planning sheet.

2. EMMP Implementation and DQA Mechanisms

a. ALL AVANSE IRs, VCs, and/or groups in charge of implementing AVANSE project activities are responsible for the implementation of the environmental mitigation measures spelled out in the EMMPs pertaining to their respective activities (umbrella and/or Site-Specific EMMPs) as per LAC-EA-16-01. The aforementioned mitigation measures – along with the necessary mechanisms for continuously measuring, monitoring, and evaluating implementation results – are detailed in Table 3s of the EMMPs.

b. The IRs, VCs, and group leads – from an operational standpoint – are advised to formally designate a staff person to carry out the day-to-day M&E obligations associated with the implementation of their respective EMMPs – as directed in Table 3s.

c. If a critical or persistent problem arises with respect to implementation of the Table 3 mitigation measures, the EC Group will alert AVANSE upper management (COP, DCOP, and operations & financial director) and they will support the EC Group and the implicated IR/VC/group in resolving the issue. This will include following the obligations/directives associated with the

implementation of the approved AVANSE PEA as materialized through the mechanisms amongst all AVANSE IRs and groups involved, as above outlined.

d. AVANSE Environment/Environmental Compliance Group is directly in charge of producing the EMMP docs for all project activities – as directed by the approved AVANSE Environmental Management System (AVANSE PEA/LAC-EA-16-01). This implies undertaking preliminary screenings, conducting environmental due diligence of IPs and/or grantees, identifying the specific potential environmental impacts of the activities and mapping out the mitigation measures to be carried out in order to address/minimize the identified potential negative impacts (EMMPs Table 1, Table 2, and Table 3).

e. EC Group – through its EC officers and assistants – besides producing and following up on the required documentation associated with AVANSE PEA implementation, is also in charge of:

- Conducting periodic review of EMMP implementation – as realized by the IRs, VCs, and/or groups – through carrying environmental review spot checks. Those spot checks as per the operational mechanisms adopted by AVANSE management refer to periodic/random and need-based environmental monitoring site visits to AVANSE activities so as to get parallel and alternative reviews of overall AVANSE EMMP implementation by the IRs and groups. In short, they constitute a means to compare and confirm the self-monitoring reviews (as materialized in the respective filled out Table 3s) carried out by the IRs and groups.
- Maintaining continuous contact with and providing continuous assistance to the IRs and groups – and their extended IPs and/or grantees so as to ensure continued understanding and proper implementation of Table 3s – also falls on the EC Group's responsibilities.
- Carrying out – in collaboration with the IRs, VCs, and groups, the various trainings – including refresher training sessions as needed – associated with the implementation of the approved AVANSE PEA Environmental Compliance related issues such as EMMP understanding and implementation mechanisms, understanding of associated EMMP technical documents related to GAPs, IPM, and Climate Change Integration into implementation of AVANSE's activities. This includes training and facilitating understanding of IR/VC/groups' field technicians, IPs, and grantees so that they are able to respect overall Regulation 216 environmental mitigation monitoring and management. The effective implementation of the prerogatives of the Approved Haiti Mission wide PERSUAP (LAC-IEE-16-31)[2] is also under the purview of the EC Group.

3. On the AVANSE Environmental M&E Implementation Network

The AVANSE EC Group consists of:

a. Senior project environmental officer (sr. PEO) – who is in charge of producing the overall documentation directly supporting the AVANSE Environmental Monitoring & Management System – and following up on their implementation, as per the Approved AVANSE PEA (LAC-EA-16-01) and USAID/Haiti Mission-Wide PERSUAP (LAC-IEE-16-31).

b. EC officers/associates[3] who are mostly assigned to the process of M&E and continued data quality assessment (including spot checks) associated with the AVANSE Environmental Monitoring and Management System – under the direct supervision of the Sr. PEO.

[2] AVANSE PERSUAP Implementation Mechanisms are addressed separately.

[3] As of now, the EC team is made of the sr. PEO, and an EC assistant. Two environmental officers are currently being hired to ensure the proper M&E oversight of AVANSE's environmental monitoring and management system.

c. A network of field technicians – as directed and/or designated by the respective IR and group leads for the effective implementation of the various and continued tasks associated with the implementation of their respective EMMPs at the field level as per the pre-determined frequencies outlined in the EMMPs.

d. Training of farmers and CBOs are also supported by the IR, VC, and group staff that EC would have trained – extending the overall EMMP M&E Network as a result.

