

Feed the Future Innovation Lab for Collaborative Research on Sustainable Intensification Annual Performance Report FY 2015



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Annual Performance Report FY 2015

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I. Feed the Future Sustainable Intensification Innovation Lab

A. Management Entity Information

The Feed the Future Innovation Lab for Collaborative Research on Sustainable Intensification (SIIL) is housed at Kansas State University in Manhattan, KS. The management entity was established in September 2014 with the hiring of the Sustainable Intensification Innovation Lab Director, Dr. Vara Prasad. The Business Manager, Katy Bach, was hired in early 2015, and the Program Coordinator, Molly McKnight, joined the team full-time in July 2015. In August 2015, the faculty hire in Global Food Systems and Nutrition, Dr. Jessie Vipham, assumed her position. Regional Coordinators in Asia and East Africa were appointed in September 2015. Though faced with some logistical challenges, significant progress was made toward securing an Associate Director for SIIL and a Regional Coordinator for West Africa.

The management entity staff includes the following individuals:



Vara Prasad – Director

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Phone: 1.785.532.3746

Dr. Vara Prasad, Crop Physiologist, serves as the Program Director of the USAID Feed the Future Innovation Lab for Collaborative Research on Sustainable Intensification (SIIL). He has extensive international experience in both Africa and Asia, and has had significant involvement with the SANREM CRSP (Sustainable Agriculture and Natural Resource Management Collaborative Research Support Program) of USAID, the predecessor to SIIL.



Molly McKnight – Program Coordinator

E-mail: mmcknight@ksu.edu

Phone: 1.785.532.3586

Molly McKnight serves as the SIIL Program Coordinator. She supports the development of subcontract awards, research project monitoring, knowledge management, and oversight of the reporting and information platform. She holds a B.S. in Food Science and an M.S. in Plant Breeding and Genetics from Purdue University. Molly has experience collaborating with international partners in Turkey, Senegal, and Haiti and has also worked for Purdue's Center for Global Food Security.



Katy Bach – Business Manager

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Phone: 1.785.532.7072

Katy Bach serves as the Business Manager for the SIIL. She is responsible for all components of financial management, post-award accounting, procurement, travel planning, and business management of the Innovation Lab. Katy holds a B.S. in Business Administration and is licensed as a Certified Public Accountant. Prior to joining the SIIL team, she worked with Kansas State University Athletics and numerous small businesses in their accounting departments.



Jessie Vipham – Global Food Systems and Nutrition Faculty

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Phone: 1.785.532.3486

Dr. Jessie Vipham is a Food Microbiologist by training, and serves as the SILL faculty hire in Global Food Systems and Nutrition. She holds a B.S. in Agriculture Business from Kansas State University, as well as an M.S. and PhD in Animal Science from Texas Tech University. While at Texas Tech, Jessie was involved with faculty members of the International Center for Food Industry Excellence (ICFIE). She is experienced in international food security research, and has spent a significant amount of time strengthening food systems in Latin America



Jovin Lwehabura – East Africa Regional Coordinator

E-mail: j.lwehabura@cgiar.org

Mr. Jovin Lwehabura has more than 10 years of experience working on applications of geospatial science & technology in sustainable management of natural resources. He holds an M.S. degree in Geographic Information Systems (MS GIS) from the University of Redlands, California as well as a B.Sc. in Geomatics from the University of Dar es Salaam. Mr. Lwehabura is a member of Global society for Conservation Geographic Information Systems (SCGIS). He has developed several GIS

Databases, guide mapping and support implementations of land use planning for more than 50 local communities in Tanzania.



Dinabandhu Pandit – Asia Regional Coordinator

E-mail: d.pandit@cgiar.org

Dr. Dinabandhu Pandit holds a B.Sc Ag and M.Sc Ag in Genetics and Plant Breeding from Bangladesh Agricultural University (BAU), Mymensingh. He obtained his PhD in Plant Breeding from Stabropol Agricultural Institute in Russia in 1994. In the first 17 years of his research career, he was mainly involved in wheat breeding work and released 15 wheat varieties as a member of the breeding team at the Wheat Research Centre (WRC), BARI.

From 2002-2011, he coordinated outreach activities in farmers' fields (adaptive trials, demonstrations, training, etc.) of WRC, BARI in collaboration with GO-NGO partners in addition to conducting on-station breeding research. From 2011-2015, Dr. Pandit worked with CIMMYT-Bangladesh as a Cropping Systems Agronomist for the Cereal Systems Initiative for South Asia in Bangladesh (CSISA-BD).

