Final Report

Trilateral Partnership for Food Security

Egerton University,

Punjab Agricultural University

and

April, 2012 – December, 2014

On behalf of

Ohio State University Management Entity

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Egerton University/Punjab Agricultural University/Ohio State University
Trilateral Partnership for Food Security

Introduction

The overarching rationale for the program was that food security and poverty persist as major challenges for the Government of Kenya (GoK). It recognized that Kenya's food security and its ability to facilitate income generation require a transformation of its agricultural sector with special attention being given to the production of highly productive agricultural commodity value chains and the creation of support for competitive, commercial enterprises. To this end, the GoK had already signed a CAADP Compact and embraced USAID's Feed the Future (FtF) initiative. The Kenyan Vision 2030 envisages an economic growth rate of 10% per year and a 7% growth in its agricultural sector. It identified agriculture as a strategic key driver for delivering the envisaged economic growth through its transformation into an innovative, commercially-oriented, competitive and modern sector based on new knowledge and new ways of doing business in agriculture and food systems.

Objectives

The overall objective of the program was to increase Egerton University's (EGU) capacity to contribute to Kenya's economic growth, particularly through the agricultural sector. This would be accomplished through strengthening the training and research capacity of the EGU Faculty of Agriculture (EGU) by building a three-way partnership among EGU, Ohio State University (OSU) and Punjab Agricultural University (PAU). OSU's primary role was to facilitate the development of new linkages between the other two partners utilizing its past linkages with both institutions. The expected outcome of these activities was to be an effective and sustainable three-way partnership that would strengthen EGU's capacity to address emerging challenges in the food and agricultural sector.

Several general program objectives were initially identified based on OSU interactions with EGU and a review of existing documentation provided by EGU as the initial project proposal was formulated, namely,

- Improved linkages with the private sector in order to increase the relevance of teaching, research and outreach functions of EGU and the productivity of this sector.

- Improved teaching/learning program in order to increase the employability of graduates and their ability to undertake lifelong learning.

- Improved research to address smallholder farmers and outreach to them and their families in order to increase their productivity and incomes derived from agriculture.

These objectives were further refined as part of the program, specifically at a workshop designed to identify performance gaps at EGU. An outcome of this workshop was the identification of a number of proposed program objectives and activities to be undertaken to achieve them.[1]

Program Activities Undertaken

In this section we review the programmatic activities undertaken to achieve our program objectives. It provides a progressive review of how partnership activities were organized to allow our program to achieve its objectives.

Travel to India – Initial Meeting of Representatives from Three Participating Institutions

Once the initial cooperative agreement was signed, arrangements were made for a visit to India. Visitors were Alex Kahi, Dean and PI for EGU, Mark Erbaugh, Director, Int'l Programs in Agriculture and PI for OSU, and Dave Hansen, Program Coordinator, OSU. This travel was arranged for Dean Kahi to meet counterparts at PAU and to learn about its programs; for PAU officials, including Vice Chancellor B.S. Dhillon and Director of Research Satbir S. Gosal, to meet Dean Kahi and to learn about the program; and for the travel team to meet with officials from the Indian Council on Agricultural Research and USDA/FAS and USAID representatives to discuss the program and its purposes. A major objective was to ensure that ICAR have a greater understanding of the trilateral program and its objectives and operational framework. A draft MOU among the three participating institutions was shared with Indian counterparts.[2] This document spelled out the intended roles and responsibilities of the three participating institutions. Eventually, PAU could not sign the document because of a directive received from ICAR regarding international agreements.[3]

Performance Gap Identification Workshop

A workshop, hosted by EGU, was held in Kenya in late August, 2012. It focused on identifying key performance gaps in EGU's program in agriculture and how they might be addressed through the trilateral program. Thus, the exercise was in strategic planning for the program. The workshop had several attendees from PAU and from OSU in addition to numerous

[1] See next section for further description of this workshop and its outcomes.
[2] Available upon request.
[3] Available upon request. We were unable to sign the document during the life of the contract and direct administration of grant funds by PAU never materialized as a consequence.

representatives from EGU. The workshop was led by representatives from all three institutions. Specific gap areas that were identified for the program were (a) value chain curricula development; (b) development of a university outreach center; (c) promotion of private sector linkages; (d) creation of a Teaching/Learning Center to improve undergraduate program performance; and (e) development of technology packages for small land holders and landless rural residents. An outcome of this workshop was a strategic plan consistent with program objectives that identified activities to be undertaken along with a proposed time frame for them, results and milestones to be achieved, anticipated outputs and outcomes, and an initial evaluation plan for the program. An appropriate division of labor among the participating institutions was also defined and a preliminary budget based on it was also created.

