

Education and Research in Agriculture (ERA)

Q1 2014 – Quarterly Report (OCT-DEC)

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Acronyms

AETR: Agricultural Education, Training and Research Institutions
ANCAR: National Agency for Agricultural and Rural Council
AKIS: Agricultural Knowledge and Information Systems
BFAR: Bureau de la Formation Agricole et Rurale
CAGE: Commercial and Government Entity
CCR: Central Contractor Registration
CERAAS: Centre d'études régionales pour l'amélioration de l'adaptation à la sécheresse
CFPH: Centre de Formation Professionnelle en Horticulture
CIRIZ: Comité Interprofessionnel du Riz
CNCR: Conseil National de Concertation et de Coopération des Ruraux
CNFTEIA: Centre National de Formation des Techniciens d'Elevage et des Industries Animales
CNFTEFCPN: Centre National de Formation des Techniciens des Eaux et Forêts, Chasse et des Parcs Nationaux
DDL: Distance and Distributed Learning
DRDR: Direction Régionale du Développement Rural
ENSA: Ecole Nationale Supérieure d'Agriculture
ERA: Education and Research in Agriculture
ESEA: Ecole Supérieure d'Economie Appliquée
FEPRODES: Fédération des Femmes Productrices de la Vallée du Fleuve Sénégal
FNRAA: Fonds National de Recherches Agricole et Agro-Alimentaires
FOG: Fixed obligation grant
FTF: "Feed the Future" – The Presidential Food Security Initiative
GDP: Gross Domestic Product
GIE: Groupements d'Intérêts Économique - Economic Interest Groups
GIS: Geographic Information Systems
GOANA: Grande Offensive Agricole Pour la Nourriture et l'Abondance
GRAAS: Groupe De Réflexion Sur L'Agriculture Au Sénégal
ICT: Information and communications technology
ISFAR: Institut Supérieur de Formation Agricole et Rurale
ISRA: Institut Sénégalais pour la Recherche Agricole
ITA: Institut de Technologie Alimentaire
LTAEB: Lycée Technique Agricole Emile Badiane
MOU: Memorandum of Understanding
OIRED: Office of International Research, Education, and Development
PCE: Projet Croissance Economique
PMP: Performance Monitoring Plan
PMU: Project Management Unit
REVA: Return to Agriculture Program
SEP: Strategic Engagement Priority
SNRASP: Agro-Sylvo-Pastoral Research of Senegal
TOR: Terms of Reference
UASD: Université Asane Seck de Ziguinchor (formerly Université de Ziguinchor)
UCAD: Université Cheikh Anta Diop de Dakar
UConn: University of Connecticut
UGB: Université Gaston Berger
UT: Université de Thiès
VT: Virginia Tech

EXECUTIVE SUMMARY

The USAID/ERA project is focused on accomplishing its capacity-building goals that support the objectives of poverty and hunger reduction as well as inclusive economic growth in Senegal as part of the Feed the Future program. This report presents project activities and results achieved over the first quarter of fiscal year 2014 (October 1 to December 31, 2013).

Each of the activities described below contributes to goal of the project to build human and institutional capacity in agricultural teaching, research, training and outreach in order to serve the needs of the Senegalese public and private sectors. In doing so, USAID/ERA will develop strong and sustainable linkages between universities, applied research and extension services, and the private sector. In this way, USAID/ERA contributes to USAID/Senegal's Development Objective 1 (Increased inclusive economic growth) and Feed the Future (FtF) Goal (Sustainably reduce poverty and hunger) through achievement of Results for Objective 1 (Inclusive agricultural sector growth), Objective 2 (Increased trade), and Objective 3 (improved management of natural resources). For each of these objectives the Intermediate Result (IR 1.6, 2.5, and 3.4) targeted by USAID/ERA is "Increased institutional and human resource capacities".

USAID/ERA is structured into three components which organize its activities in achieving the project goal and objectives: (1) Strengthening agricultural education and training; (2) Strengthening applied research and outreach; and (3) Project management and policy support. The following highlights describe the primary achievements for this quarter.

