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## Uganda: AET Assessment Report

Designing a Strategy to Up-Grade and Enhance the Institutional Capacity of the Department of Agribusiness and Natural Resource Economics (DANRE) in the College of Agricultural and Environmental Sciences, Makerere University

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## Executive Summary

During the week of 25-29 November 2013, the *InnovATE* Scoping Team facilitated dialogue and joint learning to determine the challenges and opportunities within the Department of Agribusiness and Natural Resource Economics (DANRE) programs. The purpose was to design a feasible strategy to up-grade and enhance DANRE graduate and undergraduate programs so that they are more responsive to the needs of policy makers, agribusiness employers and entrepreneurs throughout the Ugandan agricultural sector.

This scoping visit focused on the critical issues affecting the supply and demand for agribusiness professionals, entrepreneurs, and policy analysts through interviews and data collection with a wide range of stakeholders. These stakeholders included USAID/Uganda, the FtF Commodity Production and Marketing Activity, DANRE, CAES, representatives from two ministries, the Economic Policy Research Center (EPRC), private sector entities from selected value chains (professional associations, financial institutions, farmer organizations, NGOs), and DANRE faculty and students. The scoping team relied on four key thematic questions to guide the investigation: What knowledge, skills and attitudes (KSAs) are expected of agribusiness professionals? Does the curriculum address this demand? Is the delivery of the content successful? Are there other opportunities/mechanisms for delivering the content/curriculum?

According to industry stakeholders, priority KSAs included the ability to prepare a business plan, draft balance sheets, conduct financial and risk analyses, analyze value chains, and understand the management implications of agricultural policies. In addition, skills in quantitative analysis, business writing, and interpersonal communication were also considered critical. Taking these stakeholder perspectives into account the curriculum of the Bachelor of Agribusiness Management (BABM), the Master of Agribusiness Management (MABM), and the PhD in Agricultural Economics were reviewed, with due consideration for other DANRE academic programs.

It was concluded that while a few courses were missing from the curriculum (e.g., business writing), the curriculum content was quite complete. This led to the point made by the vast majority of stakeholders that practical hands-on experience was missing and one of the best ways of accomplishing that was through a strong internship program linked with the agribusiness sector. Not all hands-on experience can be gained through internships, however. It was also concluded that while the content of the curriculum was on the books, more active learning practices would considerably increase student learning and capacity outcomes, particularly given the fact that many of the key materials were being transmitted to students in very large classes. Innovations in curriculum delivery must be made.

This report concludes with a recommendation for next steps to strengthen Makerere University DANRE's capacity to produce the next generation of agribusiness professionals, entrepreneurs, researchers and policy analysts in line with the needs of Uganda's agricultural sector while identifying interventions that USAID and other stakeholders can use to support it.

This document was prepared for the USAID Mission in Uganda. It summarizes the work of the InnovATE scoping team in response to the mission's request for assistance in developing the country's agricultural training and educational capacity. The opinions expressed herein are those of the InnovATE Scoping Team and not of the U.S. Government. The recommendations may form the basis for USAID and other donor investment ATE in Uganda's agricultural training and education system.

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## Background

In 2005, the Ugandan National Agricultural Research System (NARS) was reformed including the National Agricultural Advisory Services (NAADS) to implement the Plan for the Modernization of Agriculture (PMA). The objective of these institutional changes was the development of a national agricultural innovation system (AIS). In 2008, Makerere University reorganized its schools and departments into a collegiate system to better support these changes. Within this structure, the College of Agricultural and Environmental Sciences (CAES) was organized into three schools from a plethora of disparate departments, faculties and institutes. The consolidation was designed to strengthen and focus CAES programs. To complete this transformation, efforts must now be channeled toward the fine tuning of individual programs, adapting them in the context of Uganda's commitment to the Comprehensive African Agricultural Program Development (CAAPD) and its Development Strategy and Investment Plan (DSIP). The DSIP seeks to transform national higher education systems to become more competitive, service oriented and society relevant through innovative learning, research, and outreach services.

Agricultural development in Uganda is evolving toward an AIS approach involving platforms at the local level to support agribusiness development of targeted value chains. To assure an enabling environment for these national programs and USAID/Uganda's Feed the Future (FtF) program a supply of agribusiness professionals, entrepreneurs, and policy advisors with strong economic and analytic skills is essential. Within Makerere University, the Department of Agribusiness and Natural Resource Economics (DANRE) is charged with providing these qualified personnel. However, the BABM and MABM curricula have not been reviewed and updated since their inception in 2000. They were designed to equip students and practitioners with agribusiness knowledge, skills and attitudes (KSAs) to respond to challenges of modernizing and transforming agriculture. The PhD in Agricultural Economics, which is attained exclusively by research, has not been upgraded to generate policy analysts with rigorous analytical capacity and lacks a theoretical curriculum component.

## Scoping Program Objectives

This scoping visit focused on understanding the critical issues affecting the supply and demand for agribusiness professionals, entrepreneurs, and policy analysts through interviews and data collection with a wide range of stakeholders. These stakeholders included USAID/Uganda, the FtF Commodity Production and Marketing Activity, DANRE, CAES, representatives from two ministries, the Economic Policy Research Center (EPRC), and a range of private sector entities from selected value chains: professional associations, financial institutions, farmer organizations, and NGOs (see Appendix B).

The scoping team obtained information from the DARNE and their clientele to achieve the following objectives:

1. Identify potential clienteles for the department and determine their priority human capital needs;
2. Identify key interventions for enhancing the curriculum, practices and programs of DANRE to respond to these priorities, with particular attention to the:
  - a. Review and/or restructuring of the curricula of two postgraduate and one undergraduate programs
  - b. Up-grading of communication and instructional methods and materials; and
3. Determine the feasibility and design interventions to achieve these transformations.

## Methodology

The purpose of *InnovATE* scoping activities is to (a) determine how the ATE system works; and (b) specify what can be done to improve it. The result of the scoping activity is an action plan forming the basis for an associate award that accomplishes the USAID mission's strategic objectives. The *InnovATE* scoping team followed an adaptation of *InnovATE's* Generic Scoping Methodology (see Appendix D for target interview protocols). Based on review of desktop research and in consultation with USAID/Uganda, the scoping team identified four key thematic questions to guide the investigation:

- What knowledge, skills and attitudes are expected of agribusiness professionals?
- Does the curriculum address this demand?
- Is the delivery of the content successful? To what extent is learning occurring?
- Are there other opportunities/mechanisms for delivering the content/curriculum?

While not restricting the investigation, these key issues focused the team's efforts as they encountered new information, concerns and priorities during stakeholder interviews and focus group discussions.

The team included a curriculum assessment specialist/team leader, an agribusiness development specialist, and an ICT/curriculum specialist<sup>1</sup>. An ICT curriculum specialist from RUFORUM and an AAAS fellow from USAID/BFS completed the team. During the week preceding the assessment, the Team Leader arrived in country to set up appointments and logistics. Once the full team was assembled, it spent the week conducting semi-structured interviews, focus group discussions, a Strengths, Weaknesses, Opportunities and Threats

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<sup>1</sup> Unfortunately, the ICT/Curriculum Specialist's father died mid-week and he left for home. His insights will be incorporated after he returns from family leave.

(SWOT) Analysis, and other informal data gathering methods about the DANRE curricula, its implementation, and the priorities and concerns of DANRE stakeholders. The ICT team members explored soft and infrastructural strengths and weaknesses for ICT curricula development. At the end of the week the team synthesized their findings into a menu of implementable tasks (a next steps action plan) at the end of this report.

The methodology for addressing the agribusiness supply and demand of qualified economic analysts and agribusiness professionals required meeting with a broad range of stakeholders: students, faculty and administrators on the supply side; and agri-business professionals, employers, government officials, and policy analysts on the demand side. Sampling was weighted toward the agribusiness private sector. Over 70 DANRE stakeholders were interviewed by the *InnovATE* Scoping Team.

## Stakeholder Perspectives

### Private Sector and Government Priority KSAs for Agribusiness Graduates

In order to understand the demand for agribusiness professionals, we met with a broad range of stakeholders who have hired, managed or collaborated with agribusiness professionals. We were particularly interested in understanding the set of knowledge, skills, and attitudes (KSAs) expected of these human resources. The individuals interviewed represented many actors along the agricultural value chains, *e.g.*, farmers, food processors, manufacturers of agrochemicals and farm/food processing equipment, commodity exporters, financial institutions, government ministries, and a policy institute on the Makerere University campus. Thirteen one-hour interviews were conducted with 21 individuals. These discussions were structured around three questions that addressed: what KSAs are expected of new hires; whether those KSAs were indeed part of the new hires' professional repertoire; and, if not, which of those KSAs were absent. Responses were categorized and tabulated below in order to identify gaps between employer needs and new employees' characteristics.

All but one interviewee commented on deficits in “hands-on practicality”, suggesting that recent graduates generally lacked real-world experience and had only mastered the theoretical aspects of agribusiness. This observation is underscored by the fact that most respondents identified few of the desired KSAs as being present in new hires with the exception of a basic understanding of agricultural production. Management skills, professional writing, financial analyses, and business plan development (all critical agribusiness functions) were reported as lacking in the vast majority of interviews.

Financial analysis and the foundational quantitative reasoning it is based on are critical to effective employees in the agribusiness sector. No stakeholders reported that recent graduates

(of the undergraduate programs) could conduct a financial analysis, build an economic model, or relate government policies to their implications on the ground. Accounting skills were also insufficient, although a number of employers reported that they were willing to train new hires who had a good grasp of the agricultural sector.

