



FEED THE FUTURE

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

Semi-Annual Report: April 30, 2014

Year 1

Reporting Period

October 1, 2013 thru March 31, 2014

Feed the Future Innovation Lab for Small-Scale Irrigation

Cooperative Agreement
No. AID-OAA-A-13-00055

Due Date: April 30, 2014



I. Feed the Future Innovation Lab on Small-Scale Irrigation

The Feed the Future Innovation Lab on Small-Scale Irrigation (FTF-ILSSI) is a cooperative agreement funded by USAID to undertake research aimed to increase food production, improve nutrition, accelerate economic development and contribute to the protection of the environment. The project pursues these objectives through identifying, testing and demonstrating technological options in small-scale irrigation of food crops and irrigated fodder, using the Integrated Decision Support System (IDSS). The IDSS will allow scientists to analyze production, environmental, and economic consequences of these options, using short and long term training to develop the capacity to use the IDSS, and maintain a continual dialogue with stakeholders to foster sustained use of the IDSS for decision making.

As the lead institution, Borlaug Institute for International Agricultural/Texas A&M University System (BI/TAMUS) is responsible for leadership, management and administration of the overall cooperative agreement. Together under sub-agreement with BI/TAMUS, several partners conduct research and carry out the goals and objectives set forth. Partners in the FTF-ILSSI cooperative agreement include the International Water Management Institute (IWMI), the International Food Policy Research Institute (IFPRI), the International Livestock Research Institute (ILRI), North Carolina A&T State University (NCA&T) and Texas A&M AgriLife Research (TAMAR). This document outlines the activities completed during Quarters 1 and 2 of Year 1 under the cooperative agreement for research of the Innovation Lab for Small-Scale Irrigation (FTF-ILSSI).

This report is drawn from submissions from each of the partners showing research progress performed by activity for this reporting period. The report is generally organized under the agreement objectives in the work plan. The Appendix provides a list of the approved project goals and activities conducted in the first half of the project year.

II. Research Progress Summary

Year one of this five year agreement involves assessment of new and emerging small scale irrigation technologies from previous, related studies, engaging stakeholders for input on needs and priorities, planning and early initiation of research, and initiation of national and international training. Early emphasis is on work in Ethiopia followed by the initiation of activities in Ghana and Tanzania later in year 1.

A. Project Initiation

Component 0: Plan, coordinate, and organize multi-institutional activities

After award of the agreement in August, 2013, a planning workshop for partners was held in Addis Ababa in September 2013 to initiate the development of the annual workplan for year one, the program management plan and the annual budget. Substantial progress was made on defining the major elements of the program and the interactions among partners. The formal documents were submitted and approved by USAID in early November. A second major planning workshop was held in January 2014 to develop detailed plans for research and outreach in year one and beyond.

A review of recent and ongoing projects, including Ag Water Solutions provided input to a well-attended stakeholder conference for Ethiopia which provided initial recommendations on innovations to be introduced and partnerships with national universities and other institutions. It also provided guidance to the January planning workshop. Engagement with the FTF Africa RISING project and the CETA sponsored LIVES project were made to explore collaboration and use of common research sites.

Detailed plans for the remainder of year one were developed in January as were plans for the first annual meeting of FTF-ILSSI and training workshops. Co-leaders of FTF-ILSSI with partner representatives from IWMI met with stakeholders in Ghana and Tanzania to initiate program planning in these two countries. A stakeholder workshop was held in Ghana on April 15, 2014. A similar stakeholder meeting will be held in Tanzania in May or June 2014. Multiple meetings were held with USAID Mission staff in all three countries. Advice and assistance in identifying and making contacts with their key contractors was provided as well as insights into USAID regional and country priorities and areas of focus of FTF programs, including other innovation labs, in these locations. The activity manager for the agreement was an active participant in planning meetings and engagements with the Missions. Seminars to Washington's USAID staff were provided in early November 2013 and April 2014. These provided excellent feedback into opportunities for engagement of other innovation laboratories and related USAID activities.