Major Programmatic Components

(1) Agribusiness Sector Support – Several agribusiness sector related activities were identified as integral to the strategic plan. They included (a) Agribusiness Sector Needs Assessment; (b) Value Chain Course Development; and (c) Business Plan Development.[4]

Agribusiness Sector Needs Assessment – In order to strengthen linkages between EGU and the agribusiness sector, EGU conducted a survey of agribusinesses in the region, focusing on current activities being undertaken and needed inputs to make the sector more resilient and productive. This study was designed with inputs from OSU and PAU. Results were incorporated into a report prepared by the EGU Dept. of Agricultural Economics and Agribusiness. The study was used to identify further project activities related to this sector.

Undergraduate Value Chain Assessment and Management Curriculum – One of the major needs identified for the agribusiness sector was training on the capacity to work with commodity value chains. Representatives from OSU and PAU worked with EGU collaborators to develop a syllabus for a new course in value chain management that is now being taught to all of the undergraduates in the Colleges of Agriculture and Education, substantially improving understanding of the sector.

[4] Another recommendation emerging from the performance gap workshop was that EGU work with agribusinesses to develop them into a viable association that would serve its membership through advocacy, self-learning, and cooperative inputs purchases and marketing of products. Unfortunately, time availability did not permit us to address this topic.

Master Degree Program in Value Chain Management – Building on previous interactions with Germans through GTZ, EGU requested development of a modular graduate degree program on value chains. The goal of this program was defined as providing course content and work experience that better prepares agribusiness men and women as well as undergraduates with a better understanding of and experience with value chain systems. An outline for this course was prepared. It includes training on commodity value chain management as well as managerial accounting, managerial economics, managerial marketing, and human resource management. All participants in the program will be required to undertake an internship with an agribusiness. And all participants in the course will be required to develop a case study of an agribusiness and a written report on an issue or challenge faced by that agribusiness. This program will be offered beginning in fall, 2015 by the Department of Agricultural Economics and Agribusiness.

Trilateral Team Visiting Agribusiness Participant in Business Plan Development Workshop

Business Development Plans – Other key needs for training identified in the agribusiness sector survey were (1) the ability to draw up business development plans and (2) the ability to manage finances. As a result, OSU and PAU, together with staff in the Department of Agricultural Economics and Agribusiness, organized and conducted a workshop for members of the agribusiness community on this topic. Graduate students in the department at EGU were invited to sit in on the workshop and to work with agribusiness participants in the preparation of their plans. Materials were collected for a case study of one of the participants which eventually will be used in classes taught at EGU. Students were instructed to continue working with the agribusiness participants on their individual business plans.

(2) University Outreach Center – Participants in the initial workshop identified the creation of a university outreach center as an important way for EGU to better serve its potential and actual stakeholders. This priority was stimulated in part by the visit of Dean Alexander Kahi and other EGU staff to India where they had an opportunity to learn about PAU outreach centers located in different Punjab districts. Known as KVK's[5] they are funded through the Indian Council on Agricultural Research and are important sources of technology and other agricultural production and marketing inputs for local farmers.[6] Related workshops were conducted over the life of the program. They focused on strategic planning for this Center. They were held in Kenya and India and involved OSU, PAU and EGU participants. The outcome of these inputs was the development of a strategic plan for EGU outreach centers. The plan was organized to conform to EGU administrative guidelines and is now being circulated among leaders of appropriate Kenyan county and federal agencies. Preliminary interest in utilizing the resources of EGU for agricultural outreach programs is significant.

