



INNOVATIVE AGRICULTURAL RESEARCH INITIATIVE (iAGRI)

ANNUAL PERFORMANCE REPORT (Oct 1, 2014 – Sep 30, 2015)



October 15, 2015

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Cover photo:

A delegation from the Sokoine University of Agriculture (SUA) and iAGRI participated in a study tour on organizational transformation, visiting Egerton University, Kenyatta University, and the Jomo Kenyatta University of Agriculture and Technology (JKUAT). The visit resulted into SUA signing MoUs with the visited universities. The picture is of the MoU signing at JKUAT. From left are: SUA Deputy Vice Chancellor – Administration & Finance Prof Yonika Ngaga, SUA University Council Chairman Mr. Philemon Luhanjo, SUA Vice Chancellor Prof Gerald Monela, iAGRI Director Prof David Kraybill, JKUAT Deputy Vice Chancellor – Academic Affairs Prof. Romanus Odhiambo, JKUAT Registrar – Research, Production and Extension Mr Cyrus Chege Kamau, and JKUAT Deputy Vice Chancellor – Research, Production and Extension, Prof. Esther Murugi Kahangi. (Picture: iAGRI).

DISCLAIMER

The author’s views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development, or the United States Government.

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Annual Report

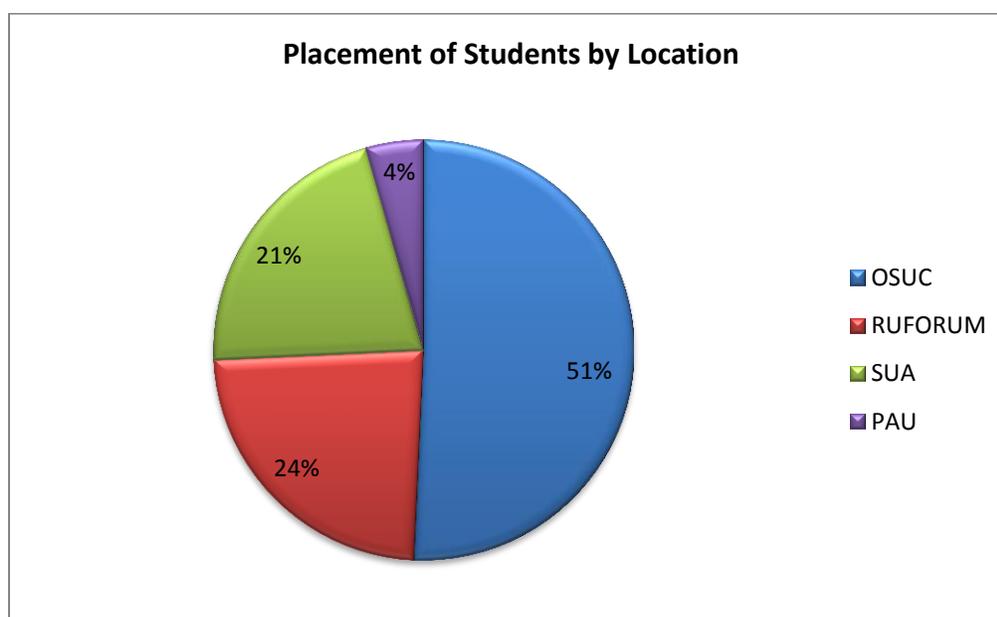
Innovative Agricultural Research Initiative (iAGRI)

October 1, 2014 – September 30, 2015

1. Executive Summary

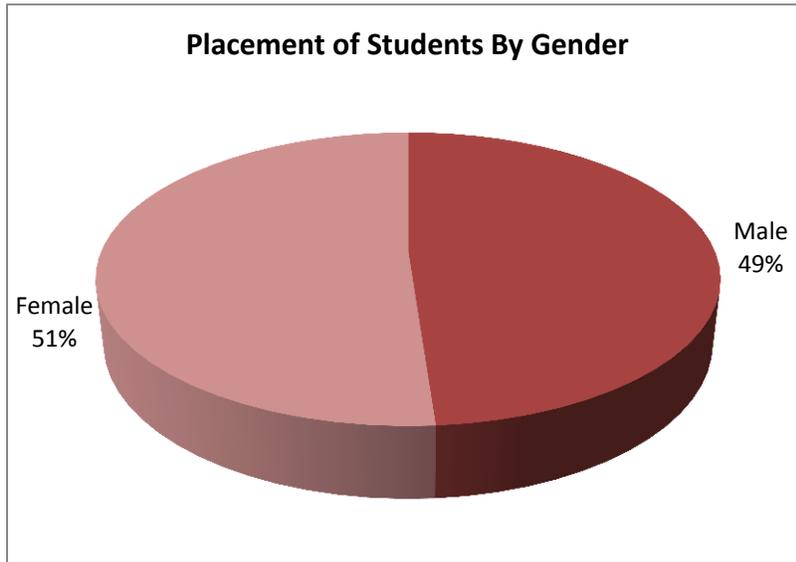
To date, USAID has placed 136 graduate students in degree training programs at universities on three continents (North America, Africa, and Asia) through the Innovative Agricultural Research Initiative (iAGRI). The breakdown of these placements is illustrated in the pie chart below.

Chart 1: Long-Term Training



Considerable progress has been made in achieving the objectives set for iAGRI at its inception which relates to the overall goal of iAGRI. This is to strengthen the capacity of Sokoine University of Agriculture (SUA) and the Ministry of Agriculture, Food Security, and Cooperatives (MAFC) to contribute to Tanzania’s national development goals found in the Tanzanian Government’s Agricultural Sector Development Plan, its Agriculture and Food Security Investment Plan, and its Comprehensive African Agricultural Development Plan. Specific iAGRI objectives are to (1) provide graduate level training to 135 young Tanzanian professionals in fields related to agriculture, with approximately half of this training occurring in the U.S.; (2) promote collaborative research among staff from SUA, MAFC, six U.S. universities forming the Ohio State University Consortium (OSUC), and Global South institutions; (3) strengthen the institutional capacity of SUA to contribute to food security in Tanzania; and (4) strengthen Tanzania’s linkages with U.S. and Global South research and educational institutions.

Chart 2: Students by Gender



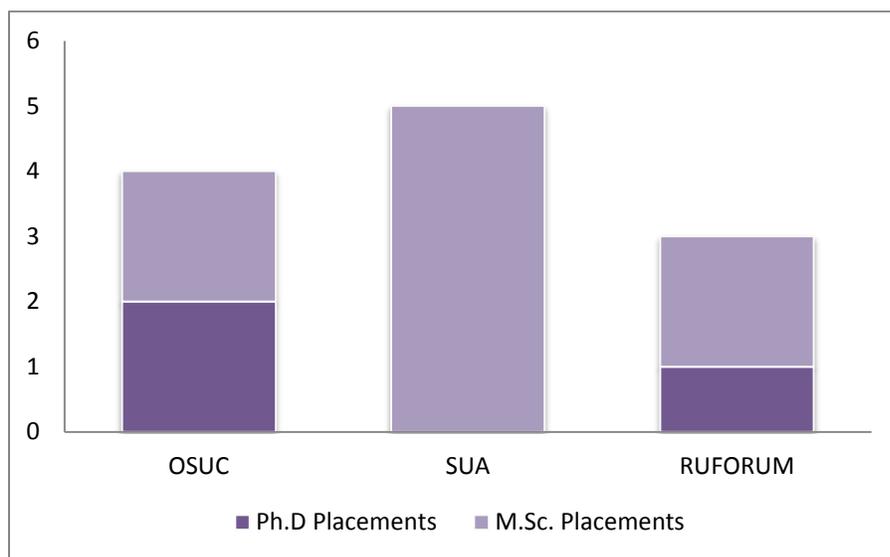
We have also been able to achieve the desired goal of ensuring that at least 50% of the placements are women, which is found in the original cooperative agreement signed between OSU and USAID/Tanzania. As illustrated above, 51% of the placements have been women. As might be expected, considerable variation exists by level of training. Fifty-five percent of all M.Sc. placements were female students, whereas only thirty-seven percent of all Ph.D. placements were females. In part this reflects the reality that many female students have to deal with more pressing family and other personal obstacles. This is particularly true when having to undertake overseas study, and most of the Ph.D. students were placed at OSUC institutions.

Progress toward degree completion is linked to the time of initiation of study programs. All Cohort I students have graduated and are resident in Tanzania. Most Cohort II M.Sc. students have likewise completed their programs and are in Tanzania.¹ Eight of them are awaiting their theses defences. One Ph.D. student from Cohort II has completed his program and has returned to a staff position at SUA. Other students are currently completing their dissertation research. Eight of the 26 M.Sc. placements in Cohort III have completed their programs and are in Tanzania. The remaining students are completing their thesis research. All 45 M.Sc. students in Cohort IV have recently initiated their field research and will be expected to graduate by the end of the coming fiscal year. Two Ph.D. student placements at SUA initiated their programs during the past year.

During the past year, we placed a final Cohort V of 12 students. It consists of 9 M.Sc. placements and 3 Ph.D. placements as depicted in the following bar graph.

¹ Ten B.Sc. placements from Zanzibar who were part of Cohort II are excluded. Three of these students continued their studies at SUA during the previous year. One student originally placed in a Ph.D. program failed her doctoral candidacy exam, but was reclassified as an M.Sc. placement because she received an M.Sc. degree

Chart 3: Placements of Cohort V Students



Nine of the placements were at the M.Sc. level. Five of these were at SUA and all of them were females. Three placements were at the Ph.D. level including two at OSUC member institutions and one at a RUFORUM member institution.

Consistent with the iAGRI focus on strengthening the capacity of SUA and MAFC to deal with food security in Tanzania, we provided all of these students with access to documentation developed at the program onset. These documents identified major food security themes for Tanzania and important research gaps found within them. Students have been encouraged to work from this base when identifying their research problems, and they have been encouraged to collaborate with other USAID-funded projects and CGIAR research programs located in Tanzania. The iAGRI Project Management has facilitated this collaboration.

Research

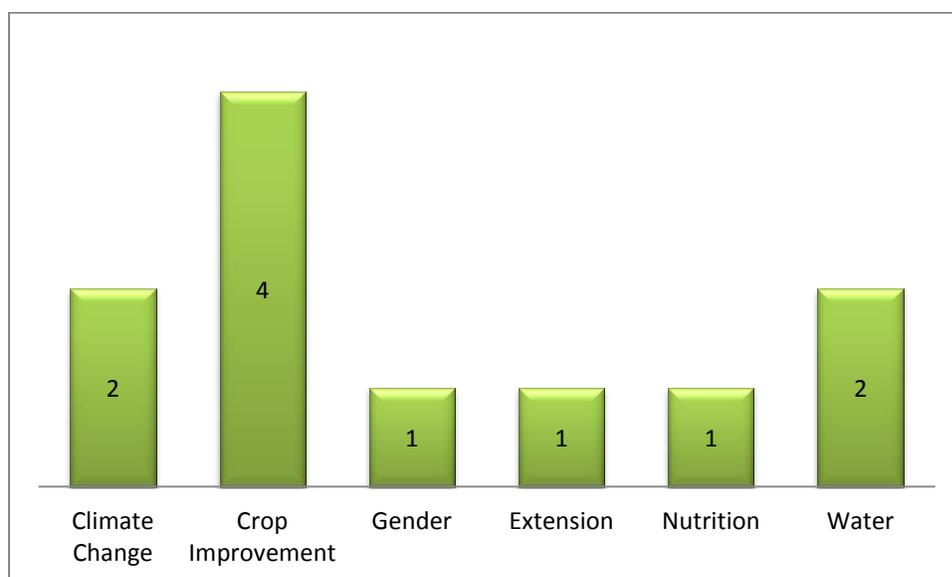
All 8 collaborative research projects supported under Phase I of this dimension of the iAGRI program continued over the past fiscal year. Five are led by women scientists. Five PIs are employed by SUA; one is employed by MAFC; and two are employed by OSUC institutions.

PIs for Phase I projects participated in a workshop on the SUA campus in January 2015. They presented preliminary results from their research, discussed activities remaining to be undertaken, and continued discussion about how to disseminate their research findings. The workshop was well attended by researchers from SUA, MAFC and OSU partner institutions. Seven Co-PI's from OSUC partner institutions were in attendance. Together with their MAFC and SUA counterparts they used this opportunity to chart additional collaborative activities to be undertaken in 2015. Annual reports for these projects were submitted in June 2015 and reviewed by iAGRI staff. Requests were made for extensions of all of the projects, primarily to allow for completion of analyses and publication of results.