B. External Advisory Board

The External Advisory Board (EAB) is chaired by Dr. Jules Pretty. Members of the EAB were shortlisted in mid-2015 and made official in September, prior to the deadline for full proposals. The EAB was actively involved in evaluating the proposals and making final decisions on project selection.



Professor Jules Pretty – Chair

University of Essex

Dr. Jules Pretty is Deputy Vice-Chancellor at the University of Essex, and Professor of Environment and Society. His 18 books include *This Luminous Coast* (2011), *Nature and Culture* (2010), *The Earth Only Endures* (2007), and *Agri-Culture* (2002). He is a Fellow of the Society of Biology and the Royal Society of Arts, former Deputy-Chair of the government's Advisory Committee on Releases to the Environment, and has served on advisory committees for a number of government departments and research councils.

He was a member of two Royal Society working groups that published *Reaping the Benefits* (2009) and *People and the Planet* (2012), and was a member of the UK government Foresight project on *Global Food and Farming Futures* (2011). He is the founding Chief Editor of the *International Journal of Agricultural Sustainability*. He received an OBE in 2006 for services to sustainable agriculture, and an honorary degree from Ohio State University in 2009. More details can be found at www.julespretty.com.



Dr. John Dixon

Australian Centre for International Agricultural Research

Dr. John Dixon is the Principal Advisor/Research Program Manager for the Cropping Systems and Economics program. The program aims to improve food security through enhanced productivity and sustainability of field crop farming systems using collaborative R&D partnerships for biophysical and economic research and development.

Dr. Dixon has over 30 years developing country experience with agricultural research and development, including cropping systems, economics and natural resource management in South, South-east and East Asia, Africa, Latin America and the Middle East, working for the CGIAR system and the FAO. He has served as Director, Impacts, Targeting and Assessment at CIMMYT, leading activities on impact assessment, value chains, impact knowledge sharing, systems agronomy and conservation agriculture; and also in various capacities with FAO in their global, regional and country programs. Dr. Dixon is a graduate from the University of New England with a PhD (agricultural economics), Masters (natural resources), Masters (economics) and Bachelor in Rural Science.



Dr. Cornelia Flora

Iowa State University

Dr. Cornelia Flora is an Emeritus Distinguished Professor in the Department of Sociology at Iowa State University. Her research interests include international and domestic development, community, and the sociology of science and technology, particularly as related to agriculture and participatory change. Socio-technical regime change and capitals transformations (natural, cultural, human, social, political and financial/built capitals) guide her current research includes work on the community development, sustainable agriculture and natural resource management, with particular attention to how class, gender, and ethnicity influence and are influenced by technology and policy.



Dr. Deborah Bossio

International Center for Tropical Agriculture (CIAT)

Dr. Deborah Bossio serves as the Soils Research Area Director for CIAT. In this role, Dr. Bossio is responsible for ensuring the quality and scientific relevance of the research programs and for making sure that the Research Area under her leadership is regularly reviewed and assessed. Dr. Bossio holds a PhD in Soil Science from the University of California, USA. She has a solid background in soil science (emphasis on soil fertility, sustainable agriculture, soil ecology, nutrient cycling, and soil carbon dynamics), a keen interest in ecosystem services and agriculture's environmental impacts, and a clear understanding of the links between soil and water management.



Dr. Jemimah Njuki

Canada's International Development Research Center (IDRC)

Dr. Jemimah Njuki has fifteen years of experience overseeing gender-responsive and women-targeted research and development projects that link women smallholder farmers to markets, integrate gender in cooperatives, apply participatory gender-responsive research, and more. As senior program officer at the International Development Research Centre (IDRC), she manages the Cultivate Africa's Future program.



Dr. Peter Thorne

International Livestock Research Institute (ILRI)

Dr. Peter Thorne coordinates the Africa RISING project in the Ethiopian Highlands. He completed his PhD at the University of Nottingham in animal nutrition, with a part of his research conducted at the University of the Philippines in Los Banos. His career has allowed him to work in both public and private sectors, focusing largely on the evolution of mixed farming systems in Africa and Asia. Prior to joining ILRI, Dr. Thorne was responsible for the national dairy benchmarking service in Britain.

C. Focus Countries

The Sustainable Intensification Innovation Lab (SIIL) works in West Africa, East Africa, and Asia. The six focus countries are listed and shown below.