Visit to PAU district outreach center as part of strategic planning for EGU outreach center

(3) Curriculum Reform – Another performance gap identified at the inaugural workshop was the relative lack of practical training being provided to students as well as the need for students to become more directly engaged in the learning process through better utilization of communication technology breakthroughs. It was generally felt that EGU needs to develop its capacity in-house to make a fundamental change in its teaching practice. The paradigm shift must be to Learner Centered Teaching with effective integration of educational technology throughout curriculum in order to enrich Teaching-Learning. The issues raised were related to active learning strategies, creating a conducive classroom and campus environment, equipping pedagogues with understanding of learning and use of ICT tools for teaching, extending help in planning and designing

Tea Break – Teaching/Learning Center Academic Excellence Presentations

˘ PAU was established with assistance from Ohio State University over 50 years ago and the KVK's are similar to county extension offices in Ohio.

instructional deliverables, and improving assessment techniques to produce desired learning outcomes. The overwhelming concern related to students gaining practical experiences as part of their undergraduate curriculum, improving student-faculty interaction, improving feedback on student assessment outcomes and bringing students into closer contact with agribusinesses and other stakeholders in the agricultural economy in which they anticipate being eventually employed. Several discrete activities to effect change at the level of teaching practice were identified and are discussed below.

Internship Manual - All students at EGU are required to undertaken internships as part of their undergraduate degree program. These internships can vary considerably in terms of who hosts the students and how student internship experiences are evaluated. Several PAU and OSU staff were identified to work with the EGU Office responsible for administering internships. They were charged with preparing a manual that would significantly increase the quality of internship learning. This included attention to the organization of the practical learning experience and effective oversight of it by EGU staff and internship hosts. It focuses on the responsibilities of the EGU internship supervisor and the responsibilities of the student.[7] This manual was edited and several thousand copies have been made for use by students and their supervisors during the coming academic year.[8]

OSU and PAU collaborators posing in front of new Teaching/Learning Center being constructed on the EGU campus

Teaching/Learning Center – Development of a Center to champion curriculum change and improvement of teaching/learning activities was a performance gap identified at the strategic planning workshop. OSU and PAU staff had partnered in the past to develop a similar teaching academy of excellence at PAU. PAU and OSU staff members, who had participated in this earlier experience, were tapped to work with staff at EGU to develop its Center concept. The result has been the development of a plan for a Teaching/Learning Center (TLC). The overall purpose of the TLC will be to enhance the quality of academic programs offered by the Faculty of Agriculture at Egerton University. The TLC is envisioned have key objectives, namely (a) to be a source of information on current teaching methods, strategies, and technologies; (b) to provide programming to enhance the delivery of course content for effective classroom teaching performance; and (c) to champion fundamental changes in the teaching

[7] Plans were also made for preparation of a similar document for the internship hosts who share in the oversight responsibility for the internship experience.
[8] Copies of the Internship Manual are available on request.

culture among the academic staff. The outcome of this interaction, which included several workshops at EGU and PAU involving multiple staff from both institutions and OSU, is a strategic plan which identifies center goals and an implementation strategy.[9]

(4) Improved Applied Research/Outreach Capacity[10] – The performance gap workshop identified the need for EGU to improve its applied research/outreach capacity. Participants in this workshop included representatives from Langston State University. Langston had been selected to participate with EGU on an applied research project on goat production in Kenya. The goat activity was not formally a part of the Trilateral Program and did not involve inputs and interactions with Indian participants. The workshop identified two priority research/outreach topics for the program. They met the criteria of helping to increase their productivity and to increase their incomes derived from agriculture.

Apiculture and mushroom production were two programs developed at PAU over past decades. They require little or no land and they provide substantial potential incomes to small land holders and landless rural residents. They represented appropriate technologies for rural poor that were developed by PAU and could be applied in Kenya through interventions by EGU.[11]

Apiculture/Honey Production – Honey production is not new to Kenya. However, the African bee populations are not major honey producers and tend to be more aggressive than some other bee races. PAU has several decades of experience in beekeeping research teaching and outreach programs in Punjab State. The purpose of this activity was to adapt methods of commercial beekeeping promoted by PAU to Kenya. This was designed to be a multi stage activity involving exchange visits between PAU and EGU staff to observe on the ground their respective programs. Over the course of the program EGU staff responsible for this program visited PAU two times. Initial visits were used to identify existing programs and opportunities and to design an applied research program that would lead to increased production in Kenya. Experts from PAU traveled to different regions of Kenya to observe honey production and to visit entities that support this activity such as the Baraka Agricultural College, Kerio Valley Development Authority and the National Beekeeping Center. EGU visitors to PAU

EGU specialists receive bee management training at PAU

[9] The Strategic Plan entitled, Teaching and Learning Centre at Egerton University is available upon request.