Three new research projects were funded during the year dealing with climate change, crop improvement and water. One deals with agricultural insurance to mitigate agricultural risks associated with major weather events. Another deals with major biotic and abiotic stresses associated with maize production. And the final project deals with watershed management and water availability. These topics were identified through interactions with USAID-funded Feed the Future partners in Tanzania and targeted to address USAID priorities in Tanzania. The PMU has also continued to work with SERA on the development of new agricultural policy related projects dealing with rice marketing and land policy.

Chart 4: Collaborative Research

Feed the Future Themes Addressed by Research Projects



The eleven projects currently funded under iAGRI Collaborative Research Phase I and Phase II have all focused on one or more of the Feed the Future topics identified as priorities for iAGRI. Principal subject matter content of the funded projects is illustrated in the bar graph above. Crop improvement has received the greatest amount of attention, and the focus of related projects has largely been on maize, rice and horticultural crops. Following in degree of priority are climate change and water management.

Capacity Building

Capacity building during the past year continued along five dimensions which were defined in the Annual Work Plan for FY 2014-2015. They are (a) University Leadership/Change Management; (b) Teaching/Learning Improvement; (c) Staff Professional Growth; (d) Individual Program Strengthening; and (e) Infrastructure Strengthening.

University Leadership/Change Management – Over the past year, iAGRI staff worked closely with SUA leadership to implement a major restructuring effort designed to position SUA to maintain its

relevancy to Tanzanian society and to position itself as a vanguard institution in the 21st century. iAGRI organized several major study tours by SUA leadership to counterpart institutions in the East African region to learn how they have addressed change issues related to institutional funding, program relevance, and student learning. It also promoted the commercialization of SUA resources and research outputs through its Innovation Portfolio. It provided leadership training to senior level officials and mid-level management through monthly leadership forums and to future leaders through a series of webinars for iAGRI-funded students dealing with leadership competencies. Other major leadership activities addressed over the past year were a quality management training program for SUA management and administrative staff, continued strengthening of SUA's alumni association, and development of an income generating unit for the campus.

Teaching/Learning Improvement - The iAGRI Project Management Unit continued to work with the Quality Assurance and Promotion Bureau (QAPB) at SUA to equip and service classrooms with audio-visual equipment. Other major activities focused on the Sokoine National Agricultural Library and included continued attention to increasing access to SUA research and academic staff and students to scientific journals from around the world through a discovery tool known as LibHub. LibHub, which was initially funded by USAID, aggregates digital journal articles from multiple sources into a single searchable database. Program support was also provided to engage graduate students as teaching associates for high-student-volume programs. Finally, support was provided to the Department of Crop Science and Production for a review of its academic, research and outreach programs.

Staff Professional Growth – Continued attention was given to providing professional growth opportunities for SUA academic and research staff. These activities included efforts to implement gender related policies and initiatives as well as junior staff mentoring, with a focus on women. Several short-courses were offered to SUA staff and graduate students by visiting staff from OSUC member institutions and by other African experts, including some from the SUA campus. The short courses included proposal writing, business plan development, weather data usage, use of statistics software (R and SPSS), gender mainstreaming in agriculture, qualitative methods of research, randomized control trials, and development of policy briefs. Most of these short courses were led by staff from OSUC institutions and staffed by the PMU in Morogoro. Numerous OSUC and RUFORUM advisors offered seminars to SUA staff and graduate students on topics germane to the field work of their students when visiting SUA. These seminars were organized by the PMU. Several staff from SUA and MAFC travelled to the OSUC institutions to observe how administrative and program topics of interest to them are being managed and administered in the U.S. These staff persons were invited to give seminars to OSUC staff on topics of related interest. Several co-advisors for Ph.D. students also visited OSUC institutions to interact with their students and co-advisor counterparts on topics germane to completion of student theses and dissertations. These visits were well received and are expected to lead to continued long-term interactions.

SUA Program Strengthening – Specific academic and research programs and facilities at SUA have been identified for strengthening over the course of the project. Many of these activities actually were initiated prior to the onset of the past fiscal year. During the past year, continued attention was

given to strengthening a commercial horticulture facility, a soil analysis laboratory, a statistical collaboration laboratory, and the English Language Program. They all represent potential alternative revenue streams for SUA. Other program strengthening activities focused on SUGECO, which continues to support the creation of small businesses by SUA graduates, development of the capacity of SUA to hold major international conferences – specifically a conference on climate change, and an agricultural policy unit in the Department of Agricultural Economics and Agribusiness.

Infrastructure Strengthening – The second floor was added to the iAGRI Project Management building on the SUA campus, thus enabling it to expand its project related services to SUA staff and students. In addition, continued investments were made in development of the SUA website including planning and preparation for a major effort to modernize its structure and content. Attention was also given to updating the iAGRI website.

Global South-South Linkages – Over the past year, iAGRI continued to strengthen linkages between SUA and Global South partners. These linkages were primarily developed through the students placed by RUFORUM at its member institutions and through students placed at Punjab Agricultural University in India. RUFORUM has placed students in Zambia, Malawi, Kenya and Uganda. Study tours of SUA officials to counterpart institutions in Uganda and Kenya over the past year have also led to strengthened institutional ties and these ties have benefitted SUA in numerous ways. These strengthened ties are represented by MOUs which have been signed with several of these institutions.

2. Performance Against Targets

Indicator Data / Disaggregation	Baseline Value	2015 Target	Achieved to date	Q1	Q2	Q3	Q4	LOP - Life Of Project	Units
A: FTF INDICATORS									
IR 1: Improved Agricultural Productivity / Sub IR 1.1: Enhanced human and institutional capacity development for increased sustainable agriculture sector productivity									
4.5.2-6: Number of individuals who have received USG supported long-term agricultural sector productivity or food security training	0	7	12				12	129	Number
Male	0	3	3				3		
Female	0	4	9				9		
4.5.2-7: Number of individuals who have received USG supported short-term agricultural sector productivity or food security training	0	100	319		49	41	229	450	Number
Type of individual									
Producers									
People in government									
People in private sector firms									

People in civil society	0	0	319		49	41	229		
Sex									
Male	0	50	179		29	25	125		
Female	0	50	140		20	16	104		
IR 1: Improved Agricultural Productivity / Sub IR 1.2: Enhanced Technology Development, Dissemination, Management and Innovation									
4.5.2-39: Number of technologies or management practices in one of the following phases of development:								40	Number
Phase I: under research as a result of USG assistance	0	49	37				37	23	Number
Phase II: under field testing as a result of USG assistance	0	10	4		2		2	17	Number
Phase III: made available for transfer as a result of USG assistance									
IR 3: Increased investment in agriculture and nutrition related activities/ Sub IR 3.1: Increased Participation of the Private Sector in the Delivery of Services									
4.5.2.-12: Number of public-private partnerships formed as a result of FTF assistance	0	2	5		1	3	1	8	Number
Agricultural production	0	1							Number
Agricultural post harvest transformation	0	1	1			1			Number
Nutrition									Number
Other			2			2			Number
Multi-focus			1		1				Number
B: iAGRI CUSTOM INDICATORS									
Indicator Data / Disaggregation	Baseline Value	2015 Target	Achieved to date	Q1	Q2	Q3	Q4	LOP - Life Of Project	Units
IR 1: Improved Agricultural Productivity / Sub IR 1.1: Enhanced human and institutional capacity development for increased sustainable agriculture sector productivity									
OSU 1.1.1 Number of students assessed for Graduate level English competency	0	1	0				0	85	Number
Male	0	0	0				0		Number
Female	0	1	0				0		Number
OSU 1.1.2 Number of students making use of improved ICT in classroom instruction	0	2,500	2,050		2,050			6,250	Number
Male	0	1,500	1,306		1,306				Number
Female	0	1,000	745		745				Number
OSU 1.1.3 Number of researchers trained on Randomized Control Trials (RCTs)	0	15	23				23	85	Number
Male	0	10	19				19		Number

Female	0	5	4				4		Number
OSU 1.1.4 Number of research projects conducted which specifically focus on gender	0	2	2				2	9	Number
IR 1: Improved Agricultural Productivity / Sub IR 1.2: Enhanced Technology Development, Dissemination, Management and Innovation									
OSU 1.2.1 Number of research projects that address issues of climate change	0	3	3			1	2	14	Number
IR 3: Increased investment in agriculture and nutrition related activities / Sub IR 3.2: Increased Capacity of Women to Participate in Agriculture and Nutrition									
OSU 3.2.1. Percent of non senior female academic and technical staff participating in mentorship program	0	5						1,250	%
OSU 3.2.2. Number of high school girls provided with career guidance and counselling program	0	1,000	2,200				2,200	4,150	Number
IR 3: Increased investment in agriculture and nutrition related activities / Sub IR 3.2: Increased Capacity of Women to Participate in Agriculture and Nutrition									
OSU 3.2.3. Percentage change in the female secondary school students with intention to applying for admission to agriculture and science degree programs at Sokoine university	0	5							% change
OSU 3.2.4. Number of actions supportive of gender mainstreaming at Sokoine University of Agriculture	0	4	8	3	2	2	1	20	Number
IR 3: Increased investment in agriculture and nutrition related activities / Sub IR 3.3: Enhanced Knowledge and External ideas through study tours									
OSU 3.3.1. Number of people participating in study tours as a result of FtF assistance	0	15	52		24	16	12	18	Number
Male	0	10	35		16	12	7		
Female	0	5	17		8	4	5		
Indicator Data / Disaggregation	Baseline Value	2015 Target	Achieved to date	Q1	Q2	Q3	Q4	LOP - Life Of Project	Units
IR 8: Improved Enabling Policy Environment for both Agriculture and Nutrition / Sub IR 8.1: Improved Capacity to Conduct Policy Research and Analysis									
OSU 8.1.1. Number of policy issues in agriculture, natural resources and environment, climate change and nutrition researched and analysed as a result of FtF assistance	0	4	3			1	2	31	Number
IR 8: Improved Enabling Policy Environment for both Agriculture and Nutrition / Sub IR 8.2: Public/Private Sector Dialogue on Policy Increased									

OSU 8.2.1. Number of USG-supported policy dialogue events held that are related to improving the enabling environment for agriculture and nutrition	0	2	2			1	1	15	Number
C: iAGRI NEW INDICATORS UNDER THE GENERAL CATEGORY OF CAPACITY DEVELOPMENT									
OSU: Number of pre-SOWs completed	0	20	21	7	7	6	1	40	Number
OSU: Number of beneficiaries made aware of opportunities in the innovation portfolio	0	75	364	113	12	73	166	150	Number
OSU: Number of unique visitors to the innovation portfolio website	0	15	42		12	14	16	30	Number
OSU: Number of unique visitors to the posted pre-SOW pages	0	7	133	85	4	24	20	15	Number
OSU: Number of individuals joining the innovation portfolio group on LinkedIn	0	5	72	48	20	2	2	10	Number
OSU: Number of private/public/NGOs that have applied new technologies/management practices	0	5	3	0	1	2		10	Number
Private			2			2			Number
Public									Number
NGOs			1		1				Number
OSU: Value of new private/public/NGOs investments in agricultural/food chain leveraged	0	30,000	30,500				30,500	80,000	US \$
OSU: Percent increase in R & D budget of companies investing in the innovation portfolio	0	5						5	Percent
OSU: Number of individuals who have received short term training under the innovation portfolio	0	25	57	10	8	6	33	50	Number
Male	0		47	9	6	5	27		Number
Female	0		10	1	2	1	6		Number
OSU: Number of individuals trained under the Leadership and Management Training Program (LMTP)	0	150	109	36	8	38	27	150	Number
University level	0								Number
Faculty/Institute/Center	0								Number
Departmental level	0								Number
Male	0		68	31	7	30	26		Number
Female	0		14	5	1	8	1		Number
OSU: Number of individuals trained under the Quality Management Training Program	0	50	86				86	50	Number
Male	0		57				57		Number
Female	0		29				29		Number
Indicator Data / Disaggregation	Baseline Value	2015 Target	Achieved to date	Q1	Q2	Q3	Q4	LOP - Life Of Project	Units
OSU: Number of students participating in the Leadership Webinar Series Program	0	30	50	13	37			89	Number

Male	0	15	24	8	16				Number
Female	0	15	26	5	21				Number
OSU: Number of organizational experiments FtF helps develop and carry out	0	12	21		21			20	Number
OSU: Number of conversations that matter (CTM) with SUA personnel	0	15						30	Number
OSU: Number of ways that work (WTW) resulting from CTM	0	10						20	Number
OSU: Number of formal system changes through informal system activity	0	5						10	Number
OSU: Number of previously unimplemented components of SUA policies that are now implemented as a result of FtF effort	0	2						5	Number
OSU: Number of new English language services provided at SUA under FtF program	0	7						10	Number
OSU: Number of SUA students and staff involved in the new and improved English language services program	0	200	0			0	0	1,200	Number
OSU: Number of visitors to the redesigned SUA website	0							1M	Number
OSU: Percentage of SUA website visitors with positive perception of the website	0	75						75	Percent
OSU: Number of full text downloads through SNAL	0	10,000	8,829	2,203	2,711	2,576	1,339	35,000	Number

3. Introduction

This Annual Report contains a description of activities undertaken under iAGRI auspices from October 1, 2014 to September 30, 2015 and progress which has been made regarding achievement of iAGRI objectives. In addition to summarizing activities conducted during this period, it contains a discussion of results, outputs and preliminary impacts. It has been formatted to be consistent with the USAID template used to monitor and evaluate its programs in higher education and food security. The focus is on major food security indicators found in the USAID/Tanzania Feed the Future program.