**Table 1: Gap analysis between workforce needs and new employee KSAs**

Knowledge, Skills, and Attitudes (KSAs) of Agribusiness Professionals	Number of stakeholders reporting KSAs	
	Present when hired	Lacked when hired
Quantitative Reasoning	1	5
Financial Analysis and Accounting	0	6
Econometrics	0	3
Critical Thinking and Problem Solving	0	6
Professional Writing	1	6
Interpersonal Skills (listening and speaking)	3	9
Understanding Agricultural Production	9	4
Value Chain Understanding	1	5
Business Plan Development	0	4
Management Skills	2	7
Agricultural Policy Issues	0	6
Motivation, Drive, Innovativeness, Entrepreneurial Focus, and Business Professionalism	1	11
Hands-on Practicality	0	12
Number of interviews	13	13

The second broad category reported as lacking in new hires concerns their attitudinal perspective as indicated by new employees, “motivation, drive, innovativeness, entrepreneurial focus, and business professionalism.” These characteristics encompass a range of attitudes and personal qualities that contribute to business success and value-addition. Good interpersonal skills were mentioned as frequently as knowledge about agriculture, yet were inadequate in most new hires. Empathy with rural populations and effectiveness in meeting their needs were cited as critical factors for success in agribusiness.

Overall, stakeholders valued employees that were agribusiness-minded, *i.e.*, having strong analytic skills and a deep grasp of the agricultural value chains and their operations. They actively sought graduates who could listen carefully and relate well to clients, analyze situations, think creatively about the issues, propose effective solutions, and communicate them well. All reported great difficulty in finding and recruiting such individuals. In addition,



most employers preferred BSc graduates partly because their salary expectations were not excessive, but also because they perceived this training as more appropriate to the tasks for which they were being hired. Indeed, at times it appears that these stakeholders were describing two different individuals: one, an agronomist; and the other, a business major. This was less the case for many NGOs and policy-oriented entities who required more rigorous quantitative analytical skills. There are high expectations for the agribusiness professional.

### **DANRE Faculty Perspectives**

The department's 20 academic staff includes 13 PhDs and 7 Master's Degree holders in various fields of specializations. Given that the agribusiness programs had been running without review for over a decade, the DANRE Head and faculty are excited about the opportunity to reflect on these programs and consider ways to revamp the curriculum to put more emphasis on practical applications. During the 3-hour focus group discussion, eleven DANRE faculty (7 men and 4 women) told us about what they want their graduates to learn. They have high expectations for their students and see them becoming Uganda's future agribusiness leaders. Their ideal graduate exhibits not only competence in business accounting and good writing skills, but also high integrity and trustworthiness. They desire their graduates to be innovative, independent thinkers, who are self-motivated and hard-working. Entrepreneurial spirit and self-employment were also highly valued. Faculty members strive to achieve these outcomes through demonstrations, lectures and discussions about business practices. They realize that practical experiences are critical to good learning, but often resources only allow for the use of demonstrations and case studies. Where possible they find involving the students in research experiences helps.

Unfortunately, there are some critical capacities that they see as lacking in their graduates. In particular, skills in financial literacy (planning and management) and writing for business plans, proposals and reports are weak. Perhaps, more importantly they feel they have not been able to instill an entrepreneurial mindset. Graduates do not appear to be prepared to take risks, preferring to play it safe and find employment in established ventures. Faculty believe that they need to provide practical learning opportunities in which this mindset is more likely to blossom. However, they do not feel that they, as instructors, are the most appropriate role models for entrepreneurial behaviors.

### **Undergraduate Student Perspectives**

We spoke with 35 DANRE undergraduates (17 women and 18 men). Twenty of them had been partly raised on a farm. Another twenty had originally requested to study in a major other than agriculture. These undergraduates have high expectations and see themselves as contributing to the transformation of smallholder agriculture in Uganda. For that reason many chose to study at Makerere University. Upon graduation many stated that they will be self-employed,

whether it is managing their own farm, small business, or consulting. Indeed, most hope to learn a great deal about enterprise development and agricultural markets during their undergraduate careers. Some are more interested in learning about larger development issues like youth unemployment, food security, and international markets. In order to achieve these high aspirations, they are trying to master business, agricultural and knowledge transfer skills. They believe in taking an active role in their learning process by putting what they learn in the classroom to use through various practical experiences including internships and interaction with colleagues, lecturers, business leaders, and farmers.

### **Graduate Student Perspectives**

Nine graduate students (1-PhD, 2-2<sup>nd</sup> year MABM, and 6-1<sup>st</sup> year MABM; 6 men and 3 women) shared their views on DANRE's graduate studies programs. These students realize that for agriculture to grow in Uganda it needs to be recognized as a business. They enrolled for post-graduate training so that they could gain more skills in the expanding the field of agribusiness. Some alluded to their current (although small-scale) involvement in agribusiness. They hope to build their management skills in marketing and communication. A few of them spoke of the importance of smallholder farmers as the foundation of Uganda's agribusiness development. They feel confident enough to start their own business or to train others. This confidence appears to grow from the fact that many among them have had previous employment experience upon which their current program of study is building. Some worked with NAADS, ILRI, NGOs or agribusinesses. These students not only learn from classroom lectures, but more importantly through structured learning experiences such as teaching assistantships, workshops, seminars, and other supervised learning activities. The Internet was rarely mentioned as a source of learning. In addition, all students expressed the desire for more interaction with the private sector.

### **Gender Perspectives**

The two female members of the *InnovATE* scoping team conducted a focus group with 16 women (students, staff and faculty). Women undergraduates, graduates, and lecturers all reported that the situation for females at Makerere has improved dramatically over the last few decades. From a college that was predominantly male (about 95%), near parity has been achieved, with some courses having more females than males. Faculty men and women have the same workloads. Female students have equal access to opportunities and selection is generally based on merit. Programs that were designed to attract females (adding points to application scores) were so effective, that most do not need any additional affirmative action to obtain the course they want. While there is still a problem with a leaky pipeline, females are encouraged to progress professionally.

A consideration of gender has now been incorporated into every undergraduate and graduate program in the college. The department has two mandatory courses, Gender in Agriculture and Development and Gender in Agribusiness. Both are very popular and address issues of ownership, benefit, and control of resources. Appropriate materials for teaching them were reported as difficult to find.

However, structural obstacles to women's advancement do remain. Although more men are assisting their wives to help them devote more time to professional activities, women still retain the burden of child rearing and maintaining the household. Women have fewer networking opportunities due to family obligations and, when they attend evening business activities, they are often criticized for not being home with their families. Makerere is also not family-friendly in that it does not consider women's responsibilities in the home when evaluating women, nor does it provide facilities for nursing moms or maintain a day-care center. Despite these obstacles, professionalism and competence is recognized and rewarded. Moreover, given the importance of agriculture to the Ugandan economy, opportunities abound for both genders.

### **Human Capacity Building**

Having reviewed the expectations and perspectives of various sets of stakeholders above, we now turn to the examination of program documentation and infrastructure that frame the learning enterprise in the DANRE. Overwhelmingly, all stakeholder groups identified instructional delivery as a high-leverage opportunity for human capacity building. Variables associated with increasing human capacity (i.e., knowledge acquisition, knowledge retention, and performance) are commonly grouped into three categories: curriculum design, instruction, and course management. In the past, the process of learning in higher education has been viewed as a largely passive experience in which knowledge is transferred from the instructor to the student and stored for future use. However, over the past 20 years, research into the operation of the human brain has led to theories and shifts in paradigms that reflect a more active model of knowledge acquisition. In this model, knowledge is constructed through interacting with the physical world, acknowledging and valuing the social context of learning environments, and developing and reorganizing cognitive structures.

Instructors who actively engage students use hands-on lessons that require students to use multiple learning skills and higher order thinking to construct meaning and knowledge. Such activities often require students to merge their personal experiences with new theoretical concepts while developing the professional skills required for success in the workplace. Although it is widely accepted in the field of education, only recently have other fields of study acknowledged the positive impact of active learning strategies on student learning outcomes.

As a result, institutions of higher education are increasing efforts to update curriculum, train instructors, and employ course management tools that better engage and prepare students for their respective professions.

## **Preliminary Review of Existing Curriculum <sup>2</sup>**

### **Bachelor Agribusiness Management (BABM)**

Based on review of a nearly complete set of syllabi the program is presented as providing a solid foundation in agribusiness management. One missing element is a course in either technical writing or business writing. Poor writing and/or business writing skills were mentioned by many stakeholders (both faculty and potential employers). Therefore, DANRE should consider incorporating a technical or business writing course in their BABM program.

It should be noted that the BABM program is only a three-year program. Teaching the BABM program in three years is a challenge and may contribute to comments by stakeholders that students lack hands-on experience and possess a conceptual as opposed to a functional understanding of business management tools (profits and loss statements, benefit cost analysis, business plans, and so forth) that they have been exposed to during the program. Two key courses where such concepts are presented -- Principals of Farm Business Management (ABM 2101), and Agribusiness Small Enterprise Management (ABM 3104) are service courses for the CAES. They often have 200 students in them, and are taught by one faculty member with no teaching assistant.

Many U.S. programs have basic business management/farm management courses, such as ABM 2101 and ABM 3104 that are taken by many students. However, they serve as introductory courses and subsequently agribusiness students take advanced courses in these areas that are restricted to agribusiness majors. If DANRE were to provide such advanced courses with reduced student numbers<sup>3</sup> agribusiness majors would be able to develop a more in depth understanding of the principles and have more hands-on experience (practice) using business management tools (cash flow statements, balance sheets, business plans, and so forth). Lack of practical hands-on experience was one of the most often cited deficiencies in graduates. Including these upper level advanced courses in the curriculum would lengthen the time that it takes for a student to obtain their BABM.

