



FEED THE FUTURE

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



FY 2019 SEMI-ANNUAL REPORT

INNOVATION LAB FOR COLLABORATIVE RESEARCH
ON SUSTAINABLE INTENSIFICATION



Feed the Future Innovation Lab for Collaborative Research on Sustainable Intensification (SIIL)

FY 2019 Semi-Annual Report

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Cover Photos

Top left: Close-up image showing the healed graft union of tomato onto eggplant rootstock in Siem Reap province, Cambodia in October 2018. *Photo credit: Ry Saren.*

Top right: Paddy harvesting operations were done by using an ACI Reaper at Kalapara, Patuakhali. Bangladesh in November 2018. *Photo credit: Kamrul Hasan.*

Bottom left: Arlette Toe, an MSc student, working on sheep fattening in Yatenga, Burkina Faso in November 2018. *Photo credit: Arlette Toe.*

Bottom right: A group of farmers learning how improved varieties and dressed bean seed can improve yield if planted with modern mechanization compared to human-handly planter in Manyara, Tanzania in January 15, 2019. *Photo credit: Jovin Lwehabura.*



I. Research Progress Summary

A. Research progress made during the reporting period

I. Management Entity Operations

- a. The Sustainable Intensification (SI) Assessment Framework web tool was developed at the beginning of FY 2019. The purpose of the web tool is to facilitate greater access and usability of the framework for the SI research community. The tool was showcased at several venues, including the American Society of Agronomy and Crop Science Society of America Annual Meeting in November 2018, and the SILL Annual Meeting in April 2019. The SI assessment framework is being utilized by all of the SILL projects to quantify synergies and tradeoffs of their technologies across the five domains (productivity, economic, environment, human, and social condition). These efforts will continue to be encouraged to further investigate the utility of the framework in assessing farming systems.
- b. The SILL highlighted its youth engagement activities at the World Food Prize Borlaug Dialogue in October 2018. The side event included a panel of youth from Cambodia and Senegal – a Peace Corps volunteer, an Institut Sénégalais de Recherches Agricole (ISRA)-supported graduate student, the director of the CE SAIN in Cambodia, and a CE SAIN-supported graduate student. The event focused on youth engagement in agriculture and the transformational events that influenced their decisions to work in agriculture or agricultural related professions. The panel also provided insights on how best to recruit, retain, and sustain youth in agricultural professions, and why their involvement is so critical in solving our global challenges related to food and nutritional security and improved livelihoods.
- c. The SILL collaborated and partnered with the American Soybean Association (ASA), CE SAIN, and other development organizations in securing a \$17M grant funded by the United States Department of Agriculture (USDA) Food for Progress. The project, Commercialization of Aquaculture for Sustainable Trade (CAST), focuses on creating high-quality fish feedstock in Cambodia through US Soy Producers, as well as strengthening capacity building efforts within the Royal University of Agriculture (RUA) and University of Battambang (UBB) in Cambodia.
- d. The Sustainable Opportunities for Improving Livelihoods with Soil (SOILS) Consortium was officially launch on March 15, 2019 in Washington, DC, in collaboration with the International Fertilizer Development Center (IFDC) and USAID. The consortium will focus on improving the health and fertility of soils as the foundation for nutritious food production and resilient and sustainable livelihoods.
- e. The SILL finalized the Policy Research Consortium (PRC) Associate Award from USAID-Washington, which is focused on improvement of policy approaches and outcomes to support the U.S. Government Global Food Security Strategy (GFSS) objectives. Rutgers University will lead the consortium to support this learning agenda on policy, systems analyses, and implementation. The PRC is a group of universities and researchers across the U.S. and sub-Saharan Africa.
- f. The SILL hired a new Program Administrator, Andra Williams, who started in October 2018.