All four iAGRI objectives were addressed during the reporting period. By the end of the year, 136 students had been placed in graduate degree programs at OSUC and RUFORUM member institutions, at SUA, and at the Punjab Agricultural University in India as summarized in the pie chart found in the Executive Summary. Oversight for these activities was provided by the iAGRI Management Entity (ME) in the Office of International Programs in Agriculture at Ohio State University and the iAGRI Project Management Unit (PMU) in Morogoro. iAGRI support continued for eight Phase I Collaborative Research Projects involving partners from SUA, MAFC and OSUC institutions, and three Phase II Collaborative Research Projects were initiated. All of the research projects address priority Feed the Future themes identified at the project onset through a knowledge gap assessment. During this period, emphasis was given to iAGRI-funded activities designed to strengthen the capacity of SUA's academic

and research programs and the capacity of SUA leadership to manage organizational transformation in response to changes in the university's external and internal environments. Major changes include reduced governmental funding, increased higher education competition, shifting demographics, and communication technology developments. To adapt to these changes, SUA must transform itself.

To date, iAGRI has received funding support from USAID/Tanzania totalling \$21,250,000 out of a total award of \$25,515,000. OSU has reported expenditures of \$17,151,330 as of 9/30/15. Currently, our budget estimate for the coming Fiscal Year is \$8,175,135. Thus, iAGRI may require additional funding support to implement the entirety of the project through the end date of 2/28/17.

Description of Program

iAGRI is designed to strengthen the training and collaborative research capacities of SUA and the MAFC. This is consistent with the theme and road map of the USAID Feed the Future initiative, particularly as it has been made operational by USAID/Tanzania. It is also consistent with Government of Tanzania priorities as reflected in its Agricultural Sector Development Program and the Tanzania Comprehensive Africa Agricultural Development Program compact. The four major iAGRI objectives are to:

- Provide advanced degree training in agriculture to 135 Tanzanian post-graduate students, twenty of whom are to be trained at the Ph.D. level;
- Establish a program of agricultural research involving collaboration between and among SUA, MAFC and OSUC representatives;
- Strengthen the capacity of SUA to directly develop and implement agricultural instruction, internship, research and outreach programs and to manage associated changes effectively; and
- Promote cooperation between SUA, U.S. universities and Global South universities.

Implementation of iAGRI involves a partnership between and among Tanzanian institutions and a consortium of universities led by the Ohio State University (OSUC). OSUC consists of six major U.S. land-grant institutions of higher education - Ohio State University (OSU); Michigan State University (MSU); the University of Florida (UFL); Virginia Tech (VT); Tuskegee University (TU); and Iowa State University (ISU). Together, these U.S. universities have many years of experience working with human and institutional capacity development in Sub-Saharan Africa, including a history of collaboration with SUA and MAFC institutions in Tanzania. Over the past four years they have all made important contributions to iAGRI. In addition, other U.S. land-grant universities, the Regional Universities Consortium for Capacity Building in Agriculture (RUFORUM), and Global South institutions, such as Punjab Agricultural University (India), have provided training and technical assistance inputs upon request.

4. Activity Implementation Progress

During the past fiscal year, iAGRI has fulfilled commitments made with regard to long-term degree training, collaborative research and institutional capacity building. The project has provided additional focus to its institutional capacity building dimension, including building stronger private sector linkages,

alternative income generation opportunities, and administrative and managerial reforms at SUA. Similar to past Annual Reports, this report is organized around the Intermediate Results (IRs) associated with the USAID/Tanzania Monitoring and Evaluation Plan and the Project Management Plan prepared by iAGRI at its onset.

IR 1 – Improved Agricultural Productivity (Part 1 – Training)

Long Term Graduate Degree Training

Our report of long-term degree training is organized by cohorts of students selected for training in the U.S. at OSUC member institutions, at RUFORUM member institutions, at SUA, and at Punjab Agricultural University. The actual breakdown of Cohorts I - IV student placements is found in the table that follows.

Completed or Continuing Student Graduate Degree Placements

	<u>M.Sc.</u>		<u>Ph.D.</u>		<u>Total</u>	
	Placed	Completed	Placed	Completed	Placed	Completed
Cohort I						
OSUC	6	6	---	---	6	6
Cohort II						
OSUC	13	13	15	1	28	14
SUA	8	4	2	---	10	4
RUFORUM	8	6	---	---	8	6
Cohort III						
OSUC	10	6	---	---	10	6
SUA	4	---	---	---	4	---
RUFORUM	10	---	---	---	10	---
Punjab Ag Un	2	2	---	---	2	2
Cohort IV						
OSUC	23	---	---	---	23	---
SUA	8	---	2	---	10	---
RUFORUM	10	---	---	---	10	---
Punjab Ag Un	4	---	---	---	4	---
TOTAL	106	37	19	1	125	38

- Cohort II consisted of 53 students, 26 of whom were placed at OSUC member institutions. The 12 M.Sc. placements in the U.S. have all graduated and are back in Tanzania. Additionally, one Ph.D. placement graduated and returned to his position at SUA. The remaining 14 Ph.D. candidates at OSUC institutions completed their course work and initiated their dissertation

research.² Two Ph.D. students placed at SUA as part of Cohort II worked on preparation of their dissertations. Four of the 8 students placed at SUA as part of Cohort II graduated while the other four await external examiner reviews of their theses. Six of the 9 students placed at RUFORUM member institutions as part of Cohort II completed their programs during the past year. One dropped out of the program and the other three are awaiting final reviews of their theses. Three B.Sc. students placed at SUA continued their studies.

- Cohort III consisted of 26 M.Sc. placements. Six of the 10 students placed at OSUC member institutions completed their theses during the past year and are residing in Tanzania. The other four students continued their field research and worked on their theses. They are all programmed to graduate by the end of the 2015 fall term. The two students placed at Punjab Agricultural University as part of this cohort also graduated and returned to their places of employment in Tanzania. None of the students placed at SUA and at RUFORUM member institutions completed their programs. Three of them finished their research and submitted their theses to external examiners for review. The other 11 were in the process of completing drafts of their theses at the end of the fiscal year. Most students placed at RUFORUM and OSUC member institutions hosted their thesis research advisors during the year. These field visits greatly facilitated the completion of the students' research as well as the writing of their theses. Interaction between thesis advisors and co-supervisors was also very beneficial in this regard. We anticipate that all of these students will graduate by the end of the coming fiscal year.

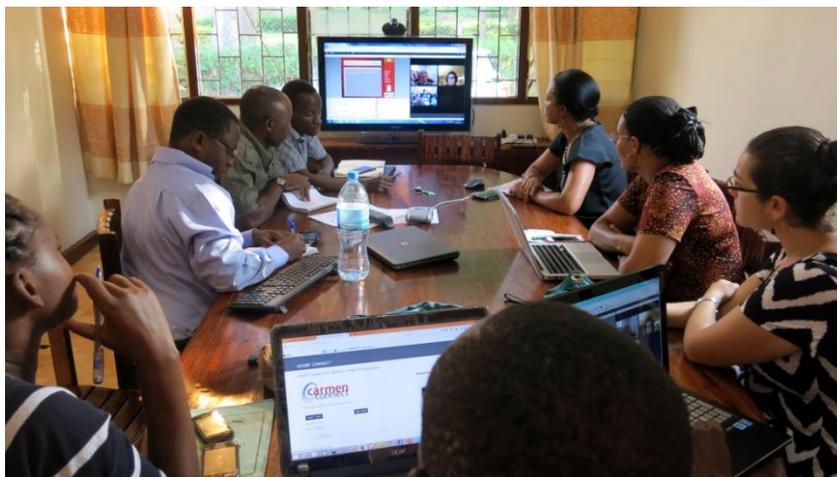
Picture 1: Long-Term Graduate Degree Training



² One student failed to pass her doctoral candidacy exam and was awarded a Master's degree. She is now back in Tanzania working for MAFC.

- Cohort IV consists of 47 M.Sc. and Ph.D. candidates. Twenty three of them were placed at OSUC member institutions in fall, 2014. An additional ten candidates were placed at SUA, two of whom initiated Ph.D. programs. An additional 10 students were placed at RUFORUM member institutions. The remaining students were placed at Punjab Agricultural University. The cohort was larger than initially anticipated due to the addition of 15 student placements through an amendment to the iAGRI Cooperative Agreement. All students in this cohort were busy taking classes related to their degree programs. Students placed at OSUC and RUFORUM institutions returned to Tanzania in summer, 2015 to initiate their field research. All students placed at OSUC member institutions prepared approved thesis proposals prior to returning to Tanzania and all of them have been assigned thesis co-supervisors in Tanzania. The provision of Tanzanian co-advisors for the students and the expectation that all students conduct their research in Tanzania on topics directly related to food security or related topics have increased the relevancy of the research conducted.
- Cohort V students were selected and placed in degree programs during the latter part of the past fiscal year. This cohort resulted from a decision by USAID/Tanzania in 2014 to augment the number of students to be trained under iAGRI by 15. The cohort consists of 12 students. Two Ph.D. candidates were placed at OSUC member institutions and one was placed at a RUFORUM member institution. The seven remaining students are M.Sc. candidates, five of whom were placed at SUA. With these students, we now have 51% female and 49% male.

Picture 2: Webinar Series



iAGRI students participating in a session of The Leadership Challenge webinar at the iAGRI offices in Morogoro. The course was taught by OSU professors.

Leadership Webinar Series for iAGRI Students – Three leadership webinars were initiated during this reporting period. Thirty-three iAGRI-funded students attended a series based on Stephen Covey’s *The Seven Habits of Highly Effective People*. Fourteen iAGRI-funded students completed a series built around the book *The Leadership Challenge* by James Kouzes and Barry Posner. *The Leadership Challenge* webinar was taught by OSU professors, while *The Seven Habits of Highly Effective People* was taught by PMU staff. Both series were attended by students from Cohorts II, III and IV. Additionally, two

Leadership Webinar series began during the month of September. They are based on the books of *The Seven Habits of Highly Effective People* and *The Leadership Challenge*. Twenty-eight recipients of iAGRI fellowships registered for the former, and 27 for the latter.

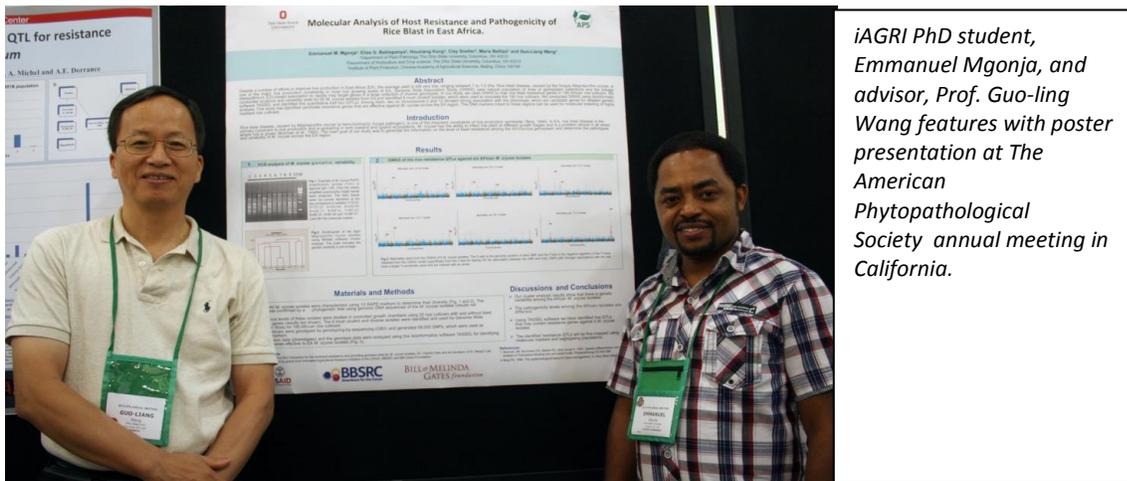
Advising of Long-Term Degree Candidates – An important aspect of the graduate degree training under iAGRI is the emphasis given to local relevance of graduate degree programs completed outside of Tanzania. A local Tanzanian supervisor is assigned to each student studying at OSUC and RUFORUM institutions to assist in this regard. Advisors for students placed at OSUC and RUFORUM institutions interact with Tanzanian supervisors and the students over the entire life of the degree program, beginning with the selection of an appropriate thesis/dissertation topic. Several of the Ph.D. student co-supervisors have actually visited with students placed at OSUC member institutions and their advisors as part of the program. Students and their advisors were given access to literature describing priority Feed the Future themes, which were based on the iAGRI Needs Assessment report mentioned above. They have also been encouraged to interact with other Feed the Future partners in Tanzania, including international agricultural research center representatives while identifying appropriate research topics.