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<sup>2</sup> Additional work needs to be done on the curriculum review. That is a discussion with the instructor of each course should be undertaken to get more specific details about the courses than are provided in the syllabi. The discussion should not only include what is taught in the course (examples used) but also the teaching methods used.

<sup>3</sup> Reduced numbers may mean 80 students in the class. Giving the 80 students that are likely to be in such classes in depth hands on practical experience could prove to be quite a challenge for the instructor. Additional courses would also lengthen the program.

BABM students do participate in internships, which is good in that it offers them the opportunity to obtain hands-on experience. However, the internships are organized and managed at the college level by a faculty member in another department and do not necessarily have an agribusiness focus. DANRE should consider establishing an internship coordinator in the department to develop and manage these internships. Internships should be structured such that they require students to produce agribusiness products at the end of their internships (e.g., a technical report or cash flow statement). To enhance communications skills the products of the internship could be presented to the agribusiness cohort, and where practical, a representative of the firm where the internship took place. The most important consideration for this internship, however, is that it be linked to an agribusiness.

BABM students also conduct a special study – ABM 3205 (syllabus/description not provided). As with the internship this special study course has the potential to provide BABM students with a hands-on experience in agribusiness. As with the internship, the special study should be directed towards an analysis of an agribusiness firm, which is not necessarily the case now. The special study could, as an example, involve developing a business plan or proposing a change in business practices for an actual agribusiness firm. Given the importance of oral communication skills to the stakeholders, the results of the special study could be presented to the special study class (cohort) and if possible, representatives of the firm. Alternatively, one might use the special study course to examine the implications of government policies on the agribusiness or draft policy briefs (highlighting both pro and con perspectives) on an important issue facing the sector.

Prior to ABM 3205 students take Firm Management Case Study Theory (ABM 2104). Quoting from the course syllabus: “the students start putting the principles especially of economics and firm management into practice to the existing firm situation.” The course includes field trips that require students to write up field trip reports. This course seems to be a good preparation for ABM 3205 and the students’ internships. The field trip reports written in ABM 2104 could be structured to have an agribusiness focus.

One frequent comment that stakeholders made relating to BABM courses is that instructors should strive to incorporate examples from Uganda into their classes. For example, Agribusiness Operations Research (ABM 3103) includes an excellent selection of operations research techniques to teach the students, but examples provided in the syllabus such as “Airline crew scheduling problem” bear little relation to agribusiness in Uganda. Providing more relevant examples could help to address one of the frequent comments of stakeholders: that the courses are too theoretical. Ugandan examples would also help students better relate to the coursework. The point is that the less applicable the examples are to Ugandan

agriculture, the less likely that students will be able to relate to and thus internalize the concepts being presented. This issue also applies to the MABM program.

Many of the stakeholders that were interviewed expressed a willingness to interact with the DANRE, including presenting seminars and giving guest lectures. DANRE could take advantage of such people to bring the “real world” into the classroom through guest lectures at appropriate points in the semester. DANRE could also schedule department wide seminars<sup>4</sup> by these agribusiness stakeholders that could help provide BABM students and DANRE faculty with a more realistic perspective of the agribusiness working environment.

In the early phase of the agribusiness program, DANRE had an Agribusiness Advisory Council (AAC), composed of agribusiness professionals. It is now inoperative, but it should be reestablished. The U.S. experience suggests that an AAC is a vital component in maintaining the relevance and vitality of an agribusiness program. In addition to helping keep the curriculum relevant to the needs of agribusiness, the AAC could play a valuable role in student internship and job placement. This point applies to both the BABM and MABM programs.

It was somewhat puzzling that some stakeholders questioned DANRE graduates’ knowledge of agricultural policy since it is included in the curriculum. Agricultural policy relevant to Uganda including global economic issues<sup>5</sup> is included in the curriculum in Agribusiness Environment and Policy (ABM 3203) and International Trade in Agriculture (AEC 3203). A number of other courses also indicate that they cover some agricultural policy issues in their syllabus. Perhaps the issue is a function of the way the material is presented rather than its absence from the curriculum. While the policies presented may be relevant to Uganda, specific examples demonstrating the impact of the policies on the Ugandan agricultural sector could help students to retain agricultural policy knowledge. Assigning a policy analysis case study in one of the courses could be a way to help students recognize the importance of understanding policy.<sup>6</sup>

A number of the BABM course syllabi mention computer use in the class, and though not explicitly stated, computers should be used in many of the courses, for analyses, writing, teaching and learning, and how to use software including resources on the internet. As the Ugandan agricultural sector continues to transition into commercial production, computer use along the value chain will become increasingly common. Computer and Internet access in particular is limited in the SAS.

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<sup>4</sup> In many programs in the U.S. a department undergraduate club is tasked with scheduling such seminars. Scheduling such seminars facilitates interaction among the undergraduates and the agribusiness community.

<sup>5</sup> GlobalGAP, which is important to Uganda’s agricultural was not referenced in the syllabi

<sup>6</sup> A further refinement would be to have the students present the results of their case studies to the class.

Another issue is that too much weight may be placed on the final examination in some courses. Makerere University mandates that 60% of a course's grade be based on the final exam. While that may be appropriate for some BAMB courses, it is not appropriate for all. For example, a major product of a hands-on intensive business/financial management project (i.e., a detailed business plan or comprehensive financial analysis) in a course could merit being a large portion of the grade.<sup>7</sup> In such courses, it would be appropriate for DANRE to see if they can be granted an exception to this 60% rule. This issue also applies to the MABM program.

#### Masters of Agribusiness Management (MABM)

As with BAMB program, the MABM program (based on the syllabi reviewed) provides a sound framework for studying advanced issues in agribusiness management. However, it is somewhat alarming that Quantitative Methods (AEC 7103) and Econometrics (AEC 7202) are listed as audited courses rather than courses for credit. Since stakeholders indicated that they would like graduates to have good quantitative skills DANRE should consider making AEC 7103 and/or AEC 7202 taken for a grade, rather than audited.

Compared to U.S. programs, DANRE's MABM program is not as in depth. U.S. programs typically consist of three if not four semesters of coursework with an in depth case study/thesis conducted during the fourth semester, or summer of a three-semester coursework program, or perhaps a fifth semester or summer in a four-semester coursework program.

In the U.S., the MABM coursework within the department is typically supplemented (sometimes extensively) with courses from a college of business and/or management sciences. DANRE is encouraged to consider expanding MABM coursework by including relevant courses from other departments to provide its graduates with a more in depth capacity. If students have not had a business or technical writing course in their undergraduate program DANRE may want to consider requiring such a course for its MABM students.

The issues relating to agricultural policy raised by stakeholders should be addressed by ABM 7203, Agricultural Policy Analysis. Quoting from the syllabus, the learning objectives are for students to:

- Acquire a wide range of tools necessary for effective policy analysis in a Sub-Saharan African context
- Gain practical skills in policy analysis of contemporary agricultural policy issues in Sub-Saharan Africa
- Gain the confidence and knowledge to engage effectively in policy debates and basic discussions at various levels of policy making

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<sup>7</sup> In U.S. agribusiness courses such products sometimes constitute the final exam.

- Gain the capacity and ability to effectively communicate policy analysis results (in a non-technical manner) to a wide range of stakeholders

However ABM 7203 is an elective course and thus some MABM students may not be getting this policy background. DANRE may want to emphasise the importance of policy background to its MABM students.

Nothing is explicitly stated about internships in the MABM program. Many of the stakeholders indicated that the graduates lack practical/hands-on/real world knowledge. Thus DANRE should consider establishing an internship program for its MABM students. It appears that an internship would fit well into student's programs in the summer following their first year of coursework. In U.S. agribusiness programs, such internships are typically strongly encouraged and sometimes required.

#### Ph.D. in Agricultural Economics

There is no curriculum per se, in this reading/research degree. Consequently, the DANRE is concerned about the lack of structure and rigor in its Ph.D. program. Introducing coursework into the program is a good idea, but it is not reasonable to expect members of the department as it is currently staffed (numbers; specializations) to teach all such courses. As agricultural economics departments do in the U.S., DANRE should rely on other departments to provide some of this course work.

A basic first year Ph.D. in agricultural economics should include two semesters of: microeconomic theory; macroeconomic theory; and econometrics. Many programs also include one semester of mathematical economics and a third semester of econometrics in their core Ph.D. curriculum. Typically U.S. agricultural economics departments rely on an economics department to teach the economic theory courses (microeconomics and macroeconomics) and the remainder of core teaching is often shared between agricultural economics and other departments. Sometimes other departments teach the non-theory core courses. For example, the mathematical economics course may be taught by the mathematics department. Some of the econometrics may be taught by the statistics department. Beyond the core courses an agricultural economics department will offer some specialized Ph.D. level courses and will also rely on other departments for electives. Given the importance to stakeholders of graduates knowing about agricultural policy and for some stakeholders working on policy analysis, if DANRE does develop a coursework component to its Ph.D. program it should consider including a policy/policy analysis course in its course offerings. For the economic theory and policy courses DANRE could explore options in the School of Business. For example, The Department of Policy and Development Economics has Ph.D. level courses in macroeconomics and microeconomics and would welcome agricultural economics students in their classes.