1. **Bangladesh**
2. **Cambodia**
3. **Burkina Faso**
4. **Senegal**
5. **Tanzania**
6. **Ethiopia**



D. List of Program Partners

United States

ADM Institute for the Prevention of Postharvest Loss
 Africa Soil Information Service (at the Earth Institute – Columbia University)
 Columbia University
 Feed the Future Horticulture Innovation Lab
 Feed the Future Innovation Lab for the Reduction of Postharvest Loss
 Feed the Future Innovation Lab for Small Scale Irrigation
 Kansas State University
 Michigan State University
 North Carolina A&T State University
 Tillers International
 University of Illinois at Urbana-Champaign
 University of California, Davis

Bangladesh

Bangladesh Agricultural University
 International Maize and Wheat Improvement Center (CIMMYT)

Burkina Faso

Polytechnic University of Bobo-Dioulasso

Cambodia

Cambodia Ministry of Agriculture, Forestry, and Fisheries
 Royal University of Agriculture, Phnom Penh

Ethiopia

Bahir Dar University & Bahir Dar Institute of Technology
 International Livestock Research Institute (ILRI)

Tanzania

International Center for Tropical Agriculture (CIAT)

E. Acronyms

ACIAR – Australian Centre for International Agricultural Research
 Africa RISING – Africa Research in Sustainable Intensification for the Next Generation
 ASMC – Appropriate Scale Mechanization Consortium
 CGIAR – Consultative Group on International Agricultural Research
 CIAT – International Center for Tropical Agriculture
 CIMMYT – International Maize and Wheat Improvement Center
 CSA – Climate Smart Agriculture
 CSIRO - Commonwealth Scientific and Industrial Research Organisation
 EAB – External Advisory Board
 EMMP – Environmental Management and Mitigation Plan
 FTFMS – Feed the Future Monitoring System
 GFSRC – Geospatial and Farming Systems Research Consortium
 ICRISAT – International Crops Research Institute for the Semi-Arid Tropics
 IDRC – International Development Research Centre
 IFPRI – International Food Policy Research Institute
 ILRI – International Livestock Research Institute
 IRB – Institutional Review Board
 IRRI – International Rice Research Institute
 ISRA – Institut Senegalais de Recherches Agricoles (ISRA)
 ME – Management Entity
 MSU – Michigan State University
 NARS – National Agricultural Research Systems
 PI – Principal Investigator
 RFA – Request for Applications
 SANREM CRSP – Sustainable Agriculture and Natural Resource Management Collaborative Research Support Program
 SI – Sustainable Intensification
 SIIL – Sustainable Intensification Innovation Lab
 SWOT – Strengths, Weaknesses, Opportunities, and Threats
 USAID – United States Agency for International Development
 ZOI – Zones of Influence

II. Executive Summary

The Feed the Future Innovation Lab for Collaborative Research on Sustainable Intensification was established on September 15, 2014. This is the first annual report for the FY 2015 (through September 30, 2015). Activities during this period were mainly focused on establishing and staffing the management entity (ME) of the Sustainable Intensification Innovation Lab (SIIL) and Geospatial and Farming Systems Research Consortium (GFSRC), identifying the lead institution for the Appropriate Scale Mechanization Consortium (ASMC) through a competitive process, and engaging with partner institutions and members to develop a research and capacity building portfolio for the SIIL.

The ME for SIIL consists of a Director (Vara Prasad), an Associate Director (identified, not yet hired), a Program Coordinator (Molly McKnight), a Business Manager (Katy Bach), and a Global Food Systems and Nutrition Faculty (Jessie Vipham). In addition, we have two Regional Coordinators (Jovin Lwehabura for East Africa and Dinabhandhu Pandit for Asia). The GFSRC, led by the University of California, Davis, consists of a Director (Robert Hijmans), Programmer (Alex Mandel) and Project Scientist (Aniruddha Ghosh). The ASMC was competitively awarded to the University of Illinois, Urbana-Champaign and will be led by the Director (Alan Hansen).

The research and capacity building portfolio was established through an active participatory approach by conducting SWOT (Strengths, Weaknesses, Opportunities and Threats) analyses. A team from the ME held these priority setting stakeholder workshops in Tanzania, Bangladesh, and Cambodia, where scholars from national research programs, universities, international centers, private sector and representatives from farmer organizations interacted with the ME to prioritize topics, identify gaps and opportunities associated with various components of SI. They also assessed geospatial needs and gaps, mechanization needs and gaps, gender, nutrition, and knowledge sharing platforms. The summaries and full reports from these were provided to those developing concept notes and proposals for the SIIL research subawards.