2. Geospatial and Farming Systems Research Consortium (GFC)

- a. Nitrogen fertilizer experiments in five research stations in Senegal are complete and the data is currently being analyzed. Fertilizer price survey across Senegal is completed. Four MS theses from different universities in Senegal (Thies, Dakar and Ziguinchor) were successfully defended and students presented their work at the annual meeting. Two PhD candidates are engaged in ongoing research five research stations across Senegal.
- b. During the last six months, several activities were concluded, including data collections, organizing training program, and scale up project activities. Household surveys were with 281 farmers (families), providing the information on land use change histories and related socio-economic drivers. For field plot survey, we visited 478 fields. The survey covered villages from five different communes in Cambodia: Anlongreab, Sdau, Ta Kream, Ta Pon and Tasen.
- c. The GFC received USAID PEER grant to extend the project to develop crop type database and they also secured additional funding from Australian Centre for International Agricultural Research (ACIAR) for the “Land suitability assessment and site-specific soil management for Cambodian uplands” project.

- d. Micro-satellites and Unmanned Aerial Vehicles (UAV) are being used to map current land use and estimate land available for sustainable intensification practices in Cambodia. The GFC conducted a number of flights with UAVs (DJI M100) to cover more than 1000 hectares in five sub-regions of the study location. They also worked with the ASMC project in Cambodia to collect data over rice experiment fields to understand the performance of the new instrument introduced. Dr. Sanara's lab will RUA will soon become a flying lab associated with werobotics (<https://werobotics.org/>).
- e. Evaluation of the intensification of legume-cereal intercrop systems is underway and methods for recommending fertilizer rates for millet crop in Senegal, using UAV trials, soil property samples, crop growth simulations and real-time weather information.
- f. The Rural Household Multi-Indicator Survey (RHoMIS) was further expanded and used in Senegal, Ethiopia and Rwanda to rapidly quantify farm household performance using a standardized baseline. It will be used to inform climate-smart agriculture (CSA) interventions as well as help identify insights needed to achieve the larger goals of CSA. Several manuscripts have been submitted and are under review or have been published based on the findings of the RHoMIS. The GFC has engaged in a long-term collaboration with the UK-based NGO TreeAID, where yearly 5-6 new RHoMIS applications are in development for West Africa.

3. Appropriate Scale Mechanization Consortium (ASMC)

- a. Appropriate Scale Mechanization Innovation Hub – Bangladesh (ASMIH-Bangladesh)
 - i. In Boro rice season, one mini-combine harvester and ten reapers were purchased by farmers in four intervention areas, and one rice transplanter and one mini-combine harvester were purchased by a farmer in Khulna thanks to a government subsidy program.
 - ii. A baseline survey was completed and reported. Consultation meetings with AgroMech and Dr. Ben Schwab from Kansas State University took place to create an endline survey tool - the survey will be conducted from June to August 2019.
 - iii. During the current Rabi season of 2018-19, three new farmers planted soybeans using conservation agriculture (CA) machinery in a 3-hectare area (zone of influence). From this area, two farmers decided to purchase two sets of seeder machines under a government subsidy program. Additionally, one non-governmental organization (NGO) purchased five CA seeders for soybean planting
- b. Appropriate Scale Mechanization Innovation Hub – Burkina Faso (ASMIH-Burkina Faso)
 - i. Animal-drawn planter trials expanded to twenty farmers over forty hectares with the Fédération des Professionnels Agricoles du Burkina (FEPAB)-Hauts-Bassins organization, with six of the farmers being women.
 - ii. A local bank, Caisses Populaires, has been made a member of the ASMIH advisory committee and has expressed interest in helping with the scaling up of the planter.
 - iii. A graduate student is working on assessing the impact of mechanization interventions and related farming tasks on gender, how to modify machinery and tools to improve gender inclusion and equity and evaluating the impact of machines and tools on gender-based labor. Another master's student is working on the feed assessment process and she is doing literature review on feed resources in general.
 - iv. There is a writing committee working on the mechanization program and the capacity building process. A program is expected to be implemented in the 2019-2020 academic year.
- c. Appropriate Scale Mechanization Innovation Hub – Cambodia (ASMIH-Cambodia)
 - i. During this reporting period, the no-till seed drill was modified for planting maize following the comments and suggestions of farmers and user from the last field-testing and demonstration. The economic model to determine the feasibility and return on investment (ROI) of the seeder was conducted and a workshop with service providers and stakeholders was also done in Battambang province on March 1, 2019. The technical drawings and fabrication instructions was done, too. The reports are in the supporting documents.