Student Advisor Visits to Tanzania

Visitor	University	Dates	Student	Local Advisor
Ariena Van Bruggen	Florida	11/10-23/	Mpoki Shimwela	Fen Beed, IITA
Clay Sneller	Ohio State	1/29-2/17/15	Elias Balimponya	Ashura Luzi Kihupi, SUA
Conrad Heatwole	Virginia Tech	2/24-3/6/15	Winfred Mbungu	Henry Mahoo, SUA
Samuel Kyamanywa	Makerere	3/1-6/15	Happiness Nnko	Gration Rwegasira, SUA
Jeffrey Jones	Florida	3/13-26/15	Mpoki Shimwela	Fen Beed, IITA
Egnin Marcelino	Tuskegee	3/19-4/3/15	Innocent Ritte	Paul Kusolwa, SUA
Mildred Ssemakula	Makerere	5/15-16/15	Allan Mariki	Kumar, IITA
Gilly Evans	Florida	6/6-12/15	William Warsanga	Elibariki Msuya, SUA
Guo-Liang Wang	Ohio State	6/8-13/15	Emmanuel Mgonja	Robert Mbagala, SUA
Conrad Bonsi	Tuskegee	6/10-18/15	Papias Binagwa	Susan Nchimbi-Msolla, SUA
Steve Sargent	Florida	6/13-20/15	Ramadhani Majubwa	Theodosy Msogoya, SUA
Jenipher Bisikwa-Isiko	Makerere	6/13-20/15	Erick Mvati	Juma Kayeke, SUA
Kathleen Alexander	Virginia Tech	6/25-07/5/15	Kuruthumu Mwamende	R.H. Makundi, SUA

Lee Burras	Iowa State	6/13-25/15	Johnson Mtama	Balthazar Msanya, SUA
Kokoasse Kpomblekou	Tuskegee	6/27-7/11/15	Mawazo Shitindi	Johnson Semoka, SUA
Ivan Muzira Mukisa	Makerere	6/29-7/2/15	Honi Buzo	Richard Mongi, SUA
Gireesh Rajaskekara	Ohio State	7/6-17/15	Isaac Kashoma	Rudovick Kazwala, SUA
Jeremiah Kang'ombe	LUANAR	8/11-16/15	Sebastian Moshia	Nazael Madalla, SUA
Won Song	Mich State	7/16-21/15	Saidah Bakar	C.N. Nyaruhucha, SUA
Gale Strasburg	Mich State	8/11-20/15	Juma Mmongoyo	Jovin Mgula, SUA
Dr Gracious Diiro	Makerere	9/3-6/15	Marco Sanka	Per Hilbert (IITA)

Picture 3: Student Ph.D. Program Progress



iAGRI PhD student, Emmanuel Mgonja, and advisor, Prof. Guo-ling Wang features with poster presentation at The American Phytopathological Society annual meeting in California.

Placements at Global South Institutions – Four students from Cohort IV were placed in graduate degree programs at the Punjab Agricultural University (PAU) in India. PAU is part of the state agricultural university system in India and is recognized as one of its premiere universities. Having made significant contributions to the Green Revolution in India, it is currently focused on addressing sustainability of the Indian agricultural and food systems. Two of these students are pursuing degrees in Food Technology. Another student is pursuing a M.Sc. degree in Human Nutrition; and a final student is pursuing a M.Sc. degree in Soils.

An important iAGRI objective is to build long-term collaboration between SUA and other Global South institutions. RUFORUM was subcontracted by iAGRI to place students from several cohorts, and has numerous member institutions in Eastern and Southern Africa. As for other Global South placements, these will help build productive and mutually beneficial ties between RUFORUM institutions and SUA.

Picture 4: iAGRI Students at PAU



Meshack Tegeye is among four Cohort 4 iAGRI students placed at the Punjab Agricultural University in India. In this picture, Meshack is working in one of the labs of PAU's Food Science Department under the supervision of one of its staff.

IR 1.2 Phase I iAGRI Collaborative Research Program

iAGRI continued to fund, monitor, and provide feedback to eight Phase I collaborative research projects as part of its overall program. Each project includes the participation of at least one researcher from SUA, MAFC and an OSUC member institution. U.S. scientists have played an active role in all of these projects. Two projects are headed by U.S. based PIs and others involve graduate students from OSUC member institutions. Participation has included interactions via internet and video conferencing and visits to Tanzania. Several of the Tanzanian PIs have also visited with counterparts in the U.S.

iAGRI-supported Phase I research projects are listed below along with the names of the principal and co-principal investigators from OSUC member institutions. All of these projects were initially funded for a period of two years and designed to end in June, 2015. However, all requested and were granted extensions – seven through the end of calendar year 2015 and one through the end of calendar year 2016. Most of the projects completed their field and analytic activities during the past fiscal year.

Phase I iAGRI Collaborative Research Projects

Principal Investigator	Base	Project Title	OSUC Partners
AMURI, Nyambilila	SUA	Improving Agricultural Productivity and Crop Nutritive Quality through a Gender Sensitive Approach to Cereal and Vegetable Production in Tanzania	Rakowski, OSU
CHASE, Carlene	Florida	Improvement of Tomato Productivity and Quality in Tanzania through Reduction of Adverse Effects of Biotic and Abiotic Stresses	Chase, Florida Xin-Zhao, Florida

KASHENGE-KILLENKA, Sophia	MAFC	Integrated Salt Affected Soil Management Options for sustainable Rice Productivity in Tanzanian Irrigation Schemes	Boman, Florida Dick, OSU
KIMARO, Didas	SUA	Agricultural Innovation for Smallholder Farmers through Locally Adapted Conservation Agriculture for Improved Food Security in the Context of Climate Change	Lal, OSU
KINABO, Joyce	SUA	From Soil Elements to Food Nutrients: Improving Nutrient Content of Foods for Human Consumption via Agriculture	Dawkins, Tuskegee
MILLER, Sally	OSU	Improved Soil Health and Germplasm to Advance Tomato Production in Tanzania	McSpadden, OSU Francis, OSU Testen, OSU
TARIMO, Andrew	SUA	Promotion of Low-Cost Drip Irrigation Technology for Enhancing Agricultural Productivity and Livelihoods of Small-Scale Farmers in Semi-Arid Areas of Tanzania	Boman, Florida Dick, OSU
WAMBURA, Raphael	SUA	Using the Agricultural Innovation Systems (AIS) Approach to Improve Maize and Rice Production through Extension Service Delivery in Morogoro and Dodoma, Tanzania	Doamekpor, Tuskegee, Masinde, ISU

A major workshop involving the PIs for these eight collaborative research projects was held in Morogoro in January 2015. It was designed to assess the status of individual projects. PIs were asked to report on (a) research activities undertaken; (b) research activities to be undertaken over the following five months; (c) preliminary results from the research; and (d) anticipated research publications and other dissemination activities to be completed. The workshop was well attended and participants included members of the research teams as well as representatives of SUA and MAFC, including the Director of Research and Development from MAFC.

Most of the OSUC Co-PIs were also in attendance. They included:

- Brian Boman, University of Florida
- Carlene Chase, University of Florida
- Norma Dawkins, Tuskegee University
- Warren Dick, Ohio State University
- Dorothy Masinde, Iowa State University
- Sally Miller, Ohio State University
- Cathy Rakowski, Ohio State University

Picture 5: Collaborative Research Workshop



Prior to and following the workshop, OSUC PIs worked with their Tanzanian counterparts on project related activities, including the conduct of field research, planning collaboration for the following six months and discussion of prospective joint publications emerging from the research.

IR 1.2 Borlaug Program Research Awards

Several additional iAGRI-sponsored students located at OSUC member institutions were awarded USAID-funded Borlaug research awards. These awards of up to \$20,000 are intended to build student linkages with international agricultural research centers (IARC). iAGRI student recipients of Borlaug awards are building linkages with IARC facilities in East Africa, including Tanzania. Several students received these awards during the previous year and visited Tanzania during the past twelve months, using these funds to interact with CGIAR counterparts in East Africa. These interactions lead to thesis and dissertation research that is aligned with Feed the Future priorities and research programs supported by IARCs. They will also lead to long-term collaborations between SUA and MAFC once students graduate and return to their home institutions.³

IR 1.2 Graduate Student Summer Research Internships

Pat Bell, an advisee of Rattan Lal, OSU, participated in the 2013 summer research internship program funded from OSU sources. During the current reporting period, he returned to Tanzania as a Borlaug Fellow to continue his research on an iAGRI collaborative research project directed by Prof. Didas Kimaro. In addition, another student advised by Prof. Lal, Eric Stein, also initiated field research related to the same project during summer, 2015. He will continue his fieldwork in Tanzania focusing on the analysis of research data collected over the previous year. His internship in Tanzania is partially funded by the OSU Office of International Programs in Agriculture.

³ Refer to the annex of this report for names of scholarship recipients.

IR 1.2 Phase II Collaborative Research Programs

Three major research projects were funded under Phase II of the iAGRI Collaborative Research program during the past fiscal year. Discussions were also held with SERA about how to fund additional policy related research dealing with rice markets and land use, two topics of great interest to Tanzanian policy makers. Given that iAGRI is currently scheduled to end in February, 2017, a decision has been made to limit additional funding for these initiatives. Phase II research projects address key constraints encountered in the production and marketing of priority Feed the Future crops as well as problems encountered by Feed the Future partners in Tanzania in carrying out their project activities. They also reflect greater direct involvement of OSUC researchers in the definition and implementation of projects. The iAGRI Management Team identified priorities for this phase in order to ensure that funded activities help meet the goals of the USAID/Tanzania Mission Feed the Future program.

Maize Productivity Constraints – A major maize research project was funded to address major biotic and abiotic production constraints, including maize lethal necrosis disease, striga and moisture stress tolerance. It involves major collaboration between research scientists located at Iowa State University and the Mikocheni Agricultural Research Institute in Tanzania. The research at Iowa State has focused on development of maize germplasm tolerant to these stresses. Scientists at Iowa State are building on their participation in a Germplasm Enhancement Maize Project funded by USDA. Research at Mikocheni has focused on field testing of different maize varieties and development of management practices that increase tolerance levels. Activities in Africa have included collaboration with the International Center for Improvement of Maize and Wheat (CIMMYT) and its scientists located in Nairobi, Kenya as well as scientists working on the Water Efficient Maize for Africa (WEMA) project, managed by the African Agricultural Technology Foundation. Maize lethal necrosis disease has recently become a major limiting factor in maize production in much of East Africa.

Climate Change and Agricultural Risk Management - Climate change has increased the risk associated with crop production in Tanzania, particularly in regard to rain-fed agriculture and the production of cereal crops. This project focuses on how to reduce these risks through the provision of risk insurance based on weather indexing. Expanding upon their previous research in West Africa, agricultural economists at Ohio State University in collaboration with counterparts at SUA developed a proposal to investigate the feasibility of this type of insurance program in Tanzania. The research focuses on the use of index insurance and risk sharing by farmers as well as the sustainability of group lending activities. The project also examines the impact of index-insured group credit on technology adoption by small farmers. The research findings are intended to contribute to greater understanding of the conditions under which farmers will participate in insurance programs designed to reduce the negative effect of extreme weather events associated with climate change as well as the challenges faced by agricultural banks and other agricultural lenders wishing to use index insurance and group credit to expand services to marginal smallholders. The project was recently funded in September, 2015.

Land Use and Climate Change Impacts on Sustainable Agricultural Intensification – iAGRI recently funded a project dealing with land use and climate change impacts on agriculture as well as the availability and use of water in the Wami/Ruvu River Basin. This is a very important watershed because it supplies much of the fresh water being used by the Dar es Salaam greater metropolitan area. Principal institutions involved in the project are Virginia Tech, SUA and the Wami/Ruvu Basin Water Office of the Tanzanian Ministry of Water. The project builds on research currently being conducted by Winfred Mbungu, a Ph.D. candidate at Virginia Tech. Research objectives of this project are to (1) quantify and compare land use impacts on infiltration, runoff, and erosion for priority soil/land cover complexes; (2) evaluate the impacts of long-term climate change on hydrology and erosion in the basin under different land use scenarios; and (3) select, adapt and evaluate a watershed model that supports watershed management activities in the Wami/Ruvu Basin being addressed by the Ministry of Water Office. Expected outcomes are models developed to facilitate improved water and land management methods that can be used in other watersheds and to ensure a sustainable water source for farmers as well as downstream non-farm water users.