Summary of project highlights for the first quarter, FY 2014

[The quarter was generally devoted to the review of strategic documents regarding USAID/ERA FY14 Work Plan and FY13 Annual Report and PMP.

The project capitalized on the opportunity presented by the end of the Fiscal Year, to reorient its activities in order to highlight the impacts.]

Highlights of Results and Achievements for FY 2013

Component 1 – Strengthening Agricultural Education and Training

Summary of actions, activities and accomplishments

Institutional capacity building: Self-assessments

To focus AETRs on quality assurance at the institutional level USAID/ERA has facilitated institutional self-assessments. Since FY2011, these studies have been empowering faculty and administrators to review and plan for curricular and management improvements, demonstrate accountability, and support the meaningful inclusion of external stakeholders in curriculum and research activities of the institution.

- The *Centre National de Formation des Techniciens des Eaux et Forêts, Chasse et des Parcs Nationaux* (CNFTEFCPN) completed their self-assessment report and presented it to a workshop of stakeholders from the *Ministère de l'Environnement et Développement Durable* (MEDD), the *Ministère de la Formation Professionnelle, de l'Apprentissage, et de l'Artisanat* (MFPAA), local development officials, *Association des Parents d'Elèves*, NGO, development project, and private sector representatives.
- The *Lycée Technique Agricole Emile Badiane* (LTAEB) completed their self-assessment report and presented it to a workshop of stakeholders from the *Ministère de la Formation Professionnelle, de l'Apprentissage, et de l'Artisanat* (MFPAA), local development officials, the Mayor of Bignona, NGO and private sector representatives.
- In reviewing the findings of the CNFTEFCPN self-assessment report, representatives of the two ministries agreed to increase coordination of their support roles and to particularly address issues concerning the recruitment of qualified instructors and provision of pedagogical and curriculum support.
- Discussions during the CNFTEFCPN and LTAEB workshops addressed the problem of graduates transferring to the next educational level at other AETR institutions, indicating a divergence between LMD policy at the national level and how it is experienced by graduating students.
- Initiated the self-assessment process at the *Université Gaston Berger* (UGB) and the *Centre de Formation Professionnelles en Horticulture* (CFPH) institutions. The process was introduced to each Technical Working Group (TWG) who agreed to establish a committee to lead their self-studies.

Capacity Building - Curriculum and Pedagogy

To strengthen AETR pedagogic capacities, the USAID/ERA project began updating syllabi, pedagogic practices, and curriculum. Since FY2011, workshops and mentoring activities have assisted AETR faculty to better present course materials and objectives and begin the transition to a more student-oriented style of instruction. The goal is to align agricultural course contents and pedagogic practices with the needs of the private sector.

- A workshop was held to help ENSA professors to continue implementing syllabi in their classes, encourage student feedback, and receive more training in teaching strategies and techniques. Thirteen ENSA professors/researchers shared their experiences with implementing syllabi in their courses.

Capacity Building - USAID/ERA Scholarship Program

To enhance the knowledge, skills and attitudes of agricultural professionals, USAID/ERA has established a Young Leaders Development program for the education and training of 155 students. In April 2013, twenty-one candidates were designated to study at USAID/ERA partner institutions in the US and 134 candidates at USAID/ERA partner institutions in Senegal (ten of these in a special value-chain studies program). These students will provide the Senegalese agricultural sector with a new generation of leaders.

- 116 local young scholars (51 percent women) are currently enrolled in 11 Senegalese partner institutions.
- 35 local young scholars (60 percent women) have participated in internship programs, over three-quarters of them in the private sector.
- 2 students have been accepted into VT's Department of Crop, Soils and Environmental Sciences; 3 students have been accepted into Tuskegee University's Agricultural Sciences program; and 3 have been accepted into the University of Connecticut's Department of Agricultural and Resource Economics.
- 9 students are preparing for the GRE and TOEFL exams with English language training at Virginia Tech Language and Culture Institute (VTLCI).