- ii. The ASMIH-Cambodia has partnered with Swisscontact to create the Cambodian Conservation Agriculture Consortium, uniting various stakeholders towards improved soil health in the area.
- iii. Focus group of women farmers in the Battambang province from the project target area. Covered women's roles and decision-making power in regards to machines owned by community or farmer group.
- d. Appropriate Scale Mechanization Innovation Hub – Ethiopia (ASMIH-Ethiopia)
 - i. The ASMIH-Ethiopia promoted and demonstrated majipump effectiveness on forty-four farms. These farms showed an increase in yields with improved water and input use/efficiency: 13% higher average water percolation, 27% lower runoff, 4% lower N-concentration in percolation and 24% lower N-concentration in runoff.
 - ii. Three maize shellers are under fabrication, with 80% of the fabrication complete. They will be ready for testing during the next crop season.
 - iii. A total of five enterprises and three groups of potential start-up businesspeople were given training on basic business foundations and custom-hiring service business related agricultural mechanization services. The training was one way of collaborating with local and international partners, including Digital Opportunity Trust.

4. Research Prioritization and Subawards

- a. Unlocking the production potential of “polder communities” in coastal Bangladesh
 - i. Local capacity building: scientists and professionals affiliated with the project mentored nine MS and five PhD students from four local universities (36% women).
 - ii. Training efforts through the “learning hubs” helped transfer technological interventions to ~7000 farmers, Water Management Organization and representatives (44% women).
 - iii. Twenty-eight organizations were involved with the Knowledge Sharing Platform including National Agricultural Research and Extension System (NARES), international organizations and development partners.
 - iv. Conducted initial talks with the Bangladeshi Government – they have shown interest in perhaps partnering and matching funds for further research projects in polders and coastal zone.
- b. SI integration of crop and livestock production systems in the Sahelian zone of Burkina Faso
 - i. Surveys on natural resource management as well as on gender roles in the intensification of crop and livestock systems were conducted in the project communities.
 - ii. Land-use maps of the Seno and Yatenga provinces were produced. Analyses of village land endowments and wealth endowments in the project communities were also initiated.
 - iii. The baseline characterization of the project has been completed. A manuscript based on the data from the baseline has been submitted to a journal and it is presently under peer review.
 - iv. A Farmers' Field Schools (FFS) were conducted by Association pour la Promotion de l'Élevage au Sahel et en Savane (APESS) during the last cropping season (June to October 2018). The two focal persons for the FFS in each community were trained in improved agronomic practices. Four FFS have been established in each of the eight project communities. Each FFS is about 0.25 ha for improved cowpea variety and 0.25 ha also for improved sorghum variety. Each FFS consists of 10-20 farmers, including women.
- c. Women in Agriculture Network (WAgN) Cambodia
 - i. The project has initiated talks with the World Bank to create a project at the University of Battambang (UBB).
 - ii. Continued talks with local NGO partners, the private sector and other institutions to ensure their technologies are scaled up and out.
 - iii. One manuscript, *Taming the Messy Fringes: Wild Gardening as a Sustainable Intensification Strategy*, has been submitted for publication and several others on youth migration, tomato grafting, gender leadership, soil health and markets are in progress.
 - iv. 'Natural Farming', a guide to sustainable agriculture, was delivered to farmers and key stakeholders at various training meetings during this reporting period.