Should collaboration with Department of Policy and Development Economics for the economic theory courses not work out, there is an alternative. The African Economic Research Consortium (AERC) through its Collaborative PhD Program (CPP) in Economics (<http://www.aercafrica.org/index.php/training/collaborative-phd-programme>) in Nairobi and Dar es Salaam could be a viable option for students to obtain their Ph.D. level economic theory and quantitative methods background. In addition, advanced coursework is available in a variety of elective areas. Quoting from the program's website, the following courses are available:

- Courses in three core fields: Microeconomics, Macroeconomics and Quantitative Methods.
- Courses in two elective fields selected from a rich variety: Agricultural Economics, Labour Economics, Industrial Economics, Health Economics, Environmental Economics, Monetary Economics, Public Sector Economics, International Economics, Development Economics, Financial Economics, and Econometrics.
- Comprehensive examinations in four fields: Microeconomics, Macroeconomics and any two electives.

The Collaborative PhD Program (CPP) in Economics has been supporting 21 Ph.D. students per year. The large number of students from the entire region creates a network and collaborative environment that enriches the students' formal learning experiences.

### **Policy Analysis Considerations**

Graduate's knowledge of agricultural policy was considered weak despite being included in the curriculum. Perhaps the issue is a function of the way the material is presented rather than it not being in the curriculum. While the policies presented may be relevant to Uganda, specific examples demonstrating the impact of the policies on the Ugandan agricultural sector could help students to retain agricultural policy knowledge.

Good agricultural policy instructors tend to be individuals who are seasoned professionals, having worked in the policy analysis arena for some time. Two such individuals from DANRE, Bernard Bashaasha and Johnny Mugisha have taken senior administrative positions and will not likely be able to contribute significantly to the department's teaching.

### **Undergraduate Program**

Agricultural policy relevant to Uganda including global economic issues<sup>8</sup> is included in the undergraduate curriculum in Agribusiness Environment and Policy (ABM 3203) and International Trade in Agriculture (AEC 3203). A number of other courses also indicate that

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<sup>8</sup> GlobalGAP, which is important to Uganda's agricultural was not referenced in the syllabi.

they cover some agricultural policy issues in their syllabus. Assigning a policy analysis case study in one of the courses could be a way to help students recognize the importance of understanding policy.<sup>9</sup>

One would expect an agricultural policy course to provide undergraduate students with a basic understanding of current agricultural policy including a historical background of agricultural policy in Uganda in order to facilitate their understanding of how current agricultural policy has evolved. Current domestic and international agricultural policy should be presented and explained in terms of how they impact the agricultural sector. Policy issues/debates and their implications for the agricultural sector should be explored. The key outcome at the undergraduate level is to not only to make students policy aware, but to make them want to follow, and be able to anticipate the impacts (at least qualitatively) of changes in agricultural policy.

### Graduate Program

DANRE provides a comparable level of coursework in agricultural policy to a typical U.S. agribusiness or agricultural economics program. To quote one of the objectives of their M.Sc. program: “Generate socio-economic research information in order to promote closer links with both the policy making process and the agricultural sector services.” DANRE has one graduate level policy analysis course -- Agricultural Policy Analysis (ABM 7203). In addition many of the MABM and MSc course offerings list policy analysis in their syllabi. Integrating policy analysis into subject matter specific courses such as International Agricultural Trade (AEC 7205) is becoming the approach taken in many U.S. institutions. That is rather than having a number of stand-alone policy analysis courses, policy analysis is integrated into other courses, including quantitative methods courses.

The limited number of masters students who have the opportunity to study in South Africa can obtain an in depth background in policy analysis. Specific Policy analysis courses in the South African program are: Agricultural Policy Analysis (CAEF 512), Quantitative Analysis of Agricultural Policies (CAEE 5122), Food Policy Analysis (CAEE 5123), International Trade and Policy (CAEE 5124), and Science and Technology Policy Analysis (CAEE 5135).

Given a background in Ugandan agricultural policy at the undergraduate level, at the graduate level agricultural policy courses should explore the economic theory behind the agricultural policies. In addition, quantitative methods of policy analysis should be introduced. Basic analytical tools can be introduced at the master’s level with more advanced analytical techniques introduced at the Ph.D. level. Based upon the course syllabi, it would appear that at

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<sup>9</sup> A further refinement would be to have the students present the results of their case studies/term papers to the class.

the MAMB and MSc level, DANRE is providing agricultural policy training comparable to U.S. programs. The courses available in the South African program are well beyond what a typical masters student in the U.S. would be exposed to.

In terms of the Ph.D. degree, while program of structured coursework has yet to be developed, The African Economic Research Consortium (AERC) through its Collaborative PhD Program (CPP) in Economics has the potential to provide a solid grounding in policy analysis. Actually, it may be providing such background, but course syllabi were not available at the time of this evaluation.<sup>10</sup>

### **Instruction and Instructional Tools**

Academic achievement and student performance is not only influenced by curriculum design, but also the interaction among factors of student motivation, interaction with instructors and fellow classmates, and the physical infrastructure forming the educational environment. A common constraint mentioned by both faculty and students alike was the physical limitations associated with the educational environment. There are three large teaching rooms –two with a mounted LCD Projector and others without. There are minimal to no electrical outlets in the teaching rooms, making instruction beyond traditional lecture difficult. Furthermore, faculty mentioned challenges related to the limited availability of relevant teaching materials such as textbooks and e-resources to support classroom instruction.

University and community resources should be utilized to complement faculty-led instruction. Many stakeholders would welcome the opportunity for professionals to come into the classroom to work with students. Additionally, the Makerere University Library provides access to key agricultural databases (e.g., TEEAL, AGORA, HINARI, etc.), online journals, and other publications for strengthening learning and research. Since the ability to recognize the need for further information as well as how to locate, evaluate and use that information effectively are important skills to be imparted to the DANRE students, the aforementioned resources are a major component of instruction. Currently, DANRE faculty are not involved in orientating students to the available library services as this is the responsibility of the University Library for all Makerere students.

Increasing variability in instructional strategies and tools will greatly enhance the current curriculum. Talking to students and faculty it was apparent that both were aware of the need for changes. This is becoming a common recognition across colleges and universities leading to a growing interdisciplinary movement in higher education called Scholarship of Teaching and

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<sup>10</sup> We are currently working on obtaining the syllabi.

Learning (SOTL)<sup>11</sup>. Recent research on teaching and learning has identified a variety of factors which can assist in the achievement of learning outcomes. What makes SOTL so beneficial is that it allows the institution to study local educational needs and implement grassroots efforts that benefit both students and faculty. Learning from these experiences could greatly enhance learning experiences in the DANRE.

### Exploring Internship Options

All stakeholders repeatedly stressed the value of agribusiness graduates with real-world, practical experience. About half the firms interviewed stated that they were obligated to offer considerable in-house training to close the gaps in the backgrounds of new hires. Both undergraduate and graduate students reported that they enrolled at Makerere with the expectation of having field experiences, exposure to agribusinesses, and networking interactions with senior agribusiness professionals. Moreover, students also reported better learning and higher personal satisfaction when a class involved a practical or field component. Faculty members are also very supportive of field experiences for all students.

At present, internships are mandatory and take place during the vacation period following the second year of instruction. They are graded and carry a relatively high number of graduation credits (5 units). A central office within the college is charged with placing students. Each undergraduate pays an internship fee that is returned to him/her at the time of placement to defray the costs associated with their upkeep in the field. Neither DANRE faculty members nor students have a say in where the students go. Most interns are placed in production agriculture in rural areas.

Current implementation of internship programs is encumbered by challenges and not delivering the benefits expected by students, faculty and hosts, alike.

- While students do learn about agricultural production, many would be better served with a placement that emphasizes the business aspect of the course. Attachments in agricultural processing, finance, farm/processor cooperatives and NGOs, or government ministries might ultimately serve students better. Production site attachments could be relevant for those students who lack acquaintance with farming.
- Students are generally only scheduled for internships during the summer break, which is not always well timed to important agribusiness activities. Some hosts report having no work available to do, while students complain of being tasked with jobs unrelated to agribusiness. Graduate students, however, do have more flexibility once their

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<sup>11</sup> The International Society for the Scholarship of Teaching & Learning SOTL was created to recognize and encourage work on teaching and learning in a variety of disciplines. A conference is held annually with over 600 attendees, from over a dozen countries, including Gambia, Nigeria and South Africa.

classroom-based instruction is finished; they can intern at any time of year for extended periods of time.

- The internship fee is inadequate to cover the cost of living when students are placed in the field far from home. Employers sometimes find that students' expectations for financial support exceed the value they bring to the company, while students feel unwelcome, with no clearly defined role within the firms.
- Monitoring and evaluation of internships appears to be weak and there are no clear instructions concerning the roles of hosts versus faculty coordinators. Partners hosting students and the students themselves report that they are seldom visited by Makerere representatives. There is little coordination between partner organizations and the department to ensure that students obtain an appropriate, high-quality training experience and accurate performance evaluation.

Despite issues with the current system, there are reasons to be hopeful that an exploration of different formats and styles of internship will yield dramatically improved outcomes. All the agribusiness employers and government ministries interviewed are either already employing interns or are willing to do so in the near future. In addition, they are willing to work hand-in-hand with the department to determine which experiences would be most beneficial for students and assist in identifying appropriate activities and partners. Bringing responsibility for the internship assignment and monitoring into the department, and increasing collaboration with agribusiness partners seems to be in order. Collaborative review and revision, including student representatives, would permit all stakeholders to gain more from the internships. Moreover, the collaboration could result in new partnerships and cross-fertilization among stakeholders. The department's programs would gain greater visibility, helping Makerere recruit top-notch candidates.