Food Demand in Tanzania – SERA in consultation with iAGRI developed a concept note on “Food Demand in Tanzania”. This was a follow on study of the “Rice Demand” study that was completed in the last fiscal year 2013-14 and which was funded as part of Collaborative Research Phase 2. The main objective of the food demand study is to estimate price, income and expenditure elasticities for different food groups in Tanzania using current household survey data and a theoretically consistent micro-econometric demand model. Most of the funding of this study would come from SERA. iAGRI anticipates picking up the project and funding it as SERA comes to a closure in mid 2016. The study will be implemented by Edith Lazaro who carried out the initial study on Rice Demand as part of her MSc thesis under The Ohio State University, and who is now employed by SERA.

Land Access Study – iAGRI has collaborated with SERA and Michigan State University in the design of a land access study. The design of the study is such that there will be four members from the Department of Agricultural Economics and Agribusiness at SUA who will be conducting the field surveys. Two members from Michigan State University will play a technical backstopping role given their experience on the same study in other African countries. The bulk of funding of this study will be provided by Michigan State University through another USAID-funded project.

IR 3 – Increased Investment in Agriculture and Nutrition Activities

IR 3.1 SUA Capacity Building – Individual Program Strengthening

iAGRI continued to assist SUA to implement an organizational transformation program, which has been sanctioned by SUA leadership. In the approach introduced at SUA by iAGRI, transformation is brought about through dynamic interaction of the formal and informal systems of the university. Problems are identified by faculty and staff and solutions to them are “blessed” and encouraged by university

administrators. The solutions are implemented on an experimental basis in the informal system without yet being part of the formal system. iAGRI has developed a series of 12 steps through which the innovations implemented in the informal system influence and alter the formal organizational structure and operation of the university.

The iAGRI organizational transformation model begins with “conversations that matter” about particular challenges faced by the university. “Conversations that matter” are meetings that result in a clear understanding of what needs to be done, who will do it, and when it will be done. Emerging from these conversations are organizational experiments, which are participatory learning processes that identify solutions (“ways that work”) that are tested in SUA’s informal system. From this process of learning in the informal system of the university, new or altered projects, programs, processes and procedures are adopted as part of SUA’s formal organizational structure as “changes that sustain.”⁴

From October 1, 2014 to September 30, 2015, iAGRI supported 23 organizational experiments (listed below). The changes brought about using iAGRI’s organizational transformation model -- solutions identified through experimentation and sustainably incorporated into SUA’s formal system -- will ensure SUA’s long-term viability as a premier African university in the 21st century.

Organizational Experiments Related to Institutional Capacity Building at SUA

1. Income Generation, Investment, and Asset Utilization
2. Classroom Services Unit and Projectors
3. Teaching Assistant Pilot Project
4. University Teaching and Learning Improvement Program
5. Mentoring/Gender Issues – Gender Policy Implementation Committee/Informal Gender Group
6. Strengthening Convocation (Alumni Association)
7. Revamping of SUA Website
8. Strengthening English Language Program
9. Digital Librarianship at SNAL
10. Strengthening Entrepreneurship Training
11. SUA Horticultural Demonstration Facility
12. International Scientific Conferences
13. Statistical Collaboration Laboratory
14. Induction Training for Deans, Directors and Heads of Departments
15. Quality Management in Procurement
16. Quality Management in Asset Management
17. Quality Management in Accounting
18. Quality Management in Human Resource Management
19. Quality Management in Auditing
20. Quality Management in Project Management

⁴ See the iAGRI Organizational Change Indicators in the annexes.

21. Monthly Leadership Forum
22. Commercial Soil Laboratory
23. Electronic Document Management System

These experiments are intended to change mindsets about the nature of leadership. They are “leadership laboratories” designed to bring about particular changes in areas of greatest need. The organizational experiments are designed to strengthen SUA’s capacity to manage university operations effectively and to promote organizational changes that are consistent with SUA’s strategic plan. Current experiments have resulted from interactions between the PMU staff and SUA staff.

Income Generation, Investment and Asset Utilization – With iAGRI's assistance, SUA brought experts from three East African universities to campus in June to review a SUA task force report on income generation. They met with University officials, observed SUA's income generating assets, and made recommendations about the way forward. University Council, at its June meeting, accepted the recommendations and instructed SUA management to move forward with an income generating plan that includes a Coordinator of Income Generating Units position and a university-owned private company. The Coordinator was appointed by SUA in September 2015. In August, iAGRI sponsored a study tour to Kenya by SUA’s Vice Chancellor, Chairman of the University Council, and other SUA officials to observe income generating projects at three Kenyan universities and to bring back income generating ideas relevant to SUA. This tour was a follow-up to a study tour by lower-level SUA officials to Kenyan universities in January 2015 to investigate resource mobilization strategies.

Quality Assurance and Promotion Bureau - In response to a SUA administration request, iAGRI has continued to strengthen the university’s Quality Assurance and Promotion Bureau (QAPB), a unit designed to improve standards and performance related to academic activities, physical facilities, services and student experiences. iAGRI currently supports QAPB to implement three organizational experiments:

- **Classroom Services Unit and Projector Installation** – The PMU continued to work with QAPB representatives to improve the learning environment in SUA classrooms. The one-year iAGRI-funded contract of the interim QAPB administrator ended on June 30, and SUA has agreed to hire a permanent full-time administrator to continue the activities of the Classroom Services Unit. SUA is in the process of advertising the position. As part of improving classroom facilities, iAGRI has agreed to install five additional LCD projectors in classrooms on SUA’s main campus and 10 additional projectors on the Solomon Mahlangu Campus. iAGRI agreed to fund these projectors on the condition that SUA first repairs the classrooms and enhances security. The QAPB has finalized plans to repair the classrooms in which projectors are to be installed and it has submitted a budget for this purpose to SUA administration.
- **Teaching Assistant Pilot Project** – This project is designed to reduce the teaching workload of the SUA academic staff and to prepare graduate students to be teachers. Over the reporting period, iAGRI provided financial support for TAs and refurbished their offices. The Department

of Animal Science and Production, the Department of Veterinary Microbiology, and the Institute of Development Studies participated in this program. Nine graduate student applications were approved and these students were hired as Teaching Assistants through a program administered by the QAPB.

- **University Teaching and Learning Improvement Program** – This activity is designed to improve the quality of teaching at SUA through the provision of short courses on alternative teaching/learning methodologies and practices. The courses focus on how to improve teaching effectiveness and how to increase student learning. Training activities are designed to address critical areas identified through a needs survey of teaching staff. During the past year, this program emphasized how to incorporate the internet into classroom teaching and the use of other new teaching technologies. Two UTLIP trainings were also conducted during this reporting period. The QAPB conducted a consumer satisfaction survey and revised a proposal that will be submitted to iAGRI for future funding.

Mentoring Program – A mentoring evaluation report was prepared during the past year. This report highlights key aspects to be incorporated into a revised SUA mentoring model. Plans were made to test this revised model with a second round of mentoring over the coming year.

Strengthening Convocation – The Convocation is SUA's alumni association. Eligible members include everyone who has ever studied at SUA. A Convocation Liaison Officer was hired during this reporting time. The SUA Executive Convocation Committee (ECC) completed the alumni database and initiated formal communication with alumni inside and outside Tanzania. Additionally, during this period, the ECC produced a final draft of its strategic plan, which was approved at the Convocation Annual General Meeting in November 2014. Plans were made by Convocation to print and distribute copies of the document during the coming period.

Revamping of SUA Website – Over the past year, PMU staff worked extensively with SUA Computer Center staff members who are responsible for maintaining and upgrading the website. Several strategies were used to identify individuals or local businesses that would be able to not only build a new site for SUA, but also to build the capacity of Computer Center staff to manage and maintain the new site once completed. Unfortunately, SUA and iAGRI were unable to identify outside service providers that met the specific and highly technical requirements for the activity. Consequently, iAGRI has requested that SUA hire additional skilled and experienced full-time staff to create and maintain a robust web presence. iAGRI and the Computer Centre are nearing agreement on the hiring of a webmaster and an online communications specialist, with iAGRI providing funding for the new positions for one year and SUA providing the funding thereafter.

Picture 6: English Language Training



Staff from Virginia Tech's Language and Culture Institute held a staff development short course at SUA focused on how to improve the teaching of English language and communication skills.

English Language Program – The English Language Program (ELP) addresses challenges in the English Language and Communications Skills program at SUA. It strengthens the foundation of English language teaching and learning at SUA and employs innovative strategies to make SUA a more supportive learning environment for English language. A comprehensive package of activities, based on the findings of a study tour held in 2014, was designed and approved during the reporting period. Achievements in the implementation of these activities have included (a) revising SUA's English language curriculum and teaching materials, (b) providing a week-long short course with online follow-up on language teaching that was led by staff from Virginia Tech's Language and Culture Institute, (c) applying for and receiving support from the US Department of State's English Language Specialist and English Language Fellows programs, (d) securing space and initiating renovation of an English Language Resource Centre, (e) conducting a market study of demand for English language training which SUA will use to revise its business plan, and (f) documenting learning outcomes resulting from iAGRI-funded activities.

Digital Librarianship at SNAL – iAGRI is supporting Sokoine National Agricultural Library (SNAL) efforts to improve digital library services, including increasing the availability of electronic resources, implementing a resource management system, and promoting the use of new tools such as LibHub. During FY2014-15, iAGRI contracted with a company, SemperTool, to enhance SNAL's knowledge and utilization of its resource management system. In conjunction with the training, iAGRI sponsored the development of an online Guide to Digital Librarianship (GDL), which serves as an ongoing knowledge base and networking hub for librarians. The GDL is available at <http://gdl.sempertool.dk/>. In addition, iAGRI approved a phase II digital librarianship proposal from SNAL. Activities implemented under this proposal have included (a) printing and displaying marketing materials to promote LibHub at key locations in the library, (b) user training on the ABCD database for digital library management, (c) planning and initiating a library champions program that will enhance staff utilization of LibHub, and (d) performing a technical evaluation of power backup needs.

Strengthening Entrepreneurship Training – This activity is a partnership between iAGRI and the Sokoine University Graduate Entrepreneurs Cooperative (SUGECO). The mission of SUGECO is to prepare, enable, and support knowledge-intensive, innovative entrepreneurs as they build successful businesses along agricultural and agribusiness value chains throughout Tanzania. Through its support of SUGECO, iAGRI is helping SUA graduates create self-employment and helping to increase connections between SUA and the private sector. Major activities undertaken during the past year were (a) preparation of organizational manuals, (b) discussion of potential partnerships with Geita Gold Mine and COSTECH, (c) negotiation with Africa Lead for additional capacity building support (d) provision of business skill training to over 50 individuals; (e) procurement and supervision of CRDB Bank loans for SUGECO-supported individuals; and (f) the creation and convenement of a SUGECO board of directors.

Horticultural Demonstration Facility – iAGRI continued to support the development of the commercial horticultural facility administered by the SUA Department of Crop Science and Production. This project is a collaborative effort involving TAPP, TAHA, SUA and iAGRI. TAPP ended as a USAID project in August, but the HDF facility continues to be supported by TAHA, SUA and iAGRI. A campus store for the sale of produce from the facility was renovated and a shopkeeper was hired. Four students from Tumbi Agricultural College in Kibaha undertook a three-week field practical training at the facility. Also farmers from Zanzibar, Dar es Salaam, Morogoro and the Coast region participated in a one-day practical training at the facility. This event was organized by SUA and TAHA. The HDF also conducted a Farmer’s Field Day in July, an event that was attended by about 300 farmers, extension officers, SUA students and agricultural input suppliers from Morogoro and the surrounding area.

Picture 7: Climate Change Conference



Participants follow deliberations at the “Climate Change and Multi-Dimensional Sustainability in African Agriculture” conference organized by SUA and OSU, and held at the Hilux hotel in Morogoro in June.

International Scientific Conferences – iAGRI sponsored a three-day international conference on Climate Change and Multidimensional Sustainability in African Agriculture in Morogoro in early June. The conference was co-organized by SUA and The Ohio State University, and brought together over 100 scientists and agribusiness experts from around the world. It was funded primarily by USAID, with

additional support from FAO, NORAD, The Ohio State University and the Norwegian University of Life Sciences. Springer will publish a book containing key presentations made at the conference in 2016. Also during the past fiscal year, iAGRI distributed copies of a book containing papers at the international conference it cosponsored at SUA in 2013. The theme of that conference was Sustainable Intensification to Advance Food Security and Enhance Climate Resilience in Africa.