- d. Sustainably Intensified Production Systems Impact on Nutrition (SIPSIN) in Ethiopia
 - i. Collaborated with the ASMC to include SIPSIN-tested technologies in the ASMC's Ethiopia-based projects.
 - ii. Outreach to community on irrigation-nutrition linkages held in 2018-2019 and will continue through the end of FY2019.
- e. Adoption of SI in dual-purpose millet – leguminous crops – livestock systems in Senegal
 - i. 235 women from different areas (Diourbel, Kaolack, Tamba and Louga) were trained on processing and enriching of millet flour and three groups are manufacturing and commercializing enriched millet flour for health districts and families under support of the project.
 - ii. Thirty-nine farmers were trained on silage techniques and straw storage technique using urea.
 - iii. For all areas of implementation of dual-purpose millet testing (fifteen villages), the SL169, SL423 and Thialack2 varieties achieved the best grain yields. The dual-purpose millet varieties, SL423 and Thialack2, had higher grain yields than other varieties.
 - iv. Twenty-four women were trained on manufacturing millet-based poultry feed and six chicken coops have been already installed for poultry farming activities as a supplementary activities.
- f. Raising crop response: bidirectional learning to catalyze SI at multiple scales in Tanzania
 - i. Data sets from a two-year, 620 household survey conducted with CIMMYT (TAMASA – Taking Maize Agronomy to Scale in Africa) across maize-based farming systems of the Northern and Southern Highlands in Tanzania, where precipitation (remote sensing down-scaled modeled weather data), soils, grain yield, household and farm practices have been linked, at multiple levels (farm and field plot), have been completed. Preliminary findings are consistent with rainfall and soil carbon as important determinants of maize response to fertilizer. A manuscript is in preparation by agricultural economists and agronomists on the team.
 - ii. Both initial and comprehensive SI assessment frameworks have been carried out. Based on country-wide survey data, with a range of intensification and SI practices identified by location, five domains of performance have been completed and considered (where data was sufficient) gender of the farmer and a report is being prepared.
 - iii. The baseline ~210 VBAA's (Village Based Agriculture Advisors; farmer-based extension advisors) survey was conducted in early 2017 and the endline survey was just completed Feb 2019. In terms of the mother and baby trials, these were highly successful means of testing of yield enhancing technologies, including seed treatment and modern varieties of beans. The three-way combination of seed treatment, modern variety and fertilizer was most reliable at enhancing yields, whereas any technology applied alone varied in performance depending on the location. One paper on findings is currently underway.
- g. Precision Agriculture for Smallholder Systems in Africa
 - i. Continued work on building tools to integrate datasets and begun to work with CIAT to develop pilot project on scaling. The project is in the beginning stages of writing a scaling proposal along with CIAT to Google and continue to work on this goal.
 - ii. Substantial advancement on the Google Earth Engine and crop niche modeling software. The project plans to submit its findings as a publication within the next few months. They have recreated the work of the late Shengpan Lin and will have a synopsis paper in Summer 2019.
- h. Center of Excellence on Sustainable Agricultural Intensification and Nutrition (CE SAIN) in Cambodia
 - i. Continued the CE SAIN Lecture Series and short-term training program to build local capacity.
 - ii. CE SAIN was awarded funds by the American Soybean Association (ASA) to conduct swine and chicken feeding trials. Also partnered with ASA for CAST proposal in Cambodia.
 - iii. In discussions to establish several more gardens and technology parks at three additional high schools (integrated farming systems concept) to increase youth engagement in the agriculture sector.

- iv. Signed an agreement with Swisscontact to collaborate on conservation agriculture services, curriculum development (with the Royal Agriculture University of Cambodia), and the creation of additional Agricultural Technology Parks.
- i. Research Output Dissemination Study (RODS)
 - i. The RODS project focuses on evaluating the path from development to end-user for selected innovations produced by the Feed the Future Innovation Labs. The RODS team is completing their report and will present results in May 2019.

5. Crosscutting Impacts on Gender and Nutrition

- a. The SILL subaward in Bangladesh trained four landless women entrepreneurs who will be harvesting rice paddies using the mechanical reapers. They also learned improved seed storage techniques.
- b. The SILL subaward in Cambodia supported Sovanneary Huot in her MS thesis on women's leadership in farm cooperatives. Outcomes included identifying barriers to leadership and suggestions on how to address them through qualitative studies of two women's cooperatives.
- c. Labor markets and other social institutions are identified as "bearers of gender", and constitute areas where gender-based inequities are often reinforced (labor markets, agricultural markets, value chains, etc.) in the WAgN program in Cambodia.
- d. The ASMIH-Cambodia has continued to build capacity on gender: ninety-five Innovation Hub staff and stakeholders have been trained on "Understanding the role of gender in agricultural technology adoption" in Bangladesh, Burkina Faso and Cambodia since June 2018.
- e. The SILL subaward in Burkina Faso conducted monitoring of their household nutrition in the project sites. Twenty-five out of the fifty households selected in each of the eight project communities for the baseline surveys were selected for the monitoring of their food consumption, household dietary diversity, and the dietary practices of nursing mothers and their children between 6-36 months. The study aims to characterize household nutrition and to assess the effect of different intensification options on household food security and nutrition. Data on the anthropometric variables of mothers and their children (weight, height and mid-upper arm circumference) is now in its second year and will be completed by July/August.