The six members of the External Advisory Board (EAB) were identified and will be chaired by Jules Pretty. The call for concept note submission for SIIL research subawards was released in June 2015 and the Lab received 98 concept notes, 25 of which were asked to develop full proposals. The full proposals were reviewed and currently a select number of proposals are being revised before final selection.

The majority of the research in this report was initiated by GFSRC and is focused on identifying opportunities for sustainable intensification for SIIL in the six target countries. These data and reports have been openly made available at University of California – Davis website (<http://gfc.ucdavis.edu/profiles>) and the studies provide context for research subawards.

Targeted subawards were given to Michigan State University (led by Sieglinde Snapp) and Columbia University (led by Cheryl Palm) to develop a framework for indicators and a matrix for measuring SI intervention across multiple domains and scales.

During the first year, the SIIL was invited by the Rwanda USAID Mission to conduct detailed SWOT analyses related to climate smart agriculture and sustainable intensification. We conducted detailed analyses, developed a country profile for Rwanda, and submitted the report to USAID Rwanda.

The SIIL has developed an online reporting hub, which is ready to be used by the research subawards. This online system, Piestar, includes reporting, travel and equipment requests, and Feed the Future indicator data collection.

III. Program Activities and Highlights

A. Establishment of the SIIL External Advisory Board

Originally, 19 experts with expertise on different components of sustainable intensification in the context of social and biophysical sciences were proposed as potential members of the SIIL External Advisory Board (EAB). From this group, six EAB members were identified and confirmed, in addition to the EAB chair, Dr. Jules Pretty. The EAB now includes Dr. Jules Pretty (University of Sussex), Dr. Jemimah Njuki (IDRC), Dr. John Dixon (ACIAR), Dr. Cornelia Flora (Iowa State University), Dr. Peter Thorne (ILRI/Africa RISING), and Dr. Deborah Bossio (CIAT).

B. Development of country profiles with GFSRC

The GFSRC created country profiles for each of the SIIL's six focus countries with information about the physical environment, fertilizer use, irrigation, human health, policy, and conservation priorities. The immediate purpose of these profiles was to provide background information to potential grantees for SIIL research subawards. The profiles also serve as a resource in all SIIL endeavors, which can be utilized and expanded upon throughout the life of the program. A profile for a seventh country, Rwanda, was added based on a request from the USAID Mission in Rwanda. There is potential for the GFSRC to expand country profiling efforts to more Feed the Future countries in future years.

C. Scoping study for climate smart agriculture and sustainable intensification in Rwanda

In August 2015, SIIL was asked to conduct a detailed SWOT analysis with input from major stakeholders in Rwanda and provide strategic thematic areas that would be critical to consider for a Climate Smart Agriculture (CSA) program. The main goal of this assessment was to document and inform USAID-Rwanda about CSA and SI opportunities that fit its overarching strategy of designing sustainable, market-oriented interventions designed to reduce poverty and improve nutrition.

These efforts included synthesizing existing knowledge on CSA and SI and identifying knowledge gaps and thematic areas for interventions through SWOT analysis with relevant stakeholders. Additionally, geospatial tools were used to map the current state of agriculture, climate, soils, vulnerable geographic areas and zones of influence (ZOI) where CSA and SI can be implemented.

D. Creation of the SIIL Reporting Hub

As part of SIIL's plan for monitoring and evaluating performance, assessing impacts, and reporting, the SIIL Reporting Hub was established. This Reporting Hub was adapted from the web-based monitoring, evaluation, and progress reporting system that has already been utilized successfully by the Sorghum and Millet Innovation Lab. Working with the company Piestar, we were able to customize the system to our Innovation Lab's needs. Further customization may be needed as we adapt the system to accommodate the two consortia unique to SIIL.

The Reporting Hub will serve as the primary collection point for annual operating plan progress reports, success stories, publications and presentations, and progress toward Feed the Future indicators. The Hub will also facilitate travel and equipment requests, guiding PIs toward compliance with USAID regulations. All subawardees will be provided with access to the Reporting Hub as well as necessary training for use of the system.

IV. Key Accomplishments

A. Establishment of SIIL Management Entity

All staff positions for the Sustainable Intensification Innovation Lab have been filled at Kansas State University, as well as two of the Regional Coordinator positions. The SIIL management entity offices, located in Waters Hall at Kansas State University, were finished in May 2015. The office space, which includes a conference room, has fostered engagement with other Innovation Labs housed at Kansas State University, allowing for improvement efficiency in our program.