A request for additional international travel and some adjustments to the year one program plan were submitted to USAID for approval. These changes reflect an initial under-estimation of the amount of travel required for effective engagement and sharpening of the objectives for engagement of NCA&T with other parts of FTF-ILSSI field studies and training.

Multiple consultations were held with USAID staff on organizing and structuring program monitoring indicators. At the end of the first half year, the FTF-ILSSI has been successfully launched, initial planning is well underway, engagement with stakeholders has been undertaken, and research has been initiated.

B. Research progress made during the reporting period

Component 1: Identify promising, context appropriate small scale irrigation interventions, management, and practices for poverty reduction and improved nutrition outcomes.

The foundation was established for the pilot studies to integrate methodologies and databases for potential small scale irrigation solutions and identify national partners. A review of previous research contributed to ensuring that lessons learned are incorporated into the design of this research and to assuring that plans for biophysical and social research generate adequate data for modelling candidate interventions using the IDSS. Consultation with expert stakeholders at national level in Ethiopia, Ghana, and Tanzania is guiding the selection and location of interventions that are demand-driven and relevant to national goals and interests. Final selection of innovations and locations of field studies are still being done based on follow-on regional consultations and a final round of stakeholder meetings in Ethiopia. Stakeholder engagement is at an earlier stage in the other two countries, but has been successfully launched with good interaction.

A staged initiation process was followed with Ethiopia as the focus of initial detailed planning in Addis Ababa in January, 2014. Subsequently, project co-leaders and representatives of IWMI traveled to Ghana and Tanzania April 6-16, 2014 and met with the USAID Missions in those countries, where advice on related mission project and key contacts were obtained. In both Ghana and Tanzania, multiple contacts were made with government officials and leadership for AID supported projects, including both Mission directed and FTF Innovation Labs. A stakeholder consultation on potential candidate interventions was conducted in Ethiopia on January 21, 2014 and a report from the meeting was compiled and shared on the project website at <http://ilssi.tamu.edu/>. A Ghana stakeholder consultation workshop took place on April 15, 2014, in Tamale, Ghana. National university and regional officials participated to initiate the process of defining interventions and possible research sites. In both countries, a second engagement with the Missions was held to report results of our meetings and to garner further advice on the way forward for FTF-ILSSI.

Results included potential engagements with USAID sponsored activities where it would be possible to employ the analytic capacity of ILSSI to assess the impact of their projects, while broadening the ability to evaluate small scale irrigation efforts relevant to our cooperative agreement. Several opportunities for collaboration with irrigation-related USAID sponsored projects were identified and will be used to assess impacts of interventions on livelihoods of both small and large farmers. The concept of nucleus farms with subsidiary smallholder networks in Ghana and Tanzania was particularly interesting in terms of leveraging our investment to engage larger audiences.

Component 2: Evaluating impacts, trade-offs, and synergies of small-scale Irrigation technologies and practices.

In addition to the review and ratification of the proposed technologies, the Ethiopian stakeholder consultation on January 21, 2014 ensured that the overall goals and activities of the program are aligned with the national government policies and produce ownership by stakeholders.

Candidate technologies identified for Ethiopia include (1) low-cost water lifting devices, (2) watershed management, (3) in-situ water harvesting, (4) irrigated fodder and (5) (possibly) small-scale irrigation of vegetable crops during the dry season. The proposed technologies include planting fodder on allocated plots, fodder integration through intercropping and alley cropping, establishment of community and private nurseries dedicated to fodder. Plans were made to address the cross-cutting initiative on capacity building and creation of awareness by local extension workers.

Component 3: Identifying key constraints and opportunities to improve access to small-scale irrigation technologies.

IFPRI, IWMI, and ILRI are completing the design of the survey methodology that will tie together the biophysical research sites and related results of the broader household surveys to be done by IFPRI. IFPRI has produced a near final version of its household survey instrument which is undergoing final vetting. IFPRI and the TAMAR have collaborated on the design of the IFPRI survey instrument so that it will also provide data for the FARMSIM model in assessment of economic consequences of candidate interventions.