### **Course Management and ICT**

Increasingly, institutions of higher education are using online course management systems to improve instruction and information dissemination. Online storage of instructional materials is available through Makerere University's library website. The Makerere University E-learning Environment (MUELE) offers the following options for engaging students in participatory learning: (1) depositing reading assignments, course outlines, presentations, handouts, links to reading resources, general notices and class schedules, (2) setting up online debates by students on current issues, (3) depositing recorded lectures/demonstrations by other instructors from the private sector, (4) receiving assignments from students and (5) depositing relevant video recordings. Mirroring this material on the SAS servers would enhance the viability of this paperless alternative to information access.

The Head of DANRE has to step out of the building to make or receive telephone calls. This is due to the poor communication infrastructure at the School of Agricultural Sciences (SAS) in the College of Agriculture and Environmental Sciences (CAES). Increasing both the number of wireless access points and available bandwidth should be explored to improve communication for students and faculty. Faculty and the majority of SAS students have access to a mobile phone and there is a plethora of VOIP (Voice Over Internet Protocol) applications that both students and faculty could use – these include Viber, Whatsapp, Google Chat and others. Viber allows calls from one mobile phone to another. Google Chat allows calls from a mobile phone to a computer. Access to the Internet<sup>12</sup> might be enhanced through the expansion of the school's wireless network.<sup>13</sup> Many students do have smart phones and they would have access to some Internet resources through their phones through the wireless system.

Discussions with the DANRE students, however, indicated that there was limited use of ICT tools for engaging them in the learning activities. The most prevalent methods of delivery include lectures, field experiences, and sharing with colleagues and lecturers. One reason for this is the lack of ICT infrastructure. The graduate and undergraduate students' computer rooms have 2 and 32 desktop computers respectively – implying very high student to computer ratios. Graduate students are not allowed access to the SAS Computer Lab. There are no provisions made for professional maintenance of the computers in DANRE's graduate student computer lab. It could be expected, however, that graduate students would have their own lap tops.

Comparatively, the SAS undergraduate computer lab is quite respectable. However, open access to the computer lab is constrained by limited operating hours and frequent class use during those operating hours. As to students having access to laptops as an alternative to the computer lab, one BABM instructor reports that only about 5 out of her 80 BABM students have laptops.

### **DANRE Faculty SWOT Analysis**

In the interests of gaining insights, stimulating faculty reflection, and saving data collection time, DANRE faculty members were asked to complete a Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis form individually as a homework assignment. What follows is a compilation and synthesis of individual faculty SWOT assessments.

The SWOT analysis revealed a range of concerns and perspectives on the DANRE's ABM programs. The ABM programs are perceived as highly relevant to national priorities.

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<sup>12</sup> Reliability and quality of the internet access is problematic.

<sup>13</sup> The School of Agriculture Sciences (SAS) does have a good hard wired ether net system in place.

Consequently, students and employers alike appreciate this program which attracts over 60 students each year. The ABM programs are supported by a highly qualified faculty (13 of 20 have PhDs), including a core faculty in agribusiness and a commitment to quality teaching. Some are optimistic about the opportunities for the program to grow and upgrade their circumstances. However, the majority of faculty members are trained as agricultural economists with limited expertise in agribusiness and instruction is more theoretical than practical in orientation.

The internship program is weak, partly due to the inadequate engagement with stakeholders. The use of entrepreneurs and other agribusiness leaders in the instructional program has yet to be exploited. A plus is the school farm at Kabanyolo, but the plans presented to exploit this potential have not been implemented. Nevertheless, the program has access to lecture rooms, office space and a computer lab, although these are not fully up to standards. Indeed, these faculty members believe that the ABM programs have a solid foundation and a core of resources to build upon, but there is also the recognition that they may not be strong enough for the challenges the programs face. This has an impact on the morale of some faculty members and not all are willing to fully commit to the program, particularly if better professional opportunities present themselves.

DANRE ABM programs exist in an expanding economic environment. Uganda is building an enabling policy environment conducive for agribusiness and value chain development. Consequently, there is high demand for agribusiness courses among professionals and incoming students. DANRE is well placed to supply the training to respond to this demand. However, the low esteem in which agriculture is held within this new economy means that often the best students are not applying to their programs.

The promising environment is also encouraging other training providers to enter the market attracting agribusiness students and collaborators. These threats are coming from both within and outside of Makerere University. Currently university policies, as well as low and unstable funding streams restrict DANRE's quick and flexible response to the growing opportunities. Nevertheless, growth opportunities abound nationally, regionally, and globally; and there are many potential collaborators ready to partner with faculty in the program.

### **DANRE Faculty Action Planning**

After providing an overview of our preliminary findings, we asked DANRE faculty members to brainstorm a set of 'next step' activities for an action plan to up-grade and enhance the DANRE's institutional capacity to conduct its agribusiness and PhD programs. A group of faculty members met and divided into two working groups. A listing of over 30 'next steps' was made. From this list the two working groups selected key items to develop as part of an action plan

with specific objectives and indicators of impact to track progress in achieving them. The listing and associated action plan can be found in Appendix A.

Clearly the DANRE is concerned with the sustainability of their department and its programs. Finding new and sustainable sources of funding drives all of their activities. All faculty members echoed this sentiment and they are fully prepared to seek additional funds through grants and other mechanisms. They elaborated specific objectives and indicators for selected 'next step' activities from the listing and then ranked them by priority. The following lists those 'next step' activities in order of priority (number of votes in parentheses) that have been incorporated into a set of feasible and readily implementable tasks.

1. Improve business plan development (8)
2. Conduct a curriculum review (7)
3. Enhance PhD curriculum through improved courses (7)
4. Re-tool staff in critical agribusiness skills (7)
5. Increase staff motivation (7)
6. Involve private sector and government more fully in DANRE activities (6)
7. Revive the Journal of the Ugandan Agricultural Economics Association (UAEA) (5)
8. Revive the Agricultural Policy Research and Analysis Center (4)
9. Conduct tracer studies for DANRE graduates (4)
10. Increase the duration of internship programs (4)
11. Proactively market DANRE programs (4)
12. Departmental assessment (3)
13. Identify agribusiness organizations for internship placements (2)
14. Screen the quality of entering students (2)

### **Recommended Next Steps for DANRE**

Building on the insights, priorities and concerns of DANRE faculty, students, and other stakeholders, we recommend a 3-pronged strategy to upgrade and enhance the DANRE program curricula for agricultural policy, entrepreneurship, and agribusiness management skills. The key component is the re-organization and mobilization of the DANRE faculty around policy and agribusiness issues. The first prong of the strategy involves strengthening the linkages with agribusiness stakeholders to engage DANRE faculty and students in their policy and agribusiness priorities. The second enhances the policy and agribusiness orientation of DANRE degree programs. The third upgrades faculty delivery of those programs through the introduction of more active learning techniques.



## 1. Strengthen linkages with agribusiness stakeholders

- a. **Establish department level internship coordinator:** The department needs to institutionalize its control over their relationships with farm organizations and other agribusinesses along the value chains, government offices concerned with policies affecting agribusiness development, and the financial actors providing the capital for this development. The DANRE internship coordinator's primary responsibilities would include establishing an agribusiness and policy internship program, managing partner relationships, and coordinating the placement and monitoring of DANRE students.
- b. **Build collaboration with agribusiness networks:** To be successful and sustainable the internship program needs to be integrated into a solid network of policy and agribusiness actors in the Ugandan agricultural sector. Although DANRE faculty already have many of these connections at the individual level, building this network will take some effort to establish the institutional relationships leading to the re-constitution of the DANRE Agribusiness Advisory Council (ACC). The confidence and commitment of all partners needs to be mutual. To establish this foundation *InnovATE* proposes to facilitate a series of three workshops to be held over the course of a year.
  - The first workshop would address issues of topical concern to agribusiness leaders. Two or three policies and key business practices should form the focus of discussions. Considerable planning should go into the preparation of this workshop in order to ensure broad-based participation across the agribusiness sector. There are two objectives here: (1) to learn about significant current agribusiness priorities and policy issues; and (2) to develop mutual understandings that lead to further engagement.
  - The second workshop would involve the development of internship partnerships around internship roles and practices that would support both DANRE program objectives and agribusiness and policy actors' organizations. An important output of the workshop would be a mutually agreed upon protocol that outlines the general expectations of both partners. Individual internship arrangements could later be established within this protocol, although the details would likely vary from one arrangement to another (numbers of students, specific student roles, learning objectives, etc.). This action item is dependent upon the DANRE faculty's internal discussion of academic criteria concerning the implementation of internships.
  - The third workshop would be held at the end of the first year to review progress in developing the DANRE's agribusiness network. The strengths and weaknesses of the relationships and implementation procedures should be evaluated. Revisions to the protocol based on experiences during the year could be made at this time. Network partners may also plan for future workshops as well as re-establishing the ACC. This will ensure DANRE relevance as well as to apprise DANRE faculty of new developments, particularly in the policy arena that they should be integrating into to their academic programs.

- c. **DANRE evaluation of internship program options:** The DANRE faculty need to determine the key elements in an internship program for each degree program. This would include learning objectives, duration, intern evaluation, etc. In discussions with agribusiness leaders, policy makers, faculty and students it was determined that an internship was a key component in the preparation of agribusiness professionals. However, considerable variability in programs was noted. Differences in styles and format, quality control issues, partnering and placement protocols, and duration of internships require examination. While these differences may not interfere with implementation of a quality internship, the principles of best practices should be established and a coherent voice prepared for discussions with agribusiness actors. *InnovATE* proposes to hold a workshop with DANRE faculty to introduce best practices for internships and facilitate discussions of how they may be adapted for DANRE.