B. Identification of lead entity for the Appropriate Scale Mechanization Consortium

A call for concept notes for the Appropriate Scale Mechanization Consortium subaward was issued in December 2014, and 17 concept notes were received in response. An external review board, consisting of four members with expertise directly related to the envisioned Consortium, selected five universities to develop full proposals. The proposals were due in April 2015 and were subsequently reviewed by the external board. In July 2015, Dr. Alan Hansen at the University of Illinois at Urbana-Champaign was selected to lead the Appropriate Scale Mechanization Consortium. The \$4.7 million subaward spans a four-year period, starting October 01, 2015 and ending September 30, 2019.

C. Progressed toward selection of research subawards

The Request for Applications (RFA) for research subawards was issued on June 10, 2015, and concept notes were due on July 10, 2015. A total of 98 concept notes were submitted and evaluated by external reviewers, USAID focus country missions, and SIIL leadership. Twenty-six concept notes were shortlisted and the deadline for full proposal submission was September 19, 2015. Twenty-five full proposals were received and evaluated by the External Advisory Board (EAB). The final selection of research subawards will take place in October 2015.

V. Research Program Overview and Structure

The research program for the Sustainable Intensification Innovation Lab is based on three foundational components: the Geospatial and Farming Systems Research Consortium, the Appropriate Scale Mechanization Consortium, and a portfolio of research subawards.

A. The Geospatial and Farming Systems Research Consortium (GFSRC)

The Geospatial and Farming Systems Research Consortium (GFSRC) is led by Dr. Robert Hijmans at the University of California-Davis and supports the SILL by providing spatially-explicit data and analysis to:

- Identify current patterns of agricultural intensification in the regions of interest
- Analyze the determinants of these patterns
- Identify opportunities for sustainable intensification (target regions, technologies, and their potential impacts)
- Understand spatially the extent of potential and actual adoption of particular technologies that the subawardees work on
- Help develop strategies for increasing adoption and diffusion of technologies, taking into consideration not only agro-ecological conditions, but also market and socio-economic and environmental conditions and risks
- Develop case studies on technology targeting and scaling that will be made available online and used in regional workshops/training courses
- Make available all geospatial and farming systems data collected and produced by the projects in an interoperable, online data management platform
- Organize these materials into an interdisciplinary university-level course on the topic

B. The Appropriate Scale Mechanization Consortium (ASMC)

The Appropriate Scale Mechanization Consortium (ASMC), led by Dr. Alan Hansen at the University of Illinois at Urbana-Champaign, will introduce multifunctional and modular mechanized technologies that are technically, environmentally, and economically appropriate for use by smallholder farmers, with the flexibility to accommodate different power sources. These technologies will contribute to enhanced labor productivity and increased land productivity, thus sustainably reducing poverty among smallholders. The overall objective of this project is to intensify smallholder farmers' cropping systems and on-farm operations through mechanization in a sustainable manner. Sustainable intensification will integrate social, economic and environmental impacts with a specific focus on easing the burden on women. The ASMC includes members with substantial institutional capacity and expertise, and active collaborations with institutions and entry point organizations in four designated countries in South Asia and East and West Africa: Bangladesh, Cambodia, Ethiopia, and Burkina Faso.

The operational strategy includes the following six key functions:

- Engage entry point organizations to establish Innovation Hubs
- Assess country specific mechanization challenges, opportunities, and priorities
- Implement country specific activities utilizing participatory research methods
- Build human capacity with gender emphasis
- Monitor and evaluate impact of activities
- Share knowledge with in-country stakeholders

C. Research Subawards

Approximately seven research subawards will be awarded, which will investigate a diverse range of sustainable intensification practices and innovations across the SILL's six focus countries. Selection of the subawards will result from a concept note and full proposal process, with final decisions made by the Innovation Lab's External Advisory Board (EAB). The subawards will be led through collaborations with U.S. universities, NARS centers, and CGIAR partners.

These subawards will utilize both the Geospatial and Farming Systems Research and Appropriate Scale Mechanization Consortia to investigate sustainable intensification practices, enable knowledge sharing, and develop scaling-up opportunities. The goal of the subawards, after the first five years of the SILL, is to develop a portfolio of prioritized farming systems for SI that will provide the greatest potential to reduce hunger and poverty while improving the nutritional status of farmers.