[10] www.facebook.com/video.php?v=10153133602488694&set=vb.146218063693&type=2&theater – see this website for a short video on this aspect of the trilateral partnership.

[11] EGU already had some capacity to work on these topics and this formed a very important base for development of related Trilateral Program activities.

visited its campus Apiculture facilities and KVK's where honey production technologies are disseminated. They also visited various stakeholders in the value chain of honey production including producers, traders, exporters, equipment and machinery manufacturers and exporters, honey packers and retailers. Over the course of the program, PAU honey bee specialists visited EGU three times to collaborate on development of a Demonstration Apiary and an Apiculture Demonstration Centre and to collaborate on development of teaching materials, including short courses for local producers and refresher and advanced courses for extension personnel, and also a teaching course in Agriculture for undergraduate students. A short course for Kenyan producers was actually offered jointly by EGU and PAU staff toward the end of the program.

Mushroom Production – Similar to honey production, this activity does not require much land, but can be a gainful source of employment for rural households, especially those headed by women. PAU had also developed a strong program in this area over recent decades and had disseminated this technology to rural Punjab farmers. Several staff members at EGU were assigned to develop this activity jointly with counterparts at PAU. Based on exchange visits between their respective institutions, these collaborators developed a program of action that has resulted in the establishment of a mushroom seed (spawn) production unit and a demonstration unit for mushroom production at EGU. While at PAU, EGU counterparts learned about its applied mushroom research/outreach activities. While at EGU, the PAU counterpart visited mushroom producers and assessed the status of this activity in Nakuru County. Over the course of the program a mushroom production demonstration unit was created at EGU involving the production of high quality mushroom spawn as well as the actual growing of button and oyster mushrooms. The counterparts collaborated in the development of relevant course materials both for the undergraduate program at EGU and for short courses for local mushroom producers. A short course for producers was offered toward the end of the program.

Mushroom Short Course Participants

Evaluation Workshop

A final evaluation workshop was held in December, 2014 at EGU. In attendance were representatives from OSU, EGU, Langston, and USDA/FAS. Unfortunately, it was not possible to have counterparts from PAU participate due to other commitments on their campus. They were subsequently interviewed by the USDA/FAS evaluation specialist via skype, so they were

able to make inputs into the final evaluation process. The workshop focused on recapping activities undertaken as part of this program, and assessing program milestones and outputs as well as lessons learned. The remainder of this final report focuses on these topics.

Program Targets and Outcomes

This section will provide information on actual products produced by the program. These products are important since they represent materials that can be used by EGU in furtherance of its teaching, research and outreach programs.[12] Also found in this section are data on number of individuals trained as a result of program inputs.

Agribusiness Sector Support

- **Agribusiness Sector Needs Assessment Report** - The needs assessment was a comprehensive study of agribusinesses in Kenya, with a focus on Nakuru County, the prime region of interaction with EGU. Data gathered, and the subsequent report prepared, highlight the needs of this sector and can be used to develop additional programs of outreach to this community. Since the report was prepared by EGU agricultural economists, they have good contacts with the sector and can act directly on the recommendations emerging from this study.

- **B.Sc. Course Syllabus for Value Chain Assessment and Management –** Understanding the various interactions among major actors in commodity value chains is an important trait to bring to the agricultural job market, particularly for those working with the private sector. This syllabus is currently being offered to over 1300 students per year, across various academic majors in agriculture and education. It promises to significantly enhance the capacity of these graduates to be successful in their occupational endeavors upon graduation and to contribute more to the development of Kenyan agriculture.

- **M.Sc. Program in Value Chain Management** – This program is designed in modular form. Although primarily designed for full time students, it has a real potential to enhance the performance of individuals actively involved in the agribusiness sector, by allowing them to take individual course modules over time. The program will be

[12] These outputs are available upon request and are found as attachments to Quarterly Reports submitted to USDA/FAS that were specified in the original cooperative agreement with OSU.

managed and staffed by members of the EGU Department of Agricultural Economics and Agribusiness.