B. Issues or concerns encountered during the reporting period

- a. The partial government shutdown from December 2018 to 2019 impacted some project-implementation activities and decision-making functions. In addition, the funding allocation delay from USAID caused slight disruptions within some research activities. Host-country institutions have had difficulties in conducting their activities without the timely distribution of funds. Corrective measures have been taken in discussion with our AOR and other administrative staff from USAID, so all consortia and projects are now fully functioning with the exception of the Congressional-restricted countries in our Innovation Lab, Cambodia and Ethiopia. These delays could necessitate no-cost extensions in Fall 2019.

Human and Institutional Capacity Development

A. Short-term training

Country of Training	Brief Purpose of Training	Who was Trained	Number Trained		
			M	F	Total
Bangladesh	Hermetic Storage – community seed bank model	Producers	28	11	39
Bangladesh	Nutritional awareness (Zinc rice, sunflower, maize and mungbean)	Producers	36	119	155
Bangladesh	Traveling Seminar – knowledge sharing on improved climate-resilient and nutritious HYV rice and its benefits	Producers	155	96	251
Bangladesh	Mechanical Harvester : use of reaper for harvesting rice	Producers, Government	84	132	216
Bangladesh	Troubleshooting agricultural machinery – Reaper, Axial Flow Pump. Mini-tractor	Producers	56	15	56

Country of Training	Brief Purpose of Training	Who was Trained	Number Trained		
			M	F	Total
Bangladesh	Cultivation procedures and residual soil-water management for rabi crops in the dry season 2018-2019	Producers	110	83	193
Bangladesh	Understanding Roles of Gender in Technology Adoption Training	Producers, Private Sector, Civil Society	28	7	35
Bangladesh	Gender Technology Assessment Training	Civil Society	14	3	17
Bangladesh	Regional symposium on Sustainable Agricultural Mechanization and Post-Harvest Practices in Bangladesh	Producers, Government, Civil Society	103	12	115
Bangladesh	Field Day on mechanical rice transplanted crop field at Baratia, Dumuria, Khulna	Producers, Government, Civil Society	28	7	35
Bangladesh	Field day on mechanical rice transplanted crop field at Mothbaria, Dumuria, Khulna	Producers, Government, Civil Society	13	25	38
Bangladesh	Field day on mechanical rice transplanted crop field at Kalapara, Patuakhali	Producers, Private Sector, Civil Society	24	0	24
Bangladesh	Training on Rice transplanter maintenance at Kalapara, Patuakhali	Producers, Private Sector, Civil Society	14	0	14
Bangladesh	Field Day on mechanical rice transplanted crop field at Wazipur, Barishal	Producers, Civil Society	22	8	30
Bangladesh	Refresher training at Subarnachar, Noakhali on Reaper and mini-combine harvester	Producers, Civil Society	14	0	14
Bangladesh	Field Day on reaper and mini-combine harvester	Producers, Government, Civil Society	49	0	49
Bangladesh	Field Day on mechanical rice transplanted crop field at Subarnachar, Noakhali	Producers, Government, Civil Society	33	1	34
Bangladesh	Refresher training at Wazipur, Barishal on the reaper and mini-combine harvester	Producers, Government, Civil Society	14	0	14
Bangladesh	Hands-on training at Kalapara, Patuakhali on reaper and mini-combine harvester	Producers, Government, Civil Society	15	0	15
Bangladesh	Hands-on training at Dumuria, Khulna on reaper and mini-combine harvester	Producers, Government, Civil Society	15	0	15
Bangladesh	Field Day on reaper and mini-combine harvester	Producers, Government, Civil Society, Private Sector	28	27	55
Bangladesh	Workshop: Understanding the Role of Gender in Agriculture	Civil Society, Private Sector	25	8	33
Bangladesh	Training on Assessing Technologies for Gender Sensitivity	Civil Society	14	4	18
Burkina Faso	Sheep fattening training Ouahigouya	Producers	9	11	20
Burkina Faso	Sheep fattening training Dori	Producers	15	5	20
Burkina Faso	Improved agronomic practices	Producers	47	8	55
Cambodia	Performance evaluation testing of broadcast seeder compared to conventional hand broadcasting and demonstration to farmers in Battambang province	Producers, Government, Civil Society	20	10	30
Cambodia	Field visit of 2 nd year students of the FAE/RUA to the project sites	Civil Society	13	8	21
Cambodia	Field visit: straw baler - students and lecturers of agricultural machinery	Civil Society, Producers	39	12	51
Cambodia	Field visit of 3 rd year students of Battambang	Producers, Civil Society	28	10	38
Cambodia	Testing and demonstration of conventional a conventional direct seeder in Battambang	Producers, Government, Civil Society	17	10	27