VI. Research Project Reports

A. Geospatial Framework

I. *Geospatial and Farming Systems Research Consortium*

- (1) Dr. Robert Hijmans (UC Davis) serves as the director of the GFSRC, and is supported by two staff positions. Alex Mandel was recruited as (geospatial) Programmer, starting May 1, 2015. He has a PhD in geography and a long track record in open source geospatial projects. He has a strong interest in developing web-based applications and in capacity building. Aniruddha Ghosh was recruited as Project scientist / coordinator, starting July 15, 2015. Aniruddha has a background in physics (MS) and remote sensing (PhD).
- (2) The Geospatial and Farming Systems Research Consortium (GFSRC) supports SIIL by providing data and analysis to: (i) identify current patterns of agricultural intensification in the regions of interest; (ii) analyze the determinants of these patterns; (iii) identify opportunities for sustainable intensification (target regions, technologies) and estimate their potential impacts; (iv) provide support for activities seeking to stimulate the adoption of intensification practices; (v) understand potential and actual adoption of the particular technologies that the sub-grantees of this project work on; (vi) help develop strategies for improved adoption of technologies taking into consideration not only agro-ecological conditions, but also market and socio-economic and environmental conditions, and social and health outcomes; (vii) develop case studies for this type of analysis to be made available online and to be used in regional workshops/training courses; (viii) make available all geospatial and farming systems data collected and produced by the project; and (ix) organize these materials into an interdisciplinary university level course on SI.
- (3) Collaborators
 - (a) Steering committee: The GFSRC gets support from a steering committee consisting of: Karen Garrett, Florida State University; Ken Giller, Wageningen University; Mario Herrero, CSIRO; Jawoo Koo, IFPRI; Andy Nelson, IRRI; Rebecca Nelson, Cornell University, McKnight Foundation; An Notenbaert, CIAT, Nairobi; Sibiry Traoré, ICRISAT; Jacob van Etten, Biodiversity International; Paul Winters, American University.
 - (b) Subawards: Two subawards under the GFSRC were awarded to CIAT (*Tanzania*) and Africa Soil Information Service (AfSIS)/Quantitative Engineering Design (QED) (*USA*)
- (4) Achievements
 - (a) Creation of country profiles: A website with country profiles was launched as <http://gfc.ucdavis.edu/profiles/>. This website brings together a very broad array of information about each of our target countries. This includes descriptions of the physical environment (climate, climate change, soils), agriculture (animal and crop distribution and crop yield), fertilizer use, irrigation, human health, policy, and nature conservation priorities. The immediate purpose was to provide some background information (together with SIIL SWOT analyses and other resources) for potential grantees.
 - (b) Collection of spatial data: The GFSRC has initiated work to bring together spatial data of unprecedented diversity and quality for the target countries, and sometimes for larger regions (e.g. Africa). A first version will be released in October 2015 on <http://gfc.ucdavis.edu/data>. This is a compilation of relevant existing high-resolution spatio-temporal data that can be used to study sustainable intensification. They include an array of environmental (climate), human health, and other data. Some of the datasets are illustrated on the country profiles website.
- (5) Capacity Building – No capacity building activities took place through the GFSRC in FY2015.
- (6) Lessons Learned - There are major opportunities to take farming systems and geo-spatial research to the next level to become more relevant for research and policy, in part by providing better access to (processed) data from surveys and other sources. These data and available computational infrastructure now also allow for building applications to provide practical advice to farmers and intermediaries.

- (7) Presentation and Publications – Apart from creating publicly accessible country profiles (see section 4a above), no presentations or publications were completed in FY2015

B. Developing Indicators for Sustainable Intensification

I. Developing Indicators for Sustainable Intensification – Columbia/Michigan State University subaward

- (1) The project is led by Drs. Sieglinde Snapp and Philip Grabowski at Michigan State University. At Columbia University, efforts are led by Drs. Mark Musumba and Cheryl Palm.
- (2) The subaward objectives include:
 - (a) Compare the proposed SI indicator set to data that are being or have been collected by researchers involved in agricultural research.
 - (b) Refine the proposed set of SI indicators emerging from previous discussions by obtaining users' feedback on those indicators and evaluating the feasibility of effectively implementing them.
 - (c) Further develop the framework for SI indicators, drawing on the information from the above activities, with specific attention to tradeoffs among domains of SI and communicating progress towards SI using the indicators and metrics
- (3) Collaborators - Collaborators include Columbia University, Michigan State University. The project also includes Africa RISING program collaborators.
- (4) Achievements - While this subaward was only active for Q4 of FY2015, several accomplishments were made. These include:
 - (a) Developed data collection instruments and consent forms and submitted IRB application.
 - (b) Drs. Sieglinde Snapp and Philip Grabowski met hosted Dr. Mark Musumba (Earth Institute, Columbia University) to develop workplan and to discuss SI indicators with a wide range of MSU faculty.
 - (c) Prepared for Mali visit to Africa RISING and Millennium Village Project sites.
 - (d) Developed a workplan and prioritized sites for case studies. This process was aided by the participation of some steering committee members through conference calls.
 - (e) Contributed to the development of potential SI indicators list.
- (5) Capacity Building - No capacity building activities were undertaken during the reporting period.
- (6) Lessons Learned - Development of SI indicators, matrix, and measurements is a complex and time consuming process. However the leaders of the project are close to developing the framework.
- (7) Publications and Presentations - No publications or presentations were completed during the reporting period.