Statistical Collaboration Laboratory – iAGRI continues to support development of the Sokoine University of Agriculture Laboratory for Interdisciplinary Statistical Analysis (SUALISA) for staff and student researchers and external researchers. OSUC-originated technical support and related training were provided by Virginia Tech. iAGRI-funded student, Emmanuel Msemu, completed his Master’s training at Virginia Tech and returned to SUA and works in the laboratory. Dr. Benedicto Kazuzuru, a SUA faculty member, completed a six-month residential program at a statistical collaboration laboratory at Virginia Tech and returned to SUA to lead this effort. In the meantime, Adam Edwards, a PhD student in statistics at Virginia Tech, initiated a six-month program at SUALISA to train and mentor staff at the laboratory. Dr. Eric Vance of Virginia Tech visited SUA to assist in the continued operation and further development of SUALISA. His interactions with SUALISA staff focused on the sustainability of the program. While at SUA he accompanied SUALISA staff on visits to key agencies, including the National Bureau of Statistics in Dar es Salaam to discuss SUALISA’s outside statistical consulting services.

Induction Training for New Deans, Directors and Department Heads – Typically, SUA staff do not receive orientation or training on their new responsibilities prior to becoming Department Heads. During the past fiscal year, iAGRI held two orientation sessions for SUA staff that assumed new mid-level leadership positions. They were fully supported by SUA Top Management including the VC and the two DVCs. These activities occurred in late 2014, and in early 2015.

Quality Management – iAGRI and the university administration are undertaking six organizational experiments dealing with applying quality management principles to various areas of administration at SUA. Each experiment aims to improve business services delivery at the university and is based on the understanding that SUA cannot excel in its core mandate of teaching, research, and outreach if support services are not delivered efficiently and effectively. During the reporting period, iAGRI engaged consultants to deliver tailored training and engage SUA stakeholders in identifying and implementing system changes that will improve service quality in the following areas:

- Quality Management in Procurement
- Quality Management in Asset Management
- Quality Management in Accounting
- Quality Management in Auditing
- Quality Management in Human Resource Management
- Quality Management in Project Management

Consultants were provided by Kilimanjaro International Corporation (KIC). A program manager was contracted and assigned to SUA through the end of July to implement the program. The inaugural training sessions were held in April. Approximately 82% of the eligible SUA administrative staff members were engaged in the training. A parallel event took place in May, and it focused on the Public Procurement Act of 2011 and related regulatory provisions enacted in 2013. The Vice Chancellor, Deputy Vice Chancellor–Academic, and Deputy Vice Chancellor–Administration and Finance, administrative department heads, and many administrative staff persons participated in the training program. The first phase of training ended July 31, 2015 having achieved more than 80% of the training goals identified at its onset.

Monthly Leadership Forum – This forum is designed to build the capacity of middle-level managers at SUA, including Deans, Directors and Heads of Departments. It is focused on assisting them to manage their responsibilities as leaders of their respective units. However, more importantly, this forum is designed to help them provide leadership to the transformation process that is being undertaken at SUA under the restructuring plan approved by the SUA University Council in 2014. The first monthly forum was held in March 2015 and other sessions were held in during subsequent months. The forums emerged out of the Induction Training for Deans, Directors and Heads of Departments, which was held in 2014.

Commercial Soil Laboratory – Tanzania currently has no soils laboratory that provides both soil analyses and related fertilizer recommendations. iAGRI partnered with the Soil Science Department at SUA to identify the equipment, physical infrastructure, and management structure needed to establish a commercial soils lab during the past year. The commercial lab will provide high-demand services to the agricultural sector and it will generate income for the department and university. iAGRI worked with the department to finalize the plans and related budget.

Electronic Document Management System – During the reporting period, SUA’s Computer Centre submitted a proposal to iAGRI to develop and implement an electronic document management system. iAGRI agreed in principle to fund the proposal and worked with SUA staff to refine the initial draft. The plan is expected to be finalized soon after the start of the next fiscal year. It will include the creation of a document management system, including a project management scheme and related additional training needs.

Additional Investments in Institutional Capacity Building and Program Strengthening at SUA

Innovation Portfolio – The Innovation Portfolio (IP) was launched in March 2014 to address information challenges on both the demand side and the supply side of the market for hard and soft technologies. On the former, potential clients are unaware of the services or benefits of innovation services that exist at SUA, while on the supply side, SUA service providers are unaware of the opportunities or appropriate innovations in the market place. During the past fiscal year, the IP focused on creating demand for innovation services. It entered into partnerships with two private sector companies and two

international non-governmental organizations. Two drip irrigation innovations, controller and emitter based systems, were taken to the market by iAGRI's IP. First, the drip irrigation systems were tested in the farmers' fields prior to being fully commercialized. Then, a local manufacturer was identified and is working with the iAGRI innovators to further improve the systems and reduce production costs. Through the process of working with the investors, we have learned that many of SUA's research findings are not market ready and that investors require an opportunity to tweak or adjust innovations before they are willing to buy them.

Picture 8: Innovation Portfolio



Gender Issues – Several interventions designed to increase gender mainstreaming at SUA were implemented over the past year. They include discussions with administrative staff about gender gaps and discrimination practices affecting female and male administrative staff in the workplace. These discussions raised the levels of gender awareness among the staff. An open seminar on the role of men in gender equality was conducted in order to increase understanding of the role and positioning of men regarding gender equality issues. A total of 29 secondary schools in Mbeya, Rukwa, Coastal and Dar es Salaam were visited by SUA faculty and staff, and a total of 14,270 girls and 15,555 boys were reached through the visits. A Morogoro municipal school delegation consisting of 80 girls was hosted at SUA. These visits were designed to sensitize both girls and boys to take up science subjects while in secondary school and in further studies, to create awareness about SUA degree programs, and to provide them with career guidance. Promotional DVDs about SUA and science subjects were distributed to the schools visited. A study on sexual harassment was undertaken to collect information on this topic. The information will be used by the Gender Policy Implementation Committee and other relevant units to develop evidence-based solutions to address sexual harassment including the formulation of a comprehensive institutional anti-sexual harassment policy. Results of the study were used to identify short term and long term strategies to address on campus sexual harassment behavior. Requests for nominations of individuals to reconstitute the Gender Policy Implementation Committee were sent to

various units on campus by the new committee chair – the Deputy Vice Chancellor for Administration and Finance.

Departmental External Program Reviews at SUA - At the request of SUA's Crop Science Department Head, Dr. John Cardina and Dr. Matt Kleinhenz, OSU plant scientists, spent a week on the SUA campus meeting with members of the department and its stakeholders. These meetings served as a key input to a strategic visioning activity designed to lead to recommendations for changes in departmental curriculum, research and outreach activities. The meetings were a first step in designing a departmental restructuring plan that more effectively responds to the needs of students and stakeholders in the public and private sectors of Tanzania. Their report contained recommendations for improvements and suggestions about how to implement them. Leadership, database technology, academic programs, income generation, and vision implementation were major topics addressed in their report.

SUA Faculty Visits to the U.S. - Several SUA staff travelled to OSUC partner institutions for short-term training during the past year. Their interactions with counterparts centered on the specific areas of interest of the visitors. It is anticipated that these visits will lead to additional iAGRI-funded programming at SUA, designed to strengthen teaching, research and administrative capacity.

- **Abel Kaaya** – Prof. Abel Kaaya visited the Ohio State University in Spring, 2015, primarily to work with Ph.D. student, Boniface Massawe, for whom he served as co-supervisor. While in the U.S. he worked with him and his advisor, Prof. Brian Slater, on refining his dissertation. He also presented a seminar about soil research in Tanzania and interacted with other faculty members in the soil science group. Among those with whom he interacted were Prof. Warren Dick, who oversees the Star Soil Lab located at the Ohio Agricultural Research and Development Center in Wooster, Ohio. Drs. Kaaya and Dick explored how they can work together to improve the soil laboratory on the SUA campus.

- **Jovin Mugula** – Dr. Jovin Mugula visited three OSUC member institutions in spring, 2015. His primary objective was to work with student, Juma Mmongoyo, and his co-supervisor, Dr. Gale Strasburg, on dissertation research. While at Michigan State, he met with other staff in Food Science and Nutrition and planned a visit by Dr. Strasburg to SUA, which occurred in August. Dr. Mugula also visited the Ohio State University campus where he met with Ph.D. student, Rita Mirondo, her advisor, Dr. Sheryl Barringer, and with M.Sc. student, Joan Msuya, and her adviser, Dr. Sanja Ilic. He also toured the Ohio Food Industry Center, the OSU extension arm to agribusinesses in Ohio. He ended his tour at Florida where he met with iAGRI M.Sc. student, Gloria Kuhumba, for whom he is also serving as a co-supervisor, and her advisor, Dr. Amy Simonne.

- Dr. Didas Kimaro** – Dr. Didas Kimaro visited The Ohio State University during summer, 2015. While on campus, he discussed his iAGRI-funded collaborative research project with Prof. Rattan Lal, Co-PI for the project. He also worked with him and other collaborators on publications to emanate from the research and presented a seminar on the project. He visited the Coshocton

watershed research station and the Star Soil Lab in Wooster. These activities provided him with an opportunity to interact with other soil scientists on the OSU campus. He also attended a Global Workshop on Digital Soil Morphometrics at the University of Wisconsin prior to returning to Tanzania.

Picture 9: Short Term Training



Prof. Gireesh Rajashekara, The Ohio State University, presented a seminar on “Foodborne Pathogens: Current Issues and Novel Control Strategy” while on the SUA campus working with iAGRI- funded PhD student, Isaac Kashoma.

IR 3.1 SUA Capacity Building – Short-Term Training

Short Courses Offered – Several faculty members from OSUC member institutions and professionals from other Tanzanian institutions offered 12 short courses to SUA staff and graduate students during the past fiscal year as described in the table below. They were widely advertised and well attended. Attendees were requested to provide feedback on the content and operation of the courses.

Short Courses Offered during the Past Fiscal Year

<u>Short Course Title</u>	<u>Dates</u>	<u>Facilitators</u>	<u># Participants</u>
Scientific Data Management	3/30-4/01	Susan Balabi Vincent Oeba	21
Preparation of Policy Briefs	5/13-15	David Nyange Anne Nyamu	20
Data Analysis – Use of SPSS	7/13-17	Zena Mpenda Kenneth Kitundu	25
Research/Project Proposal Writing	7/27-31	John Tenywa Paul Nampala	25
Data Analysis - Statistics with R	8/10-14	Emmanuel Msemo Adam Edwards	25

Qualitative Research Methods	8/17-21	Adelia Bovell Benjamin	20
Weather Data Management	8/17-18	Dave Lundberg Siza Tumbo	12
Cohort IV Orientation	9/16	Emmanuel Rwambali Lucy Chove	40
Technology Field Testing	9/17-18	Luseko Chilangane	40
Agri-business Plan Development	9/22-23	David Hahn Jeremiah Makindara	25
Broiler Production Training	9/28-30	Shahn Bisschop Tony Willis	21
Randomized Control Trials	9/28-10/1	Abdoul Sam Richard Gallenstein	23

Much of the training was provided by instructors from SUA and from other Tanzanian and East African institutions to resource the short courses. Some of the instructors were SUA staff who took the same short course the previous year. In this sense, capacity building during the previous year resulted in the training of trainers who subsequently passed on their expertise to others. Other instructors included staff from universities in East Africa and from Tanzanian institutions such as MAFC. iAGRI Cohort 2 Student, Emmanuel Msemo, facilitated the week-long course on “Statistics with an R”. SUA staff and graduate students represented the majority taking the course. They are all actively involved in research. Most of the short courses offered were focused on increasing research capacity, relating specifically to data collection, data analysis and/or the preparation of research proposals and the presentation of results in the form of scientific publications and policy briefs.

IR 8 – Enabling Policy Environment for Agriculture and Nutrition

IR 8.1 Agricultural Policy Capacity Development at SUA

iAGRI continued to work with the SUA Department of Agricultural Economics and Agribusiness to develop its capacity to undertake agricultural policy analyses. This dialogue directly involved SERA as a potential partner. Discussions have occurred regarding the creation of an Agricultural Policy Unit in the Department.

IR 8.2 Agricultural Policy Briefs

During the past year, the PMU worked with a consultant to develop policy briefs originating from iAGRI-funded research on the National Agricultural Input Subsidy program, early child nutrition, and cashew marketing. And, as previously noted in this report, a short course was offered on how to communicate research findings to policy makers by David Nyange, MSU, and Anne Nyamu, Regional Strategic Analysis

and Knowledge Support System (ReSAKSS). Course participants worked in groups to create and present a policy brief based on their own research after learning the basics of effective policy-brief writing.