Country of Training	Brief Purpose of Training	Who was Trained	Number Trained		
			M	F	Total
Cambodia	Testing and demonstration of no-till seed drill in Ratanak Mondul, Battambang	Producers, Government, Civil Society	17	5	22
Cambodia	Understanding Gender Roles in Technology Adoption Training	Government, Private Sector, Civil Society	19	13	32
Cambodia	Gender Technology Assessment Training	Government, Private Sector, Civil Society	7	5	12
Cambodia	Understanding Gender Roles in Technology Adoption Training	Civil Society, Private Sector	28	7	35
Cambodia	Cambodia seed-saving and soil health workshop	Producers, Government, Private Sector, Civil Society	58	45	103
Cambodia	Tomato grafting workshop – ADDA 1	Producers, Civil Society	9	21	30
Cambodia	Tomato grafting workshop – ADDA 2	Producers, Civil Society, Private Sector	15	38	53
Cambodia	Tomato grafting workshop – Oxfam	Producers, Government, Civil Society, Private Sector	24	22	46
Cambodia	Tomato grafting workshop – Royal University of Agriculture	Civil Society	18	15	33
Ethiopia	Farmer training and field demonstration on maize sheller	Government	381	165	546
Ethiopia	Novel animal drawn-yoke	Government, Private Sector	12	3	15
Ethiopia	Training on custom hiring service	Government	18	7	25
Ethiopia	Training on start-up foundation	Government, Private Sector	18	7	25
Ethiopia	Conservation effects assessment	Civil Society	7	4	11
Ethiopia	Water availability – Maji pump	Civil Society	4	2	6
Ethiopia	Yoke-making training of trainers	Producers, Government, Private Sector	15	3	18
Senegal	Biomass and nutrient flow analysis at plot, herd and farm levels	Producers	1	0	1
Tanzania	Training in Southern Highlands of enumerators and extension advisors	Government, Private Sector, Civil Society	7	5	12
			1768	999	2767

B. Long-term training*

Name	Sex	University	Degree	Major	Program End Date (month/year)	Degree Granted (Y/N)	Home Country
Sadiou Dianda	M	Institute of Rural Development/Polytechnic University of Bobo-Dioulasso	M.S.	Agriculture Engineering	July 2019	N	Burkina Faso
Hafsatou Koudougou	F	Institute of Rural Development/Polytechnic University of Bobo-Dioulasso	M.S.	Agriculture Engineering	June 2019	N	Burkina Faso
Ouda Sanfo	M	Institute of Rural Development/Polytechnic University of Bobo-Dioulasso	M.S.	Agriculture Engineering	June 2019	N	Burkina Faso
Rotha Chork	M	Royal University of Agriculture	M.S.	Agronomy	November 2020	N	Cambodia
Sreychou Heng	F	Royal University of Agriculture	M.S.	Animal Science	November 2019	N	Cambodia
Lyhour Hin	M	Royal University of Agriculture	Ph.D.	Agricultural Engineering	November 2020	N	Cambodia
Bunseng Lam	M	Royal University of Agriculture	M.S.	Agronomy	November 2020	N	Cambodia
Zigale Admas	M	Bahir Dar University	M.S.	Mechanical Engineering	September 2019	N	Ethiopia
Sewunet Alemu	F	Bahir Dar University	Ph.D.	Agricultural Mechanization Engineering	September 2021	N	Ethiopia
Sisay Ares	M	Bahir Dar University	Ph.D.	Water Resources Eng. & Mgt	July 2020	N	Ethiopia
Enguday Atalay	F	Bahir Dar University	M.S.	Hydrology Engineering	February 2019	Y	Ethiopia
Meseret Cherie	F	Bahir Dar University	M.S.	Gender and Development	September 2019	N	Ethiopia
Temesgen Fantahun	M	Bahir Dar University	M.S.	Irrigation Eng. and Management	September 2020	N	Ethiopia
Bekelech Getachew	F	Bahir Dar University	M.S.	Food Engineering	September 2019	N	Ethiopia
Getenet Kebede	M	Bahir Dar University	Ph.D.	Agricultural Mechanization Engineering	September 2021	N	Ethiopia
Solomon Kefyalew	M	Bahir Dar University	M.S.	Industrial Engineering	September 2020	N	Ethiopia
Melkamu Keri	M	Bahir Dar University	M.S.	Hydrology Engineering	October 2018	Y	Ethiopia
Yichalem Mulat	F	Bahir Dar University	M.S.	Gender and Development	September 2019	N	Ethiopia
Ewentu Tefera	M	Bahir Dar University	M.S.	Mechanical Engineering	September 2019	N	Ethiopia
Solomon Teskeste	M	Bahir Dar University	Ph.D.	Agricultural Mechanization Engineering	September 2021	N	Ethiopia
Senait Zegeye	F	Bahir Dar University	M.S.	Economics	September 2019	N	Ethiopia