4. On EMMP Implementation: Filling out, Reviewing and Filing EMMP Table 3s

After production and finalization of the EMMP as per the mechanisms outlined above, the following steps are undertaken in order to carry out EMMPs M&E, specifically M&E of the mitigation measures in Table 3s:

a. EMMP Table 3s are adapted to the field needs of the IRs and groups – hence translated into French and/or Creole (as requested and/or applicable).

b. Based on the frequencies of the mitigation measures to be implemented and evaluated, the IR field Staff will fill out the Table 3s and submit periodically (ideally weekly as they get filled out) to the EC group for filing and scanning according to the following format: IR (or group) ID_EMMP#_EMMP typ & Name_date of filling out (day-month-year) _date filed by EC (day-month-year).

Example: SIBA_EMMP1_SIBA Affiliated Bout_Dieu le Sait Boutique_22Fev2016_1Mars2016

c. Prior to filing (Hard and Electronic), EC reviews ALL submitted Table 3s for accuracy and consistency. Regardless of the level of accuracy and consistency, all submitted Table 3s will be filed by the EC group – as all Table 3s constitute a unique observation in time and space, hence cannot be replicated within the same time and space parameters.

d. Following the review, sample(s) of the filled Table 3s – for all IRs and groups – will be selected by EC based primarily on the accuracy, consistency, or *red flags* that would have been detected during the review process, and, most importantly, comments that would have been made by the IR/group field staff on the difficulties encountered in the implementation of the mitigation measures and potential corrective measures he/she would have come up with (if applicable) – as reported on the specific filled out Table 3s and observed through the Env/EC DQA weekly review process.

Should any problem or issue arise in the field while the IR field staff is implementing Table 3, he/she is strongly advised to contact an EC associate in order to assist him/her in coming up with a proposed corrective action for the problem, especially in case this situation requires immediate response.

e. Using the sample selected as per the process outlined above, EC associates will then head to the field the following week for undertaking the Data Quality Assessment (DQA) via spot checks. If a problem is detected via the spot checks or review of Table 3s submitted to the EC unit by the IRs/VCs/groups, the EC team will first contact the IR/VC/group lead to discuss and subsequently develop and implement a shared solution; if the problem persists, the EC team will alert the DCOP and COP in order to discuss and develop an alternative solution (if the problem relates to a grant, the director of operations will also be alerted). NB: proper identification of the Table 3 selected for review will be ensured as follows:

Example - IR (or Group) File ID:

IR (or Group) ID_EMMP#_EMMPtyp & Name_date of filling out (day-month-year)_date filed by EC (day-month-year

Example - EC Reviewed Filed ID:

rev- IR(or Group)ID_EMMP#_EMMPtyp & Name_date of filling out (day-month-year)_date filed by EC (day-month-year)_date reviewed by EC

f. The Table 3 filled out by the IR (or group) will be filed electronically as well as hard copies in different folders which will be labeled as EMMP M&E – and EMMP DQA – along with a filled Table 3 of the spot checks carried out by the EC Group.

This process will be repeated for each specific EMMP until the close out of the activity or project close, whichever comes first.

B. AVANSE ENVIRONMENTAL COMPLIANCE STATUS: SUMMARY & DETAILED REPORT

There will be two EC Group-produced monthly reports presenting a summary of the AVANSE environmental compliance status: 1) **AVANSE Environmental Compliance Status Summary;** and 2) **AVANSE Environmental Compliance Status Report**. Two additional biweekly more detailed environmental reports also will be generated, presenting the environmental compliance status per IR or groups and the results/observations conducted by EC through our random and/or as needed spot check mechanism: 1) **IR 1Group Environmental Mitigation Monitoring and Evaluation Tracker** and 2) **EC Spot Check Observation Notes**.