E-Learning - On-line Courses

In order to broaden educational access, USAID/ERA has promoted the development of distance education to enhance agricultural education and research opportunities for students, practitioners, agro-entrepreneurs, and farmers. This promotion has included training at Virginia Tech and at the International E-Learning Conference in Namibia and the necessary equipment provided by USAID/ERA.

- Established the first agricultural education courses offered on-line in Senegal by the University of Thies.

Constraints encountered and unresolved issues

- The completion of the self-assessment for the Agroforestry Department at the Université Assane Seck de Ziguinchor has not been completed because the 3 permanent faculty are insufficient to conduct the work and maintain routine classroom activities. They are totally dependent on part-time faculty (*vacataires*).
- The habit of sharing syllabi with students and implementing them during the semester is still a challenge for many AETR instructors. Continued follow-up and mentoring is necessary to bring faculty around to using syllabi on a routine basis. It also should be noted that not all courses in the targeted institutions have been the subject of syllabus review and revision. This is particularly so for those courses taught by part-time faculty.

- Building sufficient capacity in English to function effectively in our US universities (achieving passing scores on the TOEFL and the GRE exams) is challenging for our scholars and will take longer than we had originally planned.

Activities planned for the next quarter

- Draft self-assessment reports will be prepared at UGB and CFPH.
- Draft a synthesis of institutional self-assessment reports with policy implications.
- Develop a partnership with the *Agence Nationale d'Assurance de la Qualité* (ANAQ) to reinforce self-assessment activities.
- In spring 2014 US-based scholars will be invested in their programs and be fully committed to their graduate coursework.
- Research activities for the scholars will be identified.
- Three additional scholars will arrive in January to begin new US-based English language training at VTLCI in preparation for their own graduate studies.
- Conduct a syllabus workshop focused on seed production technologies

Component 2 – Strengthening Applied Research and Outreach

Summary of Actions, Activities and Accomplishments

USAID/ERA Collaborative Research and Outreach Program

The overall goal of USAID/ERA research is to create innovative solutions for local food security by empowering local partners to design, conduct, and disseminate research on relevant technologies and management practices. The quickest path to the technological cutting edge of sustainable agricultural intensification is for Senegalese AETR institutions to collaborate with local farmers and the private sector as well as developing collaborative relationships with scientists at U.S. universities.

Five Fixed Obligation Grant (FOG) Projects

Intensification and Sustainable Management of Millet Production in the areas of Thiès, Louga and Nioro: Improvement, Dissemination, and Strengthening of Elite Varieties Value Chain

- Molecular characterization of millet germplasm (using molecular markers): Two steps have been performed leading to improved response of pearl millet varieties (more than 250 accessions tested) for drought tolerance/sensitivity to provide farmers with a greater range of choices in adapting to climate change.
- Farmers' millet seed management practices surveyed in rural communities of Nguene Gaye Sarr and Kab (Louga) to determine the parameters (variety, origin, and cost) for a community seed management program, including ethnobotanical aspects and role of millet in the system of production.
- Established contracts for certified seed production between ANCAR and farmer organizations and validated 6 certified seed production plots of 1 hectare each (6 ha. in total).
- MOU signed between ENSA and ANCAR to train the ANCAR agents to deliver seed production training to local farmers (training of trainers-TOT).
- MOU signed between ITA and ANCAR to train the ANCAR agents to deliver training to private sector on millet processing.
- MOU signed between ENSA and *Femmes transformatrices de Guediawaye-Fouty Services* to conduct millet processing of harvested surpluses.
- Developed 4 monitoring forms and tracked progress of production at the seed plots. This monitoring system was developed by ANCAR agents and involves 2 follow-up visits per week and supervision by project staff each month during the rainy season.
- Organized a program of community seed multiplication for elite varieties. Contracts between ANCAR and 30 farmers were established for seed multiplication of a 1 hectare each (30 ha. in total). Seed producers have become familiar with the new varieties and have learned how to produce high seed quality with yields varying between 2 and 3 tons per hectare (3-4 times normal production levels).