Project Administration

Project administrative activities support the achievement of iAGRI objectives as reflected by the intermediate results found in this report. They are discussed below.

- i. **Update Data for M&E Plan** – The Project Management Unit (PMU) continued to update data for the M&E Plan. It worked closely with the USAID/Tanzania Mission in the conduct of this activity. It collected data on appropriate Tanzania Feed the Future indicators for the project, but also on other custom indicators. Recently it began collecting data of specific indicators related to institutional capacity building experiments and related activities on the SUA campus. Data on intermediate results achieved during the past year are found in this report.
- ii. **Collaboration with FtF Partners in Tanzania** – Over the past year, iAGRI collaborated with SERA on agricultural policy matters. This included the preparation of a proposal to continue research on rice markets in Tanzania, other policy efforts, and development of a study on land access. The latter will include direct involvement of researchers from Michigan State and from SUA's Department of Agricultural Economics and Agribusiness in support of the Agricultural Policy Seminar Series described previously.

A second collaboration involves placement of several iAGRI degree trainees with partner institutions. Research collaboration with partners also continued, based on joint identification of research topics germane to these partners and iAGRI. Several iAGRI students conducted thesis and doctoral research with researchers from Africa Rising, IITA, and AVRDC. This activity was strengthened by the receipt of Borlaug fellowships by several iAGRI-funded scholars pursuing degrees at OSUC member institutions. A third collaboration was initiated between iAGRI, TAHA and TAPP. It provides training for horticultural producers at the Horticultural Demonstration Facility and is viewed as an important effort to strengthen public-private linkages between the university and the horticulture industry.

- iii. **Project Updates for Tanzanian and U.S. Feed the Future Partners** – In an effort to keep stakeholders in Tanzania and the U.S. informed about the activities being undertaken under iAGRI, the PMU and ME continued to prepare occasional program updates.⁵ In addition, the organization's website, www.iagri.org, has been redesigned to provide stakeholders with more specific project information and regular updates.
- iv. **Feed the Future Partners Meeting in Tanzania** – The PMU Project Director and Deputy Director continue to interact on a regular basis with Feed the Future partners in Tanzania. These meetings represent opportunities to check signals with counterparts of these partner programs,

⁵ See annex of this report for copies of these updates.

including the identification of opportunities for future collaboration. The focus of iAGRI on degree training and agricultural research complements the focus of these other programs, thereby giving iAGRI opportunities to provide unique inputs to other projects.

- v. **Dissemination of iAGRI Accomplishments through Local Media** – The PMU staff provided information about iAGRI activities to the local media in Tanzania. This activity is designed to increase awareness of the impact of SUA through iAGRI on food security as well as related investments being made by USAID/Tanzania. It also informs the public about potential opportunities for them to access resources that can support agricultural activities in their communities.

Picture 10: iAGRI Participation at Nane Nane Farmer's Day Exposition in Morogoro



SUA TV crew recording a special program on iAGRI's participation at the Farmers' Day exhibitions in Morogoro, popularly known as Nane Nane. iAGRI's booths at the fair were manned by iAGRI students, who featured results of their student research work. In addition, two iAGRI collaborative research projects and the Innovation Portfolio were represented.

- vi. **Nane-Nane Exhibits** – Several SUA staff and students receiving support from iAGRI presented the results of their research at the annual Nane-Nane exhibition in Morogoro. These presentations ranged from alternative agricultural practices to new foods produced from local crops, to the nutrient content of foods. iAGRI had two exhibits at the fair, one at the SUA site and one at the Feed the Future site. They were well attended and judged to be an effective outreach activity by SUA and iAGRI.
- vii. **Meeting of OSU Consortium Institution Representatives** – The fourth annual meeting of OSU consortium member representatives was held at OSU in April. Participants included staff from the iAGRI ME and the PMU. Members of the PMU participated in this meeting via electronic communication. Discussion focused on activities in which consortium staff are directly involved, namely, training and research. The meeting was also an opportunity for those present to be updated on the latest developments in the field, including efforts directed towards capacity building at SUA.
- viii. **Weekly Joint Video Meetings of PMU and ME Staff** – In order to facilitate coordination of project activities, the PMU and ME staff held weekly video conference meetings to discuss

project planning and implementation. These meetings have improved project management efficiency.

- ix. **BIFAD Visit to Tanzania** – A BIFAD team headed by Dr. Brady Deaton, Chairman of the Board for International Food and Agriculture Development, and also consisting of Susan Owens, USAID/Bureau for Food Security, and Montague Demment, Association of Public and Land-Grant Universities (APLU), visited the Project Management Unit in Morogoro to review the iAGRI Program. They prepared a report entitled, *Report on BIFAD Visit to Sokoine University of Agriculture (SUA) and Innovative Agricultural Research Initiative (iAGRI)*, which was distributed by BIFAD on September 16, 2015. This report reviewed the several dimensions of iAGRI and recommended additional activities that might be undertaken by the program. The report is to be discussed at the next BIFAD Meeting which will be held at Purdue University on October 21. Overall, the report was very favourable regarding the innovations taking place in regard to degree training, research and institutional capacity building at SUA.

5. Activities Implemented in Zanzibar

Ph.D. Degree Training – Omari Haji Ali, a Cohort II PhD student from Zanzibar, continued to attend classes at SUA. He has now completed his research proposal, which has been approved by SUA.

M.Sc. Student Degree Training – Hilali Saleh Hilali, a Zanzibar Student from Cohort III, completed his program at the Punjab Agricultural University and returned to Zanzibar. Hilali has worked closely with rice breeders on his thesis research. The Punjab Agricultural University has substantial research capacity in rice production, which is a major component of the rice-wheat system prevalent in the Indo-Gangetic plains region of India. Plans are to continue collaboration.

B.Sc. Degree Training of Students from Zanzibar – iAGRI converted two M.Sc. degree training slots into 10 undergraduate degree slots at SUA and reserved them for students from Zanzibar in 2012. This decision was prompted by the fact that iAGRI was unable to find students from Zanzibar with adequate qualifications to pursue graduate degrees. Three of the ten students continued their studies at SUA during the past three months.⁶

Climate Change Conference Presentation by Zanzibar Researcher – iAGRI sponsored Mohamed Rashid from Zanzibar's Kizimbani Agricultural Training Institute (KATI) to attend the Climate Change Conference that took place in Morogoro in the first week of June. Mr. Rashid made a presentation titled, *Pro-poor chains linking smallholder farmers and the Zanzibar tourism industry*. His presentation highlighted the importance of agriculture in Zanzibar. It is the second largest employer and an important driver of growth that accounts for approximately 30% of its GDP. He also addressed challenges facing smallholder farmers, which include the extended length and complexity of existing value-chains, and the

⁶ The other seven students initially placed at SUA had to terminate their studies due to inadequate performance.

weak enforcement of market rules that reflect unfair and inequitable market principles. Mr. Rashid's participation and presentation at the conference were significant, since sharing research about Zanzibar with a prestigious international audience provided him with the opportunity to network, raise the profile of his institution, and create new collaborations.

Tripartite SUA/U.S./Global South Cooperation

Strengthening of SUA's linkages with other Global South institutions is another major iAGRI objective. These activities are designed ultimately to improve agricultural productivity in Tanzania by gaining access to appropriate agricultural technologies, research practices, and related policies in other partner institutions of the Global South. Long-term collaborative linkages will facilitate these technology transfer processes.

- i. **RUFORUM Placement of Trainees** – OSU and the PMU continue to work directly with RUFORUM to facilitate the placement of iAGRI students at RUFORUM member institutions. This activity is the responsibility of the iAGRI Training Committee. RUFORUM has placed several additional students as part of Cohort V. RUFORUM places students for study at universities and takes responsibility for monitoring their progress. The latter includes attention to the completion and presentation of graduate student research. Thus far, RUFORUM has placed students at Stellenbosch University; Lilongwe University of Agriculture and Natural Resources, Malawi; University of Nairobi; Egerton University; Kenyatta University; Jomo Kenyatta University of Agriculture and Technology; University of Zambia; and Makerere University. Through these linkages, SUA has access to technologies and cutting edge policy, production and organizational research that are relevant to Tanzanian conditions. These student linkages also help develop additional networking for SUA research and academic staff.

- ii. **Non-African Global South Institution Student Placements** – Students undertaking their M.Sc. studies at Punjab Agricultural University continue to make progress. The two students who were placed as members of Cohort III have completed their programs in July and have already returned to Tanzania. The other four students are continuing with their programs at PAU.

Students, who were in place at PAU over the past two years include:

- Hilali Saleh Hilali, Plant Breeding (Graduated)
- Emmanuel Lulandala, Agribusiness (Graduated)
- Amina Ahmed, Food Technology (Thesis Research)
- Meshack Tegeye, Food Technology (Thesis Research)
- Nengilang'et G. Kivuyo, Food and Nutrition (Thesis Research)
- Ashura Dulazi, Soil Science (Thesis Research)

6. Lessons Learned

Organizational Transformation Activities

In the last week of August, iAGRI sponsored a week-long study tour to Kenya that included top administrators from SUA and members of the SUA University Council. They visited Egerton University, Kenyatta University (KU) and Jomo Kenyatta University of Agriculture and Technology (JKUAT). *An important lesson learned during this tour was that key learning can occur through interaction of individuals in similar leadership positions in higher education.* Tanzanians became aware of alternative ways to address some of the key issues they face in charting SUA's future. Among the mechanisms they witnessed were forms of stakeholder interaction and resulting stakeholder support for programs, alternative ways to generate income for higher education institutions, and ways to improve curriculum and student learning.

With support from iAGRI, SUA is undertaking 23 organizational experiments designed to enable it to become a better university. The iAGRI approach to organizational transformation at SUA is to support innovative ideas as they develop in SUA's informal system and to use them to reform SUA's formal system. This is accomplished through a three-stage conversation-based process defined in a previous section of this report. *An important related lesson learned is the importance of a participatory approach to organizational transformation activities.* We are already engaging SUA administrators in conversations about new ways to do things and how to get them done. However, we also need to engage them and other relevant stakeholders in specifying objectives, challenges and opportunities that will affect the search for *Ways that Work (WTW)*. This implies that, in initiating each organizational experiment, a more thorough exercise be undertaken as part of the *Conversations that Matter (CTM)*, including full consideration of objectives and constraints faced in addressing a particular problem prior to moving on to consideration of the next stage of the transformation process.

A related lesson learned is that organizational experiments need to be continuously scrutinized throughout the transformation process in order to determine what it will take to make them successful. Giving special attention to internal and external factors that support or challenge an activity will lead to better planning and better strategies. The proposed additional step identified in the *Conversations that Matter stage* addresses this need early in the planning process. However, more attention also needs to be given to analyses of proposed identified solutions in order to increase the chances of their being fully implemented. This implies the need for an additional step in the *Ways that Work stage*, namely an analysis of the benefits, costs, and challenges related to solution implementation.

Training Activities

A major iAGRI objective has been to offer graduate degree training to 135 Tanzanian students who have been placed at institutions based in the United States, Africa, and India. Student degree programs include research under the supervision of advisors at respective host institutions. For various reasons, some students fail to initiate interaction with their supervisors. In fact, some supervisors have found it necessary to look for ways to link with their students. *A lesson learned is that students may require*

special orientation about how to interact with supervisors in the context of undertaking graduate education programs prior to the initiation of these programs.

Research Activities

iAGRI has supported two general categories of research. The first is research conducted by sponsored students. The second is the iAGRI Collaborative Research Program that involves researchers from U.S. universities, SUA and the MAFC. Experience has shown that many researchers tend not to hold themselves fully accountable for funds allocated to them. Both programs require that researchers initially prepare project budgets and then retire advanced funds according to predetermined schedules. Recent experiences have shown that some researchers fail to adhere to these schedules. *A lesson learned is that participants need to be reminded of the need to adhere to related program expectations as well as other related project management requirements. Researchers may also be required to take imprest advances in smaller amounts that can be easily managed and accounted for before taking another advance.* As the program has matured, iAGRI staff members have found that researchers who were selected through a competitive process are more likely to manage pre- and post-selection research project processes well than those found through a pre-identified solicitation process. Although it makes good sense to pre-identify priority agricultural development constraints for research, *the lesson learned is that care should be taken to select researchers who are competent and who have demonstrated the ability to follow through on their research in an organized manner.*

7. Planned Activities

The PMU and OSU/ME will continue to focus on implementation of objectives of the iAGRI program over the coming year. Details are found in the Annual Work Plan for FY 2015-2016.