- **Case Study - Business Plan Development** - This case study arose from the workshop offered to agribusiness men and women. Case studies are an important teaching tool to illustrate the principles and practices involved in developing a business plan. Data from an agribusiness firm that participated in the workshop were collected and are being incorporated into the case study, thus making it a real, Kenya grounded example of how to develop a sound business plan. Collaborators from EGU, PAU and OSU continue to refine it. It will eventually be used in other courses being offered by the Department of Agricultural Economics and Agribusiness as well.

University Outreach Centre

- **Knowledge Centre for Agriculture Strategic Plan** – This strategic plan was developed over the life of the program. It was prepared in conformance with strategic planning requirements at EGU. Thus, it has the full support of the university.

  Consisting of strategic goals and objectives along with a SWOT analysis and implementation plan, it outlines what EGU is prepared to provide to the agricultural sector in terms of research and outreach. This document is very timely, given the decision of the Government of Kenya to decentralize administrative and support functions to country governments. It has already been presented to several county governments that have expressed interest in contracting with EGO to provide inputs to their agricultural sectors, particularly in terms of collaborating with their county extension units.

Banner for Trilateral Program Displayed on Egerton University

PAU counterparts with apiculture short course participants

- **Apiculture Demonstration Unit** – The apiculture demonstration unit was developed at EGU over the life of the program and consists of over 40 hives of different types. Located in a protected area, it has already proven its use as a model for bee producers. It has been used in a recent short course offered to producers. It will also be used to produce honey for sale by the

College of Agriculture, thus increasing its ability to sustain the program as well as other agricultural research.

Mushroom Demonstration Unit – Quality Spawn Production

- **Mushroom Seed Production and Demonstration Unit** – Similar to the previously described demonstration unit, this unit has already been used to train local mushroom producers about proper practices. It essentially has three components. It has a laboratory in which quality mushroom seed spores and spawn are produced. This is being disseminated to local producers at low cost to them, thus satisfying their concerns about lack of access to high quality spawn. And it has a demonstration area for composting materials that serve as the beds on which button mushrooms are produced. The third part consists of a mushroom grown house demonstrating how mushrooms can be grown under proper ecological conditions. Mushrooms will also be produced for sale thus also increasing the unit's sustainability.

Curriculum Reform

- Teaching/Learning Centre Strategic Plan – This plan was finalized during the latter months of the program. It focuses on how to transform pedagogical activity at EGU from a focus on staff lecturing to student learning. Divided into three phases, it initially emphasizes easy increased access to innovations in teaching techniques for EGU lecturers and development of a supporting environment for change. It then recommends a phase in which academic staff are provided with skills needed to increase their efficiency and effectiveness as teachers. The focus is on the individual teacher. A final stage envisions a fundamental change in the academic culture of Egerton, including policy and procedures that have been established over the years and considered to be sacrosanct by the Egerton academic community.

- **Internship Manual** – An internship manual was also developed over the life of the program and included substantive inputs from all three partner institutions. It provides an up-to-date framework for the conduct of internships and specifies the obligations of interns and their university and private sector supervisors as well as procedures to be followed in the conduct of the internships and the evaluation of student performance. By the end of the program, a final edited version was prepared and plans were made to

produce three thousand copies for use by undergraduates from agriculture and other faculties at EGU during the coming year.

Number of Individuals Trained

Activity Undertaken	Number
Strategic Planning at EGU	
EGU staff	12
Strategic Planning at PAU	
EGU staff	6
Business Plan Workshop	
EGU staff	4
Agribusiness men and women	16
EGU graduate students	32
B.Sc. Value Chain Assessment and Management Course	
EGU staff	10
Undergraduate students	3,000
Teaching/Learning Improvement	
EGU staff	28
EGU students	110
M.Sc. Value Chain Management Degree	
EGU staff	4
Honey Bee Production	
EGU staff	2
Honey producers	65
Mushroom Production	
EGU staff	4
Mushroom farmers	48
EGU Students	10

Lessons Learned

This discussion of lessons learned focuses on the trilateral relationship among the partner institutions. Observations are based on specific programmatic activities undertaken, but also on factors that determine whether or not partner institutions can effectively collaborate and can form long term partnership relations.