Component 4: Capacity Development and Stakeholder Engagement and Dialogue

As noted above, multiple and iterative stakeholder meetings have been held in Ethiopia to ensure demand driven selection of interventions to be studied and to plan for collaboration and feed-back from national universities and other partners. Similar engagements have been initiated in Ghana and Tanzania. Iterative engagement with USAID Missions in all three countries is providing linkages to other relevant programs and advice on country and regional priorities for FTF strategies and programs.

An External Advisory Committee has been formed to enhance coupling with decision makers in the three countries involved in the program. The first annual meeting of the FTF-ILSSI will be held the week of June 16, 2014 in Addis Ababa. The annual meeting will be preceded the week before with a training workshop on the IDSS. Participation is anticipated by 50 students from local universities, staff of international centers, and representatives of key government ministries.

Planning for field research and demonstrations was conducted in the September and January workshops and was completed in April 2014. A pilot study is underway to use results from earlier field studies and other closely related FTF interventions to employ the IDSS in assessing consequences of interventions. This will identify any issues or procedural problems to be worked out for future studies. The study will also be used to provide the scenario for the June 2014 IDSS

training workshop. ILRI has initiated its first field study on irrigation for fodder production at one of its Africa RISING sites – scheduled to coincide with annual planting dates.

Bilateral meetings between IFPRI and TAMAR held in February and April developed important interfaces between the models and databases of these two institutions that will be used to estimate up and out scaling opportunities and applications.

In summary, progress on the FTF-ILSSI is approximately on schedule at the end of the first half year and good progress is being made. Review of relevant candidate interventions and an iterative engagement with stakeholders has identified candidate technologies which will be finalized for Ethiopia when the annual meeting is held in June 2014. As planned, the start-up activities in Ghana and Tanzania lag those in Ethiopia by a few months. However, stakeholder engagement in both these countries has been undertaken and a stakeholder conference has been held in Ghana.

C. Issues or concerns encountered during the reporting period

Travel costs, especially for the lead agency, were substantially under-budgeted for the first year. A proposal to increase the number of trips has been submitted to USAID. Also, the cost and travel related to the establishment of the External Advisory Committee was not included in the first year budget and a proposal to meet this need has been submitted. These changes are all within the approved budget.

The lead institution is closely monitoring burn rate by TAMAR and its partners. The late start of the Laboratory is causing some of the expenditures to fall behind initial projections. At the same time, additional costs are emerging for activities in year one. There may be need to have some carryover of year one funds into year two. The lead institution plans to assess the overall status of needs and expenditures in early May and propose adjustments as needed to ensure timely use of funds.

As expected, the experience in planning and initiating the FTF-ILSSI in year one is revealing the opportunity and need to make substantial changes in the program management plan and to reflect these changes in the year two work plan and budget. The general strategy will remain intact but the implementation plans will reflect experience in the first year.

Effective follow-up on identification and development of plans for engagement of FTF and other relevant USAID and non-USAID programs will be needed to leverage and extend the scope of the FTF-ILSSI field studies and regional analyses. Excellent candidates for such collaboration have been identified by initial stakeholder engagements. Particular attention will need to be given to engaging FTF innovation laboratories dealing with human nutrition. This will include the need to explicitly explore opportunities for buy in from other programs to support analyses using the modeling systems of ILSSI.

Earlier and more direct engagement between the lead institution (Texas A&M) and national universities is needed in addition to linkages done via the CGIAR partners. Immediate progress will be made in June 2014 via training students from national universities in the use of the IDSS and thereby generating interest and use of the system by these students and their faculty. Involvement of national university partners in planning the activities of the laboratory will be emphasized in the future.

TAMAR had no direct involvement in the initial stakeholder meetings in Ethiopia and Ghana.. With guidance from the sponsor, the TAMAR will be involved in such engagements in the future.