VII. Associate Award Research Project Reports

There were no associate award research projects to report in FY2015.

VIII. Human and Institutional Capacity Development

A. Short-term training

Workshops that utilized SWOT analysis (Strengths, Weaknesses, Opportunities, Threats) to identify SI needs in target countries were conducted. While participants in the workshops actively engaged in the discussion, they also received instruction on how to conduct their own SWOT analyses. This training will assist their leadership efforts in the future. Lists of workshop participants will be utilized and submitted to TraiNet and the Feed the Future Monitoring System (FTFMS).

B. Long-term training

No long-term training place took place in Year I of the SIIL (FY2015).

C. Institutional Development

No specific institutional development activities took place in Year I of the SIIL (FY2015).

IX. Environmental Management and Mitigation Plan (EMPP)

No relevant environmental mitigation and monitoring activities were conducted in the reporting period, as minimal on-the-ground work took place in FY2015. However, our management entity did complete planning for the upcoming year’s creation and use of the EMMP.

In FY2016, the SIIL Environmental Mitigation and Monitoring Plan will be finalized after the research subawards are chosen. At that time it will be possible to assess what risks will be associated with all planned research. We have planned a session at the SIIL annual meeting (to take place in January 2016) to aid PIs in assessing potential environmental risks associated with their projects and developing plans for mitigation of those risks.

Following development of the EMMP, activities relevant to the plan will be assessed and documented using the SIIL Reporting Hub. Subawardees will use the Reporting Hub to submit information regarding the Environmental Mitigation and Monitoring Plan and project activities that fall under its jurisdiction. The structure of the Reporting Hub is such that it guides subawardees to comply with the EMMP requirements. An example is shown below.

Progress

8% Complete

← Previous Next →

Research Status Modules

- Background & Demographics
- Project Overview
- Project Researchers
- AOP Progress
- Publications & Presentations
- International Travel Plans
- EMMP**
- Data Catalog
- Project Photos

FTF Indicator Modules

- Policies - 4.5.1-24
- Public-Private Partnerships
- Short-term Training
- Long-term Training - 4.5.2-6
- Technology Transfer - 4.5.2-39

Started
Completed

Add Environmental Mitigation and Monitoring Plan ✕

The purpose of this module is to collect information regarding the Environmental Mitigation and Monitoring Plan for this project.

For a full description of activities, please reference the [EMMP Activities PDF](#). The [Initial Environmental Examination \(IEE\) PDF](#) is also a key document and can be referenced as needed.

Activity

- Human and institutional capacity development
 - Human and institutional capacity development
- Bio Control
 - Genetically engineered organisms
 - Field scouting and collection of biocontrol agents
 - Transfer of Trichogrammatidae between countries
 - Laboratory-based experiments of Trichogrammatidae parasitism and rearing optimization
 - Pilot scale release of Trichogrammatidae (experimental release of biocontrol agents)
 - Field release of Habracon hebetor to parasitize millet head miner larvae in farmers' fields
- Consumer Preference Studies
 - Consumer preference studies, including sensory studies
- Field Based Research (4 ha less / no pesticides / potential fertilizer use)
 - Conducting field-based research on research stations and on-farms not exceeding 4 ha in a single location. No pesticides used. Fertilizers may be used
- Field Based Research (4 ha less / potential pesticides & fertilizer use)
 - Conducting applied research on research stations not exceeding 4 ha in a single location and DOES involve use of pesticides and fertilizer

Choose Action

Country

Site Location

Please provide the specific town or research station name.

Date of Visit

If your visit lasted more than one day, enter the first day.