(1) Trust and familiarity among partners are necessary conditions for successful partnerships.
Getting to know one another is an important first step in effecting partnership programs, particularly if the prospective partners have had limited interaction in the past. It is especially critical if the institutions are from significantly different cultural contexts. The process of getting to know one another can be purposely strengthened by providing opportunities for informal interaction among actors once program activities are initiated. In the case of the EGU/PAU/OSU partnership, it was vital that the PI from EGU travel to India to meet with the leadership of PAU, USDA/FAS and USAID officials in India and with representatives of the Indian Council on Agricultural Research and the Ministry of Agriculture as a first step in building the partnership.

(2) Successful programs depend on early buy-in by all partners.
All participating institutions in the trilateral program need to feel that they have a stake in the success of the program and, therefore, that they have helped define program content. Thus it is essential that all partners be involved in the formulation of the initial program proposal as well as in the definition of program goals, objectives and activities to be undertaken. In regard to the latter, each partner needs to understand the roles that it will play in the program, the staff and other resource commitments that it will need to make, as well as the resources that will be provided by the funding institution in furtherance of its participation. The performance gap workshop held at EGU was essential to achieve this objective. All institutions had representatives that actively participated in the development of a program strategic plan and all institutions made significant inputs to the plan.

(3) The senior partner's partnership building role among the other two participants is critical.
A critical role for the senior partner is to in bridge cultural gaps among the other two partners. Typically, they would use their existing social capital with the other partners in doing so. Ideally, the senior partner has a long standing relationship with the other two partner institutions. This relationship would ideally include past programs that involved interaction among its staff and the staff of the partner institution. This past staff interaction can be used to build new relationships among staff members from the other two partner institutions. For the

EGU/PAU/OSU trilateral program, these past relationships between the senior partner and each of the other partners were used to build new relationships based on interactions occurring as part of the trilateral program. This lesson learned would suggest that the senior partner should have a history of collaboration with institutional partners and experience in creating and managing partnership programs.

(4) Partners need to have the capacity to identify alternative ways of supporting programmatic activities should bureaucratic obstacles arise.

Partners are subject to different bureaucratic and policy frameworks that are unique to the national institutions to which they respond. In some cases, these frameworks may raise substantial obstacles in regard to the ability of the partners to carry out their objectives. In the case of the EGU/PAU/OSU partnership, PAU could not sign the MOU and thus could not enter into a formal agreement with OSU in order to formally administer program funds because of a directive received from ICAR regarding international agreements. Objections raised were the result of government-to-government interactions that had nothing to do with the institutions involved. In order to make the program operational, it was necessary to find an alternative solution which was for OSU to manage all funds related to PAU participation in the program, thereby significantly increasing the administrative burden for OSU and denying PAU access to funds related to hosting partners while on the PAU campus. The ability to adjust to administrative obstacles depends in great part on the experience of the senior partner and the ability of the partners to seek program alternatives when they arise.

(5) Partner institution leadership needs to be supportive if partnerships are to be successful.

Support from institutional leaders is a necessary condition for program success. This support includes appreciation of the cultural and social diversity represented by the institutions involved. Ideally, this support would translate into formal documents of agreement, such as the MOU which we were unable to sign due to Indian government policy. One of the initial project activities was having the OSU Director of International Programs in Agriculture and the Dean from EGU visit the PAU campus to meet with the PAU Vice Chancellor and his team to discuss the program. By the end of this visit, all participants pledged their full support for it. The Dean, Graduate Studies, represented PAU at the initial workshop at which the strategic plan was developed. Subsequent authorization of PAU staff travel to EGU and approval of visits by EGU staff to PAU was forthcoming from the Vice Chancellor's office.

(6) Successful programs need sufficient time to build strong partnerships and to ensure maximum impact of capacity building activities.

Allowing sufficient time for program activities to have their impact on institutions and their existing programs is essential. The amount of time needed may be greater given the fact that

most of these programs require time for the participants from the participating institutions to get to know one another. Technical programmatic activity may not require the same amount of time to be effective as illustrated by the apiculture and mushroom activities of our partnership. It is hoped that the interactions among staff from PAU and EGU will persist into the future now that the formal program has ended. Development of an Agricultural Outreach Center and a Teaching/Learning Center require more time, given the obvious changes implied in "customary ways of doing things." It is significant that the program achieved the strategic plans for these activities, but had insufficient time to help with the implementation of these plans.