## 2. Enhance and upgrade agribusiness and policy curricula

- a. **Self-assessment of agribusiness and agricultural economics degree programs:** The Bachelors and Masters Programs in agribusiness management have not been reviewed since they were first established over a decade ago. Increasing concerns over the quality and policy relevance of agricultural economics Masters and PhD programs have been raised. The time is ripe for establishing a methodology for routine program assessment. Self-assessment is the foundation for program accreditation and involves review of mission, curriculum, program organization and management, faculty competencies, student success, and institutional support. In conjunction with increased understanding of agribusiness and policy needs in the sector, significant improvements can be expected. *InnovATE* proposes to coordinate this activity, applying a methodology that has been adapted across Africa for this purpose. There are two primary objectives of this activity: (1) to identify curriculum weaknesses leading to re-design and/or organization of courses offered; and (2) to establish a framework and baseline for periodic re-assessment.
- b. **Conduct tracer studies of DANRE graduates:** To assure the delivery of curriculum that provides relevant and appropriate human capital to the agribusiness sector the DANRE needs to document the use and relevance of the knowledge, skills, and attitudes that they are providing. This activity extends the curriculum assessment into the workplace. What exactly becomes of graduates? Are they finding jobs in the sector? Do the KSAs enable graduates to find employment and develop valued careers? Faculty are in contact with many graduates, but no systematic study has been conducted to assess the overall impact of their programs. *InnovATE* proposes to collaborate with DANRE faculty in the implementation of this study.
- c. **Explore options for external reinforcement through collaboration:** The DANRE does not have sufficient faculty and variety of competencies to support a full agricultural economics program at the Masters' and PhD levels. In order to move forward with strengthening these programs, partnering with others appears to be the most promising

path. Building on the findings of the self-assessment, *InnovATE* proposes to facilitate the identification and exploration of linkages with on-going programs within Makerere and within the region that would provide complementary training alternatives. Already identified in this regard is the Policy and Development Economics Department in Makerere's School of Business, the regional PhD program offered by the African Economics Research Consortium in Nairobi, and the regional Masters' degree program in South Africa. There also may be some options available through collaboration with private sector organizations (e.g., guest lecturing, seminars, policy workshops, and the advisory council).

### 3. Introduce Scholarship of Teaching and Learning (SOTL) Approaches

- a. **Conduct workshops within the area of teaching and learning:** One of the key challenges faced by the DANRE is that of large classes and pervasive use of lecturing to transfer knowledge, skills and attitudes. While class size is a major impediment to high quality instruction, there are techniques and teaching tools that can be used to improve student learning outcomes. *InnovATE* proposes to facilitate the introduction and implementation of tools and instructional approaches developed by the Scholarship of Teaching and Learning Movement. The objective of these exercises is to provide simple techniques that faculty and graduate students can apply immediately in their classrooms. *InnovATE* will facilitate workshops addressing:
  - Innovative approaches for evaluating teaching and learning;
  - Strategies and tools for implementing modern teaching methods such as active learning, cooperative learning, and problem based learning; field experience development and supervision;
  - Techniques for strengthening verbal and written communication in agriculture; and
  - Lessons for using ICT for participatory engagement.
- b. **Build DANRE faculty capacity to enhance student entrepreneurial and interpersonal skills:** Since many of the students in the DANRE will pursue positions after graduation that require them to manage people and resources, it is important that they are introduced to leadership and entrepreneurship skills. Faculty felt that they were not the most valuable role models. *InnovATE* proposes to work with the DANRE faculty and graduate students to build capacity in this regard by identifying and developing learning opportunities that increase entrepreneurial, leadership and interpersonal skills.
  - Business simulations and case studies. Students expressed a desire to work in teams to develop business plans, products, services, etc. that could be pursued as real ventures. The case study methodology used early in program development could also be revived as an active learning tool.
  - Leadership training, potentially in collaboration with Makerere University's Leadership Management program. Training themes could include: leadership in a global society, leading teams through change, partnership and volunteerism, leadership foundations for diverse contexts, and leading social change.

- c. **Invest in expanded wireless infrastructure:** While the DANRE and Makerere University as a whole are severely challenged by power interruptions and poor Internet connectivity, some small investments and training can improve the usability of the current infrastructure. The focus of this activity would be to enhance the local area network of the School of Agricultural Sciences (SAS). *InnovATE* proposes to provide the technical expertise to plan and upgrade the existing infrastructure. The objective of this activity is to create increased opportunities for both faculty and students to develop skills necessary for the expansion and modernization of the agribusiness sector.
- Explore the potential of increasing the number of wireless relays and adding a central server for local access of e-resources
  - Upgrade the SAS servers to provide on-line storage capacity
  - Upload DANRE courses materials (readings, exercises, etc.) to the Makerere University E-Learning Environment (MUELE) and mirror those e-resources on the SAS's server to increase student access to course materials
  - Promotion of other digital data bases and learning tools

## Appendix A: List and Prioritization of Next Step Actions

### Group 1 (2 men, 2 women, more senior people)

1. Curriculum review with practical orientation and stakeholder involvement
2. Conduct tracer studies of all students every 5 years
3. Revive the Agribusiness Advisory Committee to act as a platform to engage the private sector
4. Proactively market our programs (visiting schools and exhibiting our products at national/international fora)
5. Seek for scholarships (MS and PhD)
6. Develop case studies for teaching purposes
7. Staff re-tooling for critical agribusiness skills
8. Identification and engagement of guests lecturers (exposure to agribusiness professionals)
9. Identify agribusinesses for internship procurement
10. Engage students to develop and implement viable business plans
11. Develop a PhD program with courses and research
12. Motivate staff through supervision and follow-up of students in agribusiness for timely implementation of activities
13. Establish practical oriented post grad (6-9 months) certificate/advanced diploma program for agribusiness graduates in their 4<sup>th</sup> year to enable development of business skills
14. Revive the journal/Uganda Agricultural Economics Association to improve dissemination, communication, writing skills
15. Revitalize the policy center to conduct policy related research and improve visibility

### Group 2 (3 men, 1 woman, mid-career, junior people)

1. Actively follow up on the internship program in the following manner:
  - a. Get contacts with private sector
  - b. Wide spectrum of host private sector agribusiness firms
  - c. Involve students to pick from the wide spectrum of firms
  - d. Feedback about internships among students and departments
  - e. Lobby for funding (more) to facilitate internships
2. Self-assessment of the departmental resources and competencies
  - a. Existing materials
  - b. Training and retooling of staff
  - c. Recruit specialized staff
3. Involve private sector resource persons in instruction of some topics
4. Invitation of motivational speakers
5. Consider dropping special project and replacing it with a business plan
6. Curriculum review (relevance of course units students do) remove redundant/repeated units
7. Screening student to get the best and well interested students
8. Reduce the theoretical and increase practical component of training
9. Hold business plan/writing competitions
10. Staff motivation for excellence in teaching/service to students

## Next Step Action Items

### **ACTION: Business Plan [8 votes]**

#### Objectives:

1. To give relevant skills to students in business plan development
2. To eliminate drudgery and free up valuable time for developing business skills

#### Indicator of Impact:

1. Fundable business plan for each final year student by completion time
- 

### **ACTION: Curriculum Review [7 votes]**

#### Objectives:

1. To remove redundant course units
2. Introduce relevant course units
3. Review the course content

#### Indicator of Impact:

1. A relevant curriculum in place by 2015
- 

### **ACTION: Develop a PhD program by coursework and research [7 points]**

#### Objectives

1. To impart skills - econometrics; quantitative skills and research methods
2. To improve professional training in Agribusiness - marketing, finance, production, management and Entrepreneurship

#### Indicators

1. No of courses developed (ET, QS, RM)
  2. No of courses developed in areas of specialization
  3. No of students enrolled
- 

### **ACTION: Staff re-tooling in critical Agribusiness skills [7 points]**

#### Objectives

1. To equip staff with pertinent skills to enable them handle agribusiness students better
2. To recruit and / or train staff in agribusiness

#### Indicators

1. No of staff re-tooled
  2. No of courses covered
- 

**ACTION: Motivation of staff [7 points]**

Objectives

1. Increase staff productivity
2. Increase staff retention
3. Improve the graduation rate (especially post graduate)

Indicators

1. Timely completion of assignments (reports, marking, thesis reading)
  2. No of staff leaving
  3. No of staff moving through the academic hierarchy
  4. Increase on time graduation rate to 80%
- 

**ACTION: Private sector and government involvement [6 votes]**

Objectives:

1. To develop and strengthen links with the private sector and government
2. To keep abreast with emerging issues in agribusiness

Indicators of Impact:

1. Number of contacts developed
  2. Number of private sector and government factors involved in instruction in the department
  3. Database of key emerging issues to be addressed in instruction and seminars
- 

**ACTION: Revive the journal / UHEA [5 points]**

Objectives

1. To improve research dissemination
2. To improve communication and writing skills
3. To increase visibility of DANRE (including Agribusiness and Ag Econ Professionals)

Indicators

1. No of issues of journals, no of workshops/seminars
  2. No of staff publishing
  3. No of students publishing
- 

**ACTION: Revitalize the policy Centre [4 Points]**

#### Objective

1. To improve policy related research
2. Engage the policy makers, planners and stakeholders to formulate relevant agribusiness related policies
3. To mobilize funds for research