Observations



X. Open Data Management Plan

The SIIL is in the process of developing a data management plan for the project. The SIIL ME intends to develop a framework for data collection and sharing by December 2015, after the subawards are chosen. The data management plan will be further refined and finalized at the SIIL annual meeting in January 2016.

XI. Governance and Management Entity Information

A. Staffing of the Management Entity

- The SILL office space was renovated and established.
- The ME of SILL is fully staffed with an exception of Associate Director (identified, not yet hired).
- The EAB, consisting of six members, was identified and helped choose the lead institution for the ASMC and the portfolio of research subawards.

B. Networking

Networking with current and future collaborators during Year I of the project was critical for the SILL management entity, as it established a strong network of partners that will aid in implementation of the SILL's vision. The following meetings/conferences/workshops were attended:

- American Society of Agronomy Meeting (November 2014).
- Africa – RISING Meeting in Tanzania (November 2014).
- Cereals Systems Initiative for South Asia Networking Meeting in India and Bangladesh (February 2015).
- SI Indicators Meeting in California (February 2015).
- American Association for the Advancement of Science Annual Meeting (February 2015).
- Visits from Dr. Neville Clark (Innovation Lab for Small Scale Irrigation) and his team to Kansas State University and University of California Davis to identify opportunities for collaboration (December 2014; and April 2015).
- Visit from IBM staff to Kansas State University to identify opportunities for collaboration (March 2015).
- Visited Oklahoma State University to identify potential opportunities in Ethiopia (March 2015).
- Conducted stakeholder meeting to determine SWOT (strengths, weakness, opportunities and threats) in Cambodia in collaboration with Royal University of Agriculture; and University of Battambang (April 2015).
- Participated in the USAID – Ethiopia Mission Quarterly Meeting (April 2015).
- Participated in the Feed the Future Innovation Lab Council Meeting in Malawi (April 2015).
- Visited Dr. Alan Hansen at the University of Illinois at Urbana-Champaign to discuss plans for the Appropriate Scale Mechanization Consortium (August 2015)
- Visited Dr. Robert Hijmans at University of California Davis to plan collaborations (August 2015)
- Rwanda scoping study for CSA and SI (August 2015)
- Attended the Sorghum Improvement Conference for North America (September 2015)

XII. Issues

A. Establishment of West Africa Regional Coordinator

The SILL encountered some issues associated with the hiring of the West Africa Regional Coordinator. At the end of FY2015, there was no Regional Coordinator confirmed in the proposed location of Dakar, Senegal. Communication regarding the commitment to host a Regional Coordinator at the Institut Sénégalais de Recherches Agricoles (ISRA) was difficult. The ME continues to explore different institutional options for placement of the West Africa Regional Coordinator in Senegal or Burkina Faso.

B. Delay in review of SILL research subaward concept notes and proposals

It was originally intended that the SILL research subawards would be selected by the end of FY2015 and that activities would begin by October 2015. However, this timing was delayed due to an overwhelming response to the call for concept notes. Approximately 100 concept notes were received, and reviewers required additional time to review and provide feedback on all of the proposed projects. The SILL management entity also relied on USAID Mission feedback in each of the six focus countries in the decision-making process, which required additional time. Efforts have been taken to ensure that the contract development process will run smoothly once subawards have been selected in late October 2015 or early November 2015.

XIII. Future Directions

A. Selection of research subawards

By the end of November 2015, approximately six to seven \$1 million research subawards will be selected from the 25 submitted full proposals. A balanced portfolio of research will be achieved by selecting projects that span the six focus countries and work across all relevant sustainable intensification fields.

B. Pursue collaboration with the Feed the Future Innovation Lab for Livestock Systems

The four Innovation Labs at Kansas State University will host the leaders of the Feed the Future Innovation Lab for Livestock Systems (University of Florida) in October 2015. This will allow ample interaction and discussion between the SIIL and the Innovation Lab for Livestock Systems, promoting future collaboration.

Appendix A – List of awards given to U.S. universities

Title: Geospatial and Farming Systems Research Consortium

Awarded institution(s): University of California, Davis

Dates: September 16, 2014-September 15, 2019

Current year funding: \$1,000,000

Total funding: \$5,000,000

Title: Developing Indicators for Sustainable Intensification

Awarded institution(s): Columbia University

Dates: September 1, 2015-August 31, 2016

Current year funding: \$184,990

Total funding: \$184,990

Title: Developing Indicators for Sustainable Intensification

Awarded institution(s): Michigan State University (MSU)

Dates: July 1, 2015-June 30, 2016

Current year funding: \$140,938

Total funding: \$140,938