The Reports:

a. **AVANSE Environmental Compliance Status Summary** refers to a one-page table showing the overall progress status of all the activity/site-specific EMMPs using various qualitative progress indicators such as " Not Started," "Initiated," "In progress," and "Done" – as segregated into value chains, IRs, and/or groups. It is produced monthly.

b. **AVANSE Environmental Compliance Status Report** is the detailed environmental compliance status of each site-specific/activity EMMP including the degree of achievement of its various components, as per the USAID/LAC EMMP format.

- The EC Group has been producing the EMMP annexes/tables (1 to 3) for ongoing activities (SIBA, IR 2, and IR 1 mostly – but not the GRANTS). Baseline info (GIS, georeferenced parcels, water needs estimates (nutrient discharge, chemical discharge), and other required studies, etc.) and their information/data are being integrated as they are generated by the GIS unit and field agents responsible for parcel or plot georeferencing.
- Table 3s – the operational EMMP M& E tool – have been produced so as to allow the IRs/groups to undertake the required field environmental M&E of their activities as per LAC-EA-16-01 – pending finalization of their respective EMMP Section II.

c. **IR/Group Environmental Mitigation Monitoring and Evaluation Tracker** refers to an automated cumulative sheet recording daily/weekly the submission of filled Table 3s by the IRs/groups, as well as the associated M&E spot checks (Table 3s completed by the EC group) during the period under review. It is formatted as a quarterly reporting sheet, but the data are available as they are being submitted to EC so as to have a real-time sense of AVANSE's overall environmental compliance status. The tracker takes into account the overall environmental compliance regime[4] (from activity initiation to project close out, as applicable) of the project activity as operationalized into its pre-determined environmental M&E performance indicators

[4] AVANSE activities are highly integrated, particularly those falling under the grants component. Thus, as an example, a Banana Production and Marketing Grant would need to take into account several different EMMP monitoring frequencies: the banana production Umbrella Table 3 M&E (frequency 1), infrastructure/water resources/irrigation access Table 3 M&E (Frequency 2), plowing activities Table 3 M&E (Frequency 3), small-scale construction Table 3 M&E (Frequency 4), etc.

and monitoring frequency. It is generated biweekly for AVANSE upper management – but updated as the filled Table 3s are being submitted.

d. **EC Spot Check Observation Notes**[5] are short and well-documented reports (with exact dates, locations, and pictures), produced weekly and/or throughout the week (as needed) – outlining the main observations made during spot check visits by the EC officers and assistants on the specific environmental compliance status of IR and/or group activities - as observed during the spot check visits for the previous and/or ongoing week under review. Those reports are generated and made available to the IR/group leads (with cc to AVANSE upper management) so as to make them aware of the potential shortcomings and adjustments that might be needed/necessary in order to effectively implement the environmental compliance prerogatives associated with their respective Table 3s (see Example of Observations Notes).

AVANSE PEA & USAID HAITI MISSION PERSUAP TRAINING PLAN

Since the AVANSE PEA approval and subsequent USAID/Haiti PERSUAP publication, the AVANSE Environmental Compliance Team initiated training activities in the form of ongoing tailored desk and field sensitization training sessions for project staff, field technicians, beneficiaries, and implementation partners on the means to integrate environmental protection guidelines into their activities in general, and to meet the specific environmental mitigation requirements associated with their respective environmental mitigation and monitoring plans (EMMP/Table 3s) in particular. During FY 2017, those training sessions were readjusted to integrate the specific obligations associated with the newly approved USAID/Haiti PERSUAP, hence meeting the AVANSE PERSUAP (and PEA) Training Plan requirements therein. So far, EC has put together roughly 25 training modules – of which 9 have already been finalized and training sessions held. Sixteen training materials are expected to be generated and finalized during FY 2019, and training sessions geared toward AVANSE staff, field technicians, direct/indirect beneficiaries (farmers, FFS, affiliated agro-input boutiques), and implementation partners are planned for FY 2019.