#### Indicators

1. No of research projects funded
  2. No of policy briefs
  3. Amount of money mobilized
- 

**ACTION:** Conduct tracer studies for our graduates every 5 years **[4 Points]**

#### Objectives

1. To improve the relevance of our graduates
2. To be appraised on the performance of our graduates
3. Acquire information to improve/develop curriculum
4. Improve linkages/collaboration/networking

#### Indicators

1. No of graduates covered / traced
- 

**ACTION:** Increase Internship Duration **[4 votes]**

#### Objectives:

1. Expose students to diverse internship experiences
2. Enhance quality of internship supervision

#### Indicators of Impact:

1. Two internship periods, end fo first and second year, total of 20 weeks by 2015
  2. Student:staff ratio reduced by 50% by 2015
- 

**ACTION:** Proactively market our programs **[4 points]**

#### Objectives

1. Raise awareness in terms of our programs
2. To increase enrolment in the programs

#### Indicators

1. No of schools visited, exhibitions attended; No of students enrolled in our programs



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**ACTION: Department Assessment [3 votes]**

Objectives:

1. To establish existing competencies of staff, to establish sources of relevant institutional materials and how to access them

Indicators of Impact:

1. Sources of instructional materials established by March 2014
  2. Staff assessment forms developed and filled
  3. Assessment report developed
- 

**ACTION: Identify agribusiness organizations for internship placement [2 points]**

Objectives

1. To place students in all the agribusinesses in the VC
2. To enable students explore employment opportunities in agribusiness / create jobs

Indicators

1. Skills gained; No of students attached to agribusiness firms/organizations; No of graduates employed by agribusiness firms; No of grads in self-employment in agribusiness
- 

**ACTION: Screening of Students [2 votes]**

Objective:

1. To admit qualified and interested students

Indicators of impact:

1. Admission criteria reviewed by March 2014
2. Improved performance and grades
3. Positive feedback by host firms

## Appendix B: Agribusiness Stakeholders

### 1. Uganda Co-operative Alliance

Uganda Cooperative Alliance (UCA) Ltd was formed in 1961 by co-operative unions to act as the apex body of the co-operative movement in Uganda. Its roles include advising, regulating, re-organizing, and revamping the numerous dormant cooperatives in the country as well as lobbying and advocacy for improvements on behalf of farmers.

**Interviewee:** Mr. Samuel Magala Sentumbwe

**Contact:** [samuel.sentumbwe@gmail.com](mailto:samuel.sentumbwe@gmail.com), [ssentumbwe@uca.co.ug](mailto:ssentumbwe@uca.co.ug), [ucainfocen@uca.co.ug](mailto:ucainfocen@uca.co.ug)  
**URL:** [www.uca.co.ug](http://www.uca.co.ug)

### 2. National Union of Coffee Agribusinesses and Farm Enterprises (NUCAFE)

Founded in 1995 by Mr. Joseph Nkandu, NUCAFE's mission is to establish a sustainable market-driven system of coffee farmer enterprises/organizations which are empowered to increase their household incomes through enhanced entrepreneurship and innovation.

**Interviewees:** Mr. Joseph Nkandu and Mr. Deus Nuwagaba

**Contact:** +256-414-236199  
**URL:** [www.nucafe.org](http://www.nucafe.org)

### 3. Uganda Seed Trade Association (USTA)

The USTA is an organization of 27 members that lobby and advocate for the needs of the farm input sector, particularly seeds, at the national and regional level.

**Interviewee:** Mr. Chris Ibyisintabyo, Executive Officer

**Contact:** +256-312-518095  
**URL:** [www.usta.org](http://www.usta.org)

### 4. Uganda Coffee Federation (UCF)

UCF is an association of coffee exporters, coffee processors, farmers, and companies that supply equipment and supplies to coffee exporters and processors, clearing and forwarding companies, insurance companies, banks and international coffee trading houses in Europe. Its vision is to have sustainable coffee production and trade in Uganda and its mission is to engage and work with all stakeholders to promote sustainable coffee production and trade.

**Interviewees:** Ms. Betty Namwagala, Executive Director and Mr. Samson Omong, Program Manager

**Contact:** +256-414-343678 or [uctf@ugandacoffeetrade.com](mailto:uctf@ugandacoffeetrade.com)  
**URL:** [www.ugandacoffeetrade.com](http://www.ugandacoffeetrade.com)

## **5. CropLife**

CropLife Uganda is a federation representing the plant science industry. Member companies are committed to sustainable agriculture through innovative research and technology. Their mandate is to promote the safe and responsible use of agrochemicals.

**Interviewee:** Mr. Joseph Stephen Matovu, Chairman

**Contact:** +256-787-337185 or [matesvo@gmail.com](mailto:matesvo@gmail.com) or [crop.life49@gmail.com](mailto:crop.life49@gmail.com)

URL: [www.croplifeafrica.org](http://www.croplifeafrica.org)

## **6. Agribusiness Initiative Trust (aBi)**

The aBi is part of an EU-funded initiative emphasizing private sector support. The focus is on enterprise development, market- and product diversification with organic farming as an important element. The initiative applies the value chain approach faced by agribusinesses and focuses on five value chains.

**Interviewee:** Mr. Asaph Besigye, Financial Services Development Consultant

**Contact:** +256-772-460704/704-596649 or [asaphbesigye@yahoo.com](mailto:asaphbesigye@yahoo.com)

URL: <http://uganda.um.dk/en/danida-en/growth%20and%20employment/u-growth>

## **7. INSPIRED International**

This company is a consultancy dedicated to the research and development of strategies and products geared toward integrating large and small businesses into the agribusiness economy. Their products include value chain analysis, systems and business planning for institutions, financial product development, risk management strategies, training, and mentoring.

**Interviewee:** Mr. Patrick Oyee, Financial Consultant for Value Chains

**Contact:** +256-772-504616 or [patrickoyee@yahoo.com](mailto:patrickoyee@yahoo.com)

URL: [www.inspired-international.com](http://www.inspired-international.com)

## **8. Kilimo Trust**

Kilimo trust delivers regional solutions to local agricultural problems by designing and implementing sector development programmes which respond to market opportunities across the region. They do this by providing thought leadership – create, advance, and share ideas – on East African Community regional approaches to agriculture for wealth creation and food security.

**Interviewee:** Mr. Michael K. Kairumba, Associate Director, Programs

**Contact:** +256-755-744172 or [MKairumba@kilimotrust.org](mailto:MKairumba@kilimotrust.org)

URL: [www.kilimotrust.org](http://www.kilimotrust.org)

## **9. Mr. Paulo Nsibuka Luswata, Independent Financial Consultant**

Mr. Luswata consults for banks interested in agricultural financing, particularly micro-finance.

**Contact:** +256-772-601380 or [paololuswata@gmail.com](mailto:paololuswata@gmail.com)

## **10. USAID Uganda Feed the Future Commodity Production and Marketing Activity**

Mr. Steve McCarthy, Chief of Party

**Contact:** +256 776 666 831 or [smccarthy@ftfcpm.com](mailto:smccarthy@ftfcpm.com)

## **11. Economic Policy Research Center (EPRC)**

The EPRC is a think tank specializing in economics and development policy-oriented research and policy analysis. It was established in 1993 to fill fundamental voids in economics research, policy analysis, and capacity building for effective in-country contributions to Uganda's policy processes, supporting the formulation, implementation, monitoring and evaluation of government policies.

**Interviewees:** Mr. Lawrence N. Bategeka, Senior Research Fellow; Dr. Swaibu Mbowa, Research Fellow; Dr. Ezra Munyambonera, Research Fellow

### **Contacts:**

Mr. Bategeka, +256-772-4111921 or [bategeka@eprc.co.ug](mailto:bategeka@eprc.co.ug)

Dr. Mbowa, +256-773-196544 or [smbowa@eprc.co.ug](mailto:smbowa@eprc.co.ug)

Dr. Munyambonera, +256-785-741648 or [emunyambonera@eprc.org](mailto:emunyambonera@eprc.org)

URL: [www.eprc.or.ug](http://www.eprc.or.ug)

## **12. Ministry of Finance, Planning and Economic Development**

The unit interviewed deals with consumer prices, trade, and financial statistics important to agribusiness.

URL: [www.finance.go.ug](http://www.finance.go.ug)

**Interviewees:** Mr. Chris Ndatira Muzika, Director of Macroeconomic Statistics, and Mr. Patrick Okello, Principal Statistician

### **Contact:**

Mr. Chris Ndatira Muzika, +256 414 706 066 or [chris.mukiza@ubos.org](mailto:chris.mukiza@ubos.org)

Mr. Patrick Okello, +256 414 321 472 or [okello@gmail.com](mailto:okello@gmail.com)

## **13. Ministry of Agriculture, Animal Industry and Fisheries**

The unit interviewed was the National Agricultural Advisory Service (NAADS) planning unit.

URL: [www.agriculture.go.ug](http://www.agriculture.go.ug)

**Interviewees:** Mr. Samuel Semanda, Commissioner Agricultural Planning, Mr. Richard Ndikuryayo, Assistant Commissioner, Agricultural Statistics; Mr. Deus Muhewezi, Assistant Commissioner, Agribusiness; Mr. Godfrey Wakula Kivunike

### **Contacts:**

Mr. Samuel Semanda, +256-772-590416 or [samsema@infocom.co.ug](mailto:samsema@infocom.co.ug)

Mr. Richard Ndikuryayo, +256-772-496595 or [ndikusenior@yahoo.co.uk](mailto:ndikusenior@yahoo.co.uk) or [ndiku@mglisd.co.ug](mailto:ndiku@mglisd.co.ug)

## Appendix C: Makerere University Stakeholder Interviews and Focus Groups

### Administration

Prof. Bernard Bashaasha, Principal, CAES  
Dr. Gabriel Elepu, Head of Department (HOD), DANRE

Both administrators were interviewed individually in their offices by *InnovATE* team members.