More explicit planning will be undertaken to address the water safety – recognizing that water provided for irrigation will often be used for human consumption. Also, emphasis will be increased

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on estimating environmental consequences of small scale irrigation interventions. Coupling with the FTF Innovation Laboratory on Nutrition will be one way of addressing this issue

In the second half of year one, specific plans will be made to meet the requirements of the agreement in areas dealing with such issues as environmental impact and human subject use.

III. Future Work

The workshop and meetings held in January, February and April of 2014 resulted in developing milestones toward establishing pilot interventions, field locations and bringing together key stakeholders and potential project partners. An overview of progress and accomplishments on the FTF-ILSSI cooperative agreement could be developed as a potential news article. Specific activities for future work for each institution are included in the table below following by an appendix of the activities planning matrix for progress made to date:

IWMI

1. Finalize plans and establish pilot interventions in Ethiopia, i.e. finalize sites, considering FTF, AR, NBDC, LIVES
2. Stakeholder engagement in Ethiopia
 - Finalize list of invitees to launch in June
 - Feedback to partners and stakeholders on sites and interventions
3. Models and training
 - On line workshop is planned to compare and assess effectiveness of model learning event and develop lessons for later trainings and other countries
4. Establish pilot interventions in Ghana
 - Circulate draft discussion papers on promising candidate interventions
 - Follow up the initial Stakeholder Consultation Workshop
 - Circulate report from Stakeholder Consultation Workshop and discussion paper for further feedback on interventions
 - Begin site characterization
 - Continue discussions on sub-agreements
5. Plans for pilot interventions in Tanzania
 - Complete desktop studies
 - Convene Stakeholder Consultation Workshops
 - Circulate report from Stakeholder Consultation Workshop and discussion paper for further feedback on interventions

- Begin site characterization
 - Continue discussions on sub-agreements
6. Explore opportunities for inter-country learning e.g. Nutrition tool from FTF in Tanzania and how could be modified for use in Ethiopia
 7. Engage post-doctoral fellow in April (short-listed, interviews early April).

IFPRI

1. Finalizing the survey instruments and distributing them to the larger FTF-ILSSI research group to get additional comments.
2. Submitting the survey instrument to IFPRI's Institutional Review Board
3. Pre-testing the survey instrument. Discussions with the Africa RISING team to pretest the ILSSI survey by the time Africa RISING goes out for data collection in late April or May, 2014.
4. Finalizing site-selection in close collaboration with IWMI and ILRI.
5. Run SPAM model for Ethiopia and analyze the cropping patterns and farming system
6. Work with TAMU modelling team in integrating SPAM results into their IDSS modelling framework, using Ethiopia as an example.

ILRI

1. Finalizing the site selection and contribute to initial site characterization
2. From field visits and farmer consultation ILRI personnel learned that there is a farm cooperative

that can provide sheep to farmers for fattening purpose. ILRI will play a linking role here.

3. ILRI staff will closely follow-up on the performance of the fodder, the animals and the target farms.

NCA&T

1. Workplans and budget have been modified to reflect a more specific engagement with national collaborators in SSA and CG centers

TAMAR

1. Set up and conduct pilot study/scenario with APEX, SWAT, and FARMSIM exploring irrigated agricultural production for Jeldu Kebele to further gain experience with agricultural systems in Ethiopia and to as a part of model training to be conducted in June, 2014. Development of the pilot model will also inform those decisions being made by the IWMI team and other partners concerning the selection of sites and irrigation interventions that will ultimately be examined. Results will be used to develop training materials for SWAT, APEX, and FARMSIM training in June.
2. Continue to examine existing FTF and Africa RISING sites as potential modeling sites for APEX, SWAT, and FARMSIM.
3. Connect graduate students to entire modeling team.
4. Planning is being done to conduct trial simulations for the Fogera Woreda using data collected as part of the Nile Basin Challenge.