Production and Processing of Sweet Corn in Senegal: Sterilized Canned Corn Manufacturing

- Cultivars are being selected for testing on-station to increase production for the domestic market and reduce imports.

Sustainable Improvement of Cereal Productivity in Salty Environment

- Diagnosis of the socioeconomic and biophysical baseline situation of saline environments to identify the conditions under which farmers can expand their land resources for increased production. Particular emphasis has been placed on soil analyses and an inventory of existing salt resistant species.
- Installation and biological fixation with grass species (e.g., *melaleuca leucadendron*) of levee networks experimental design at Fadial and Ndoff (in Thiès and Fatick regions). More than 75 women were involved in the establishment of the experimental design at Fadial.
- Three new millet varieties were tested for their adaptation to salty environments (at Ndoff) with 18 young men and 32 women involved in establishing the trial.

Improving Rain-fed Rice Productivity in Casamance

- Field testing of improved varieties for the adaptation to local conditions in the farmer's fields in Badiatte, Bassaf, Karthiack, and Bodé, and in Djibélor and Séfa stations for the different toposequences: (*plateau, nappe, bas-fond, mangrove*). The new varieties are from ISRA (10), AfricaRice (14), and Brazil (10).
- Demonstrated improved varieties and production techniques for rice in the farmer's fields (at the same sites as above) and in Djibélor and Séfa stations. Seventy-six farmers across the four villages participated in the implementation of the research trials to learn about these new varieties and production techniques.
- Determined farmer-preferred varieties through participatory varietal selection techniques at Djibélor and Séfa stations for each toposequence.
- Produced certified seed in plots on-station and in farmer's fields adapted to each toposequence.
- Conducted survey of the factors limiting the adoption of improved technologies in rain-fed rice in Low and Middle Casamance. The questionnaire was elaborated and applied to farmers, producers and other stakeholders in two villages: Thionk Essyl and Kabiline.
- Survey conducted on agricultural input supply systems and their institutional environment for upland rice in the region. Farmers and other stakeholders were interviewed.
- ISRA researchers trained ANCAR agents and lead farmers for a training of trainers (TOT) program on rice production and seed conservation, plant protection, fertilization and good agricultural practices.

Promoting local rice in the valley and delta of the Senegal River

- This project will begin during the growing season this coming quarter.

Technical follow-up of FOG Projects

- Evaluated the revised FOG research plans and developed administrative plans for disbursing research project funds, including an explanation how much can be released to each FOG sub awardee at the achievement of each FOG milestone.

Additional Collaborative Research and Outreach Projects

ITA – PURDUE AWARD: Development and assessment of fortified instant cereal – based products for Senegalese market

- To develop and assess an instant cereal product suitable for the Senegalese market, a Masters student at Purdue has begun working on processing an instant cereal flour.
- ITA is just received the first tranche of its budget.

Enhance millet production and quality through sound practices based on resource – conserving technologies

- Tested three conservation agriculture (CA) practices (cover crop, rotations/association, and minimum tillage) at ENSA and ISFAR experimental sites.
- Evaluated mungbean (introduced) and cowpea (local) based on their ability to provide sufficient ground cover (as a cover crop), additional nitrogen to the primary crop, and an early season food crop.

Nutrition, Community Resilience and Technical Support for Farmers

- Assessed the impact of USAID/ERA’s previous grassland training and feed conservation (as silage) work.
- Held a workshop on silage storage technologies with farmers and community members.
- ENSA and VT demonstrated the effect of various bean varieties (including mungbean) to provide ground cover for soil and water conservation.
- Conducted a focus group activity with farmers to learn about constraints to agricultural productivity, millet seeding, and silage production and processing for storage.
- Identified priorities regarding the design of prototypes for food preservation through a baseline technical assessment.
- Developed a training and implementation plan for the introduction and use of the mechanized technologies (e.g., seeders, choppers, dryers).

Constraints encountered and unresolved issues

- The primary challenge in launching the research program has been setting up the administrative and contracting apparatus to disburse funds to the researchers at their home institutions. This has delayed the start of some of the projects.