AVANSE PRELIMINARY TRAINING MATERIALS/MODULES LIST

Already HELD (Jan 2016 – Sept 2016 - & Ongoing to date)

1. Integration of Climate Change into AVANSE's VC & Groups (Sept 2015)
2. AVANSE PEA – Main Conclusion & Implications for Activities' implementation going forward (Jan, 20016);
3. AVANSE Environmental M&E Implementation: Understanding and Filling out EMMP's Table 3's (Jan 2016 ...to date – ONGOING)

I. BANANA

1. GAP Fundamentals - Module # 2: Banana Production & Healthy Soil Management (Staff & FFS)
2. GAP Fundamentals- Module # 3: Banana Production & Precision Agriculture Requirements (Staff & FFS)
3. GAP Specific – Module # 2 : Nurseries Fundamentals: Seeds & in Vitro Vegetative Rootstock Multiplication (staff/IP/FFS)

[5] Observation Notes are also generated as "follow up" observations (as needed), so as to verify the effective implementation of follow up mitigation measures directed as a result of potential environmental compliance shortcomings. They are, therefore, both a monitoring support tool as well as an evaluation support tool for the Table 3s.

4. GAP Specific - Module # 3: IPM/Banana IPMP for Sigatoka (Staff/IPs)
5. GAP Specific - Module # 4: IPM/Banana IPMP for Nematodes (Staff/IPs)
6. GAP Specific - Module # 5: IPM/Banana IPMP for Root Borers (Staff/IPs)

Already HELD (FY 2017-Q3):

1. GAP Fundamentals – Module # 1 - Banana Production (Staff/FFS)
2. GAP Specific – Module # 1 : IPM Generals – Banana Production (Staff/FFS)

II. CACAO

1. GAP Fundamentals – Cacao Production (Staff/IPs/FFS)
2. GAP Specific – IPM Generals – Cacao Production
3. GAP Specific – Module # 1: Nurseries Requirements – Seeds & In vitro Multiplication – Major Constraint to Success (Staff/IPs & Farmers);
4. GAP Specific – Module # 2 : IPM/Cacao IPMP for Frosty Pod/Monilia Pod Rot
5. GAP Specific – Module # 3 : IPM/Cacao IPMP for Back Pod & Canker
6. GAP Specific – Module # 4 : IPM/Cacao IPMP For Rats

III. RICE

1. GAP Specific – Module # 3 : IPM/Rice IPMP for Mites
2. GAP Specific – Module # 4 : IPM/Rice IPMP for Broadleaf Weeds

Already HELD (FY 2017- Q2 & Q3):

1. GAP Fundamentals – Rice Production (Staff/FFS)
2. GAP Specific – Module # 1 : Rice Nurseries (Staff)
3. GAP Specific – Module # 2 : Rice Production (Staff)
4. GAP Specific – IPM Fundamentals – Rice Production (Staff)

IV. SIBA AFFILIATED BOUTIQUES & FFS GAP SPECIFICS

1. GAP Specific – Module # 1: Pesticides Safer Use Practices - Including PERSUAP USAID Regulations - First Aid & Container Disposal (AVANSE Staff/IPs-Boutiques & FFS);
2. GAP Specific – Module # 2: Safer use of Fertilizers – including USAID Regulations (AVANSE Staff/IPs & FFS)

V. IRRIGATION & DRAINAGE

1. USAID Reg. 216 - Irrigation & Drainage Environmental Impacts/Mitigation - General Requirements (Staff & IPs)
2. AVANSE Infrastructure - Irrigation/Drainage: Minimum Environmental Construction Requirements (Staff & IPs)

VI. NATURAL RESOURCES MANAGEMENT/NRM TRAINING

1. Training for NRM is ongoing through spot checks and overall Environmental M&E Plan implementation
2. Training for **GPS-NRM Grantees** – Ongoing through spot check site visit – Environmental M&E Implementation

VII. GPS - AGRO-PROCESSING GRANTEES (IPS)

1. Training - for Agro-processing IPs/Grantees – is always ongoing and starts ***intensely*** during Initial DUE DILIGENCE Site Visit – Through GRANT inception – Continues during Grant Execution – and ongoing through Spot Check Visits.

ANNEX C: AVANSE'S SUMMARY BUDGET

Table 22: Summary Activity Budget

Total Summary Budget FY 2019	
Total grant costs in this workplan (new and existing grants)	[redacted]
New grants FY 2019	
Direct implementation: rice	
Direct implementation: cacao	
Direct implementation: plantain	
Direct implementation: watershed management	
Direct implementation: irrigation	
Sub-total (value chains, watershed management, and new grants)	
GRAND TOTAL 2019 (value chains, watershed management, and all grants)	