### DANRE Faculty

#### Focus Group Attendees (Day 1)

Frederick Bagawambe	Norman Kwikirize
Elizabeth K. Balirwa	Frank Matsiko
Jackline Banabama-Wabbi	Lwiza Florence Nsereko
Gracious M. Diro	Dick S. Serunkuume
Gabriel Elepu, HOD	Alex Tatwangive
Theodora S. Hyuha	

Simon Byabagambi, USAID/Uganda

Nine full-time faculty members (out of fifteen who were on campus at the time of the exercise) and one part-time instructor attended a 3 hour focus group discussion on Day 1; there four women and six men in attendance for the full session. The HOD introduced the exercise, explaining how important it was to the department's own internal quality control and future growth. He returned to his office after the introductions, as he did not want his presence to interfere with a free exchange of ideas. There were two associate professors, one senior lecturer, five lecturers, one assistant lecturer, and one part-time instructor (PhD candidate) contributing to the discussion.

#### SWOT Analysis and Action Planning Exercise Attendees (Day 2)

Frederick Bagawambe	Norman Kwikirize
Elizabeth K. Balirwa	Stephen Lwase
Jackline Banabama-Wabbi	Frank Matsiko
Gabriel Elepu, HOD	Lwiza Florence Nsereko
Theodora S. Hyuha	

Simon Byabagambi, USAID/Uganda

Nine faculty members (3 women and 6 men) attended the SWOT analysis and action planning exercise on Day 2, the HOD, one associate professor, one senior lecturer, three lecturers, one assistant lecturer, and two part-time instructors (PhD candidates). The duration of the exercise was about 3.5 hours, after which time the *InnovATE* team invited the faculty to a group lunch and informal discussions continued.

DANRE Faculty Members were also offered individual interviews to express views privately, but were very satisfied with the group process and thus did not avail themselves of that opportunity. All team members interacted informally with faculty and students throughout the two days spent on campus.

## Students

### Undergraduate Focus Group

The focus group was advertised by word-of-mouth and prominently posting flyers around the CAES building. Thirty-six undergraduate students (17 women and 19 men) attended a 90 minute focus group discussion. A variety of ages and backgrounds were noted, with several students having extensive prior experience in agriculture, including teaching at agricultural colleges and consulting. About 60% of the students reported having come from a farming family or otherwise had a background in agriculture. About 40% reported that agribusiness/agriculture was their first-choice major. Twenty-seven students were enrolled in the agribusiness management program, five in agriculture, and four in rural economy. Ten students were in the first year of studies, eight in the second year, thirteen in the third year, and five in the fourth year (all of them offering agriculture, which is a four-year program).

Drs. Taylor and Anderson remained an additional 30 minutes, answering specific student questions about entrepreneurship and professional preparation.

### Graduate Student Focus Group

Nine graduate students attended a 90 minute focus group discussion (3 women and 6 men). Four were in the first year of the MABM, while four were in the second year. One student was in the second year of the PhD program and was also teaching part-time at DANRE.

### Gender Issues Focus Group

About sixteen women attended a 90 minute focus group discussion dealing with issues specific to them. Three were at least two graduate students, three undergraduates, a librarian, two assistant lecturers, three lecturers, and one associate professor. Some were present for only part of the session and did not sign-in, thus we have not captured everyone's affiliation. Attendees came from both CAES and the business school.

## Appendix D: Focus Group Questions

### Employers and other Stakeholders

Hello, we're a team from USAID's innovATE project that has been invited to Uganda to assess the quality of agribusiness professionals produced by the Department of Agribusiness and Natural Resource Economics at Makerere University. The key goal is to learn more about how agribusiness professionals' training and education can be improved. We'd like to talk with you about four themes:

1. Do you hire, manage, or collaborate with agribusiness professionals?
2. What skills, knowledge, and attitudes should agribusiness professionals have when first hired?
3. What skills, knowledge, and attitudes do they normally have when they are first hired?
4. What skills, knowledge and attitudes do new employees generally lack when they are first hired?

We'd like to keep the discussion informal and follow your interests and reasoning. Occasionally, we may ask for some specific information or clarification of some points to improve our understanding of your concerns.

*< Introduce ourselves individually around the table, and then have the host/interviewee introduce him/herself (including formal training).>*

*< Go through the themes one at a time and prime the interviewee with a prompt question or two; follow-up as appropriate to complete the theme (this will be dependent on the expertise and priorities of the interviewee).>*

*<Take notes and make observations in your usual note taking fashion.>*

*<Get answers for those questions that you can and move on to others.>*

## University Faculty

Hello, we're a team from USAID's innovATE project that has been invited to Uganda to learn how Department of Agribusiness and Natural Resource Economics at Makerere University prepares agribusiness professionals to enter the workplace. We'd like to talk with you about your personal thoughts on the knowledge, skills, and attitudes obtained by students as they prepare to become agribusiness professionals.

I'd like to keep the discussion informal and get your honest opinion on certain topics. Occasionally, I may ask for some specific information or clarification of some points to improve our understanding of your thoughts.

*< Introduce ourselves individually around the table, and then have the host/interviewee introduce him/herself (including formal training).>*

**Primer** – Used to break the ice and get participants into a free-flow cognitive-verbal process.

Before we get started, I would like to do a very quick activity. I would like for you to visualize a place that you enjoy visiting. You may close your eyes if it helps you to clearly see this place. What do you see in front of you? To your right? To your left? What do you smell at this place? What do you hear at this place? What do you feel?

I will say a word and I want you to say out loud the first thing that comes to mind. Do not think about it; just say it out loud. "Uganda." "Agriculture." "Business." "Makerere." "Education."

Great. We will now discuss your thoughts on the preparation of agribusiness professionals. Again, I want you to feel free to speak openly.

*<Take notes that include observations.>*

*<Get answers for those questions that you can and move on to others.>*

1. What would you like your students to know and be able to do when they leave Makerere to become agribusiness professionals?
2. What do you do to make sure that the students know and are able to do these things?
3. What are the knowledge, skills, and attitudes that you would like your students to have that they do not have upon graduation?
4. What do you need in order to prepare students to learn or do these things?



## Students

Hello, we're a team from USAID's innovATE project that has been invited to Uganda to learn how Department of Agribusiness and Natural Resource Economics at Makerere University prepares agribusiness professionals to enter the workplace. The key objective is to learn more about how agribusiness professionals' training and education can be improved. We'd like to talk with you about your personal thoughts on the knowledge and skills you have obtained in preparation for becoming agribusiness professionals.

I'd like to keep the discussion informal and get your honest opinion on certain topics. Occasionally, I may ask for some specific information or clarification of some points to improve our understanding of your thoughts.

*< Introduce ourselves individually around the table, and then have the host/interviewee introduce him/herself (including formal training).>*

**Primer** – Used to break the ice and get participants into a free-flow cognitive-verbal process.

Before we get started, I would like to do a very quick activity. I would like for you to visualize a place that you enjoy visiting. You may close your eyes if it helps you to clearly see this place. What do you see in front of you? To your right? To your left? What do you smell at this place? What do you hear at this place? What do you feel?

I will say a word and I want you to say out loud the first thing that comes to mind. Do not think about it; just say it out loud. "Uganda." "Agriculture." "Business." "Makerere." "Education."

Great. We will now discuss your thoughts on your preparation as agribusiness professionals. Again, I want you to feel free to speak openly.

*<Take notes that include observations.>*

*<Get answers for those questions that you can and move on to others.>*

1. Why did you choose to attend Makerere to become agribusiness professionals?
2. When you first began your studies here, what did you want to learn and be able to do?
3. In terms of your readiness for a job, what do you feel confident that you are able to do now?
4. What learning activities did you engage in that will help you get a job?
5. What do you want to do after graduation?

## Women (Faculty & Students)

Hello, we're a team from USAID's innovATE project that has been invited to Uganda to learn how the Department of Agribusiness and Natural Resource Economics at Makerere University prepares agribusiness professionals to enter the workplace. We'd like to talk with you about your personal thoughts on any issues that impact on the preparation of women agribusiness professionals.

We'd like to keep the discussion informal and get your honest opinion on certain topics. Occasionally, we may ask for some specific information or clarification of some points to improve our understanding of your thoughts.

*< Introduce ourselves individually around the table, and then have the host/interviewee introduce him/herself (including formal training).>*

**Primer** – Used to break the ice and get participants into a free-flow cognitive-verbal process.

Before we get started, I would like to do a very quick activity. I would like for you to visualize a place that you enjoy visiting. You may close your eyes if it helps you to clearly see this place. What do you see in front of you? To your right? To your left? What do you smell at this place? What do you hear at this place? What do you feel?

I will say a word and I want you to say out loud the first thing that comes to mind. Do not think about it; just say it out loud. "Uganda." "Agriculture." "Children." "Makerere." "Education."

Great. We will now discuss your thoughts on the preparation of women agribusiness professionals. Again, I want you to feel free to speak openly.

*<Take notes that include observations.>*

*<Get answers for those questions that you can and move on to others.>*

1. Do you think men and women are treated equally in your institution?
2. Is gender addressed in any of the agribusiness program courses? If so, in which courses?
3. How have you negotiated gender-based obstacles to achieve your goals as an agribusiness professional?
4. What do you perceive as the greatest opportunities for women and girls in your country's agricultural education system and agricultural professions?