IV. Appendix A: Approved Workplan Schedule (current progress)

Project Planning Matrix for All Partners - FTF Innovation Lab on Small Scale Irrigation in Ethiopia, Tanzania and Ghana		
Project Goal: To increase food production, improve nutrition, protect the environment and accelerate economic development through improved access to small-scale irrigation technologies		
Objectives, Activities and sub-activities	Completion Dates	Progress to Date
Component 0: Plan, coordinate, and organize multi-institutional activities		
Activity 0.1.1. Develop a general (overarching) plan for studies: Annual Work Plan and Performance Management Plan.	Dec-2013	Annual Work Plan and Performance Management Plan: Revisions of these documents reflecting guidance from USAID were submitted to USAID on October 12, 2013. The plans were approved by USAID November 6, 2013.
Activity 0.1.2. Combined partner and stakeholder meetings in Ethiopia.	Sep-2013	Meetings held September 2013.
Activity 0.1.2. Combined partner and stakeholder meetings in Ethiopia.	Jan-2014	Meetings held January 2014.
Activity 0.1.3. Establish external advisory committee.	Feb-2014	Advisory committee appointed February 2014.
Activity 0.1.5. Develop agreements with national partners, sub-contractors.	Mar-2014	Contracts with national partners, consultants. 6 Agreements developed, April 6-16, 2014.
Activity 0.1.6. Develop project web site.	Feb-2014	Project web site initiated February 2014.
Activity 0.2.1. Submit semi-annual reports.	Apr-2014	Semi-annual reports submitted April 30, 2014.
Component 1: Identify promising, context appropriate small scale irrigation interventions, management, and practices for poverty reduction and improved nutrition outcomes.		
Activity 1.1.1. Review candidate interventions from previous and on-going projects for use of SSI in food and forage production: desk review, expert consultation.	Feb-2014	Report for each country: 3 interventions, management, and practices per country. 3 per country (IWMI); 3 per country (ILRI) Process begun in Ghana and Tanzania; Ethiopia will begin soon.
1.3.1. Characterization of sites; site specific interventions planning and analysis.	Feb-2014	Maps and accompanying report on potential areas for 3 countries 3 maps and reports--Process begun in Ghana and Tanzania.
1.3.2. Develop targeting and monitoring framework for assessing likelihood of success of intensive irrigated vegetable and forage production in specific locations: availability of land, labor, irrigation source, market for products.	Feb-2014	Draft targeting and monitoring framework developed. Tool ready for application.
1.3.3. Use targeting framework to select pilot sites for preliminary assessment of intervention options.	Apr-2014	Identified sites for Ghana and Tanzania.
Component 2: Evaluating impacts, trade-offs, and synergies of small-scale Irrigation technologies and practices.		
Activity 2.1.1. Collation of data (previous and current project).	Jan-2014	Sets of existing data, Overview of existing data.
Activity 2.1.2. Identify gaps for each intervention.	Jan-2014	Gap report to TAMU.
Activity 2.4.4. Establish pilot livestock feed interventions in Africa RISING sites.	Apr-2014	Summary report characterizing sites, methodologies used to select the pilot sites and kind and objectives of the pilot interventions. 1 report by Jul. 2014, additional 2 reports by Jul. 2015.
Component 3: Identifying key constraints and opportunities to improve access to small-scale irrigation technologies.		
Activity 3.1.3. Use the IDSS to identify key biophysical (climatic, topographic, soil, and environmental sustainability) and economic constraints and opportunities to increase the use of small-scale irrigation.	Sep-2018	Identified biophysical and economic constraints and opportunities for 6 small scale irrigation technologies.
Component 4: Capacity Development and Stakeholder Engagement and Dialogue		
Activity 4.1.1. Develop comprehensive training plan.	Mar-2014	Plan developed.
4.2.2. Review and revise stakeholder maps.	Feb-2014	Stakeholder maps. Understanding of relevant stakeholders and institutional context.
4.2.3. Develop (and revise) engagement plan for individual interventions at different levels.	Mar-2014	Improved and coordinated targeting of engagement.
4.2.4. Stakeholder consultation: validate demand for candidate interventions; input on alignment with national plans and programs, opportunities and constraints.	Jan-2014	Workshop reports; Minutes of stakeholder meetings. Agreement on identified candidate interventions and pilotings.