Activities planned for the next quarter

- Link young scholar academic research to the collaborative research programs.
- Enhance ERA research collaboration with a workshop and regional meetings of US and Senegalese PIs
- Provide comprehensive training and support to FNRAA for the purpose of technical and budgetary monitoring of the FOG grants.
- Offer FNRAA access to training opportunities being provided to AETR partner institutions to help the organization gain capacity to manage USG-funded grants in support of USAID/Forward.
- FNRAA will provide: (1) a FOG accountant; (2) proposal reviews verified and approved for the five FOG projects; (3) an approved supervision schedule; (4) a plan for the research open houses and producer's field days; (5) mission reports for each M&E trip; and (6) technical monitoring and scientific evaluation reports.
- Allocation of the second round of funding for the FOG research grants.
- Development of molecular tools at the ISRA Centre d'études régionales pour l'amélioration de l'adaptation à la sécheresse (CERAAS) to allow millet breeders to more quickly incorporate drought tolerance into varieties adapted to Senegal.
- Monitoring and evaluation follow-ups on progress of research projects.
- Hold an USAID/ERA research workshop to bring together PI's research projects, private sector stakeholders, local and U.S. scholars and their professors to discuss the research programs, the needs of private sector, potential internships and conditions for insertion of the scholars in the research programs, etc.
- Organize a seed value chain workshop to bring together producers, seed operators, researchers, and consulting and training organizations around seed value chain issues (farmers' seeds and those obtained from research). The workshop will include forums to discuss seed management issues and collaboration among the many stakeholders. This activity will be organized under the auspices of GRAAS collaboration.
- Three prototype processing technologies (solar driven mango dehydrator; millet and food legume seeder; and a grass chopper and compressor for silage) will be tested and evaluated by the farmers and other community members. This information will be used to help the design team complete a final prototype.
- Scale up activities of the *Femmes Transformatives*
- Scale up and reach out to more communities and involve additional villages in grassland conservation for use during the extended dry season in preparation for global climate change.
- Follow-up on AGRI-COM activities.
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Component 3: Strengthening Management and Policy Support

Summary of actions, activities, and accomplishments

USAID/ERA steering committee meeting

- M. Oumar SOCK, Director of Higher Education, presided over the fourth meeting of the Technical Steering Committee of the USAID/ERA project at ISRA conference room on 4 December 2013. This meeting offered the opportunity for project partners to share various achievements and lessons learned within the institutions of education and research in agriculture and to prepare a roadmap for the coming years.

USAID/ERA Periodic Meetings with its partners

- Strengthened collaboration with AETR partners through a series of USAID/ERA PMU meetings with its AETR partners: UCAD, ISRA, ITA, CFPH, UASZ, UGB, CNFTEIA, LTAEB, CNFTEFCPN, ENSA, and ISFAR. USAID/ERA activities with each institution were reviewed, difficulties identified, and new areas of collaboration discussed to reorient implementation and to highlight project impacts.

Constraints encountered and unresolved issues

Building the routines and practices for increased collaboration between private sector stakeholders, ministry officials and AETR administration and faculty takes considerable time and effort. Each actor is driven by their institutions priorities and demands on his/her time. Nevertheless, USAID/ERA has helped build the willingness to move forward. Now is the time to do so.

Activities planned for the next reporting period

- AKIS formalization in the GRAAS
- Establishment of relations with ANAQ
- Student interns placed in private sector enterprises
- Workshops AETR workshops with private sector

Operations and Administration

Summary of Actions, Activities, and Accomplishments

Constraints encountered and unresolved issues

Activities planned for the next quarter

Communications and Media Outreach

Summary of Actions, Activities, and Accomplishments

Constraints encountered and unresolved issues

Activities planned for the next quarter

Monitoring and Evaluation

Summary of Actions, Activities, and Accomplishments

Constraints encountered and unresolved issues

Activities planned for the next quarter

Annex: Performance Indicator Tables