* Table includes new or revised long-term training since the FY 2018 Annual Report

Innovation Transfer and Scaling Partnerships

- A.** Women in Agriculture Network (WAgN) Cambodia
 - a. Green manure cover and relay cropping after rice
 - i. Partnerships: ECHO Asia, CIRAD, CE SAIN
 - b. Tomatoes grafted onto eggplant rootstock
 - i. Partnerships: University of Battambang, World Vegetable Center, Agriculture Development Denmark Asia (ADDA), CE SAIN
 - c. Wild Gardens
 - i. Partnerships: University of Battambang, ECHO Asia, World Vegetable Center, Kasetsart University, CE SAIN, CIRAD/Conservation Agriculture Service Center (CASC)
- B.** Raising crop response in Tanzania
 - a. Bean seed treatment and modern varieties
 - i. Partnerships: Farm Input Promotions (FIPS) Africa, VBAAAs, Tanzania Agricultural Research Institute (TARI) Uyo, district councils, NGOs (One Acre Fund, AGRA Tanzania, NAFKA)
 - a. Lablab variety release
 - i. Partnerships: Sahelian Agricultural Research Institute (SARI) support for on-farm training

Note: The innovations described above reflect technology transfers between October 1, 2018 – March 31, 2019. All innovations will be reported in the Annual and Final Reports.

Future Work

- A.** The SIIL Annual Meeting was held during April 8-10, 2019, in Saly, Senegal. It brought together all SIIL projects to report on their progress over the life of the specific projects through FY2018 and the first part of FY2019, as well as future activities to achieve the goals and objectives. The focus of the annual meeting was suitability, scalability and sustainability. Projects and consortia had the opportunity to meet with the SIIL External Advisory Board and USAID representatives to talk discuss the results and details of their projects. The meeting also specifically highlighted projects in Senegal that have been initiated as a result of the SIIL partnership with the Institut Sénégalais de Recherches Agricole (ISRA) and Peace Corps Senegal through site visits. These included a technology park at high school and youth engagement activities.
- B.** Development of a potential CORAF/USAID Pilot Research Coordination Hub and Technology Park initiative is underway. Initial discussion with partners occurred on 11 April and a plan was developed. A stakeholder workshop is being planned related to the implementation of activities at a more detailed scale, specific to countries within the West Africa region. The workshop will be held in Senegal at the beginning of August, with representatives from the CORAF centers, USAID Missions, NARES, private sector, and other key stakeholder organizations.
- C.** The SOILS Consortium will be conducting two Soil Fertility Summits, one in Niger and one in Ethiopia. The primary purpose of these summits is to build from previous initiatives and co-develop concrete goals, activities, and develop a road map to implement a national strategy to improve soil fertility that leads to improved resilience and food and nutritional security.
- D.** Continuing to support our consortia and subawards in their final year of research activities, and gear-up for closing of the first phase and plan for the potential next phase of the SIIL.