Long-Term Graduate Degree Training – The amendment to our iAGRI Cooperative Agreement increased the number of students to be trained to 135. As of fall, 2015, iAGRI placed a total of 136 students in graduate degree programs and 10 students from Zanzibar in undergraduate degree programs at SUA. Over the coming year we will continue to monitor the progress of students in their degree programs. We anticipate that the Ph.D. students placed as part of Cohort II will all complete their programs and return to Tanzania during this period. We also anticipate that all Cohort III and Cohort IV M.Sc. students will complete their respective programs. Exceptions may be students placed at SUA and at RUFORUM member institutions due to the involvement of external examiners in the evaluation of student theses. This process frequently extends the time from student completion of thesis draft to submission of final draft. We will also continue to monitor the classroom performance of the 12 students comprising Cohort V.

Research – In the next quarter, we expect that the following activities related to Phase I research projects will be implemented:

- Two PIs will visit their U.S. counterparts to work on several activities in their respective projects. They will work with counterparts on project data analysis, preparation of journal articles for

publication, identification of potential future collaborative research beyond the life of iAGRI, and they will attend scientific conferences in their respective disciplines.

- PIs will work with their counterparts to complete the write-up of final project reports for seven out of the eight projects.
- PIs and their counterparts will develop training manuals, extension materials, and flyers.
- PIs and their counterparts will continue to draft papers for publication in refereed journals and conference proceedings.

We anticipate continued substantial involvement of OSUC counterparts in this finalization phase. Likewise, iAGRI will continue to monitor the projects to ensure that implementation moves in accordance with the plans.

Phase II Collaborative Research – This phase consists of three projects which are at different stages because their commencement dates differ significantly. As opposed to Phase I (which was on competitive basis), the mode of mobilizing researchers for Phase II was on a solicited basis. We anticipate Phase II projects to continue to evolve. Concrete field activities are planned over the next three months.

Short Term Agricultural Policy Studies – An “Agricultural Land Access” study will be undertaken. It is a joint activity involving iAGRI, SERA, Michigan State University and MAFC. In the next quarter, the team will develop sampling strategies, will establish a sampling frame for farms to be visited, and prepare research samples in selected regions. Since these activities require considerable preparation, actual field surveys will not begin until in January 2016.

SUA Capacity Building – During the coming year we will continue to emphasize collaboration with SUA to facilitate its efforts to adjust to rapidly changing social and economic conditions in Tanzania. In addition to ongoing efforts to improve infrastructure on the campus, we will provide short-term capacity-building inputs for SUA and MAFC staff and students in the form of short-courses, workshops and seminars, as well as short-term training for them at OSUC member institutions. However, we intend to concentrate our efforts on the restructuring process which is occurring at SUA, including expanded linkages with stakeholders, particularly in the private sector, and identification and facilitation of alternative sources of revenue generation. We will also follow up on improving management quality at SUA. This activity will continue to focus on changes in project management, fiscal management, project development and auditing procedures. By the end of the year, we hope to have supported SUA’s attempt to implement the recommended changes which emerge from the Kilimanjaro International effort in quality management training.

Quality Management – Planned activities for the next year will be to support SUA as they sustainably implement the system changes identified and initiated under the Quality Management Training Program led by Kilimanjaro International consultants. The six organizational experiments are in the areas of procurement, asset management, accounting, auditing, human resources, and project management.

Monthly Leadership Forums – iAGRI will continue to sponsor monthly leadership forums on a bi-monthly schedule. Themes for these forums are going to be engaging and participatory. Plans are underway to invite external speakers/resource persons to the forums during the next quarter.

Horticultural Demonstration Facility – This facility will continue to offer the Farmers Field Day. Plans are to expand its field operations by adding an additional acre. TAHA will provide the funding for this expansion.

SUA Convocation – The Executive Committee of the Convocation planned to have a “Homecoming Week” just prior to graduation day in November, 2015. The event will be designed to strengthen alumni relationships and fund raising for construction of the student center. Planned activities during that week will include a symposium, sports events, a charity walk, community service, talent shows and dance competitions and a fundraising dinner party.

Revamping of SUA Website – iAGRI plans to continue helping SUA to redesign its website, given that it has agreed to acquire the technical and administrative capacity on its staff to oversee the redesign, to maintain the site once the redesign is completed, and to generate quality content. Over the next year, a website company will be hired to create the new site. Training sessions will be offered to content managers throughout the university on the new use of the new CMS and best practices in content generation.

Promoting Digital Librarianship at SNAL – iAGRI and SNAL have been working together since 2013 to improve access to and utilization of electronic resources at SUA. In the next year, support to SNAL will include installation of a power backup system to enhance reliability of access to the e-documents. iAGRI will also help SNAL promote LibHub within and beyond SUA. iAGRI will also help train and facilitate the activities of LibHub champions who will spread the word about LibHub, and help departments utilize it.

English Language Program – Since November 2013, iAGRI and SUA’s Department of Social Sciences have been working together to improve English language resources and outcomes at SUA. Support will continue in this coming year to enhance the capacity of the English Language Resource Centre. Activities will include renovation of the ELRC and classroom, furnishing the centre and the classroom, as well as engaging SUA students to help maintain technologies in the ELRC and provide technical support to clients.

Innovation Portfolio – Apart from having a new website that was redesigned in the last fiscal year (<http://iagri.org/innovation-portfolio/>), the IP is expecting to have a new strategy approach, which will be to work with intermediary organizations that support agricultural production. Special emphasis will be given to smallholder farmers and small-medium sized enterprises (SMEs) who are involved in marketing, processing, and the supply of agricultural inputs and tools. A demand driven, market-led approach to innovations will be implemented addressing identified needs on both the supply and

demand sides as well as strengthening the capacity of the supply side (innovators) to generate innovations on a continuous basis. Proposed interventions will emphasize training of innovators through coaching, networking and ways to pitch their innovations to investors when they have the opportunity to meet them. On the demand side, SUA's expertise will be marketed through development of promotional and marketing materials.

8. Special Issues

Completion of iAGRI Building – Completion of the second floor of the iAGRI Office Building has taken longer than originally planned. Although initial projections were to have it completed at the end of February 2015, it remained uncompleted at the end of the fiscal year. Given the large number of students returning to Tanzania to conduct field research for their theses, the increase in PMU staffing as capacity building activities have increased in number and size, and the increased number of OSUC and RUFORUM staff visitors related to student and staff research, it will be important to soon have it ready for occupancy. The PMU has worked with SUA administration to put pressure on the contractors to complete it.

Need for Additional iAGRI Funding – At the time of the amendment to the original iAGRI cooperative agreement between OSU and USAID/Tanzania, an additional \$1.5 million was provided to extend the life of the agreement for an additional year. The additional allocation of funds was for the placement of 15 additional students in graduate degree programs, the implementation of a quality management training program at SUA, and the building of a second floor for the iAGRI Office complex. No additional funds were provided to cover staff salaries and other administrative costs for an additional year, and no funds were provided to extend capacity building activities initiated during earlier years for this additional year. As we have planned for the coming fiscal year, we have noted that, should additional funding not be made available to the cooperative agreement, we will need to begin to cut back on some of our critical activities related to capacity building at SUA as well as related staffing.

Gender Policy - One of iAGRI's latent objectives is to change the long-term human resource profile of agricultural and nutrition sciences in Tanzania by engaging more women in them. Thus, it focuses on gender issues in every activity. Over the coming year, we will continue to pay special attention to the needs of women trainees. In recruiting for Cohorts IV and V, we continued to give preference to recruitment of women candidates. For Cohort IV approximately two women were placed in the U.S. for every male candidate. Many of them continue to focus on human nutrition topics for their research. We continued this emphasis for Cohort V which consists of 9 women and 3 men. Activities involving women continue to be highlighted on iAGRI website.

9. Financial Summary

As per the Cooperative Agreement between USAID and The Ohio State University, project finances are reported on a quarterly basis using Federal Financial Form (SF-425). Accumulated expenditure from project inception to end of the current reporting period (September 30, 2015) is \$17,323,275. Total expenditures for Fiscal Year 10/1/2014 – 9/30/2015 are \$7,053,585. Planned annual expenditures for the next Fiscal Year (10/1/2015 – 9/30/2016) are \$8,175,135.

Annexes

1. Annual Work Plan (FY 2014-2015)
2. Performance Indicator Summary Table
3. Success Story
4. iAGRI Project Update (July-September, 2015)
5. iAGRI News (July-August, 2015)
6. Draft MoU between SUA and JKUAT
7. Kenya Study Tour Report
8. Crop Science Program Review Report
9. Makerere University Study Tour Report
10. BIFAD Report
11. iAGRI Borlaug LEAP Fellows
12. iAGRI Training Status Report
13. Organizational Transformation Indicators

iAGRI Annual Work Plan – Year IV (October 1, 2014 – September 30, 2015)

Intermediate							
Results	Activity	Q1	Q2	Q3	Q4	Primary Responsibility	Deliverables
Training							
Degree Training - Cohort V							
IR 1.1	Screen and Select Training Candidates	X	X			Rwambali; Chove	8 Candidates Selected
IR 1.1	Candidates Admitted to U.S. Programs			X		Howell; Hansen	4 Candidates Placed
IR 1.1	Candidates Admitted to GS Institutions			X	X	Hansen, Rwambali	2 Candidates Placed
IR 1.1	Co-Advisors Identified for Trainees	X	X			Howell; Mkandawire; Rwambali; Chove	Co-Advisors in Place
IR 1.1	Visas Obtained for U.S. and GSU Trainees	X	X			Howell; Mkandawire; Rwambali; Chove	31 Student Visas Obtained
IR 1.1	Trainee Programs Monitored	X	X	X	X	Howell; Mkandawire; Rwambali; Chove	Student Reports Prepared
Degree Training - Cohort IV							
IR 1.1	Orientation Session for U.S. Advisors	X				Howell, Hansen, Erbaugh	23 Advisors Oriented
IR 1.1	Orientation Session for Tanzanian Supervisors	X				Rwambali, Chove, Alexander	44 Supervisors Oriented
IR 1.1	Trainee Programs Monitored	X	X	X	X	Howell; Mkandawire; Rwambali; Chove	Report on Students
IR 1.2	M.S. Candidates to Tanzania for Thesis Research			X	X	Rwambali; Chove; Howell	Thesis Research Reports
Degree Training - Cohort III							
IR 1.1	M.S. Candidates to Tanzania for Thesis Research			X	X	Rwambali, Chove, Howell	Reports on Students
IR 1.1	Trainee Programs Monitored	X	X	X	X	Mkandawire; Rwambali; Chove	Report on Students
IR 1.1	Summary of Theses Published		X			Hansen; Minde	Published Monograph
IR 1.1	Student Research Demonstrations at Nane Nane				X	Alexander; Rwambali, Chove	Presentations Made
IR 1.1	Student Manuscript Preparation Workshop				X	Rwambali, Kraybill, Chove	Workshop Held
Degree Training - Cohort II							
IR1.1	Trainee Programs Monitored	X	X	X	X	Mkandawere; Rwambali; Chove	Report on Students
IR1.1	M.S. Candidates Defend Theses	X	X			Rwambali; Chove; Howell	Thesis Research Reports
IR 1.1	Some Ph.D. Candidates Defend Theses	X	X			Rwambali; Chove; Howell	3 Dissertations Defended
IR1.2	Summary of Theses and Dissertations Published		X			Hansen; Minde	14 Theses Defended

iAGRI Annual Work Plan – Year IV (October 1, 2014 – September 30, 2015)

Intermediate							
Results	Activity	Q1	Q2	Q3	Q4	Primary Responsibility	Deliverables
Degree Training - All Cohorts							
IR 1.1	Post-Graduate Student Research Symposium	X	X	X		Howell; Hansen	Symposia Reports
Short-Term Training							
IR 1.1	Short Courses Offered	X	X	X	X	Rwambali; Chove; Hansen; Howell	Short Course Programs
IR 1.3.3	Exchanges – Academic, Research, Outreach	X	X	X	X	Rwambali; Erbaugh; Hansen; Howell	Exchange Reports
Research							
Policy Research							
IR 1.2	Call for Proposals		X	X	X	Minde; Hansen	Program Description
IR 1.2	Prepare Research Selection Process		X	X	X	Minde; Hansen; Kraybill	Process Description
IR 1.2	Review Mid-Course Reports	X	X	X	X	Minde	Report Reviews
IR 1.2	Conduct Policy Dialogues	X	X	X	X	Minde	Policy Dialogue Reports
IR 1.2	Preparation of Policy Briefs	X	X	X	X	Minde	Briefs Prepared
Collaborative Research – Phase I							
IR1.2	Monitor Collaborative Research Activities	X	X	X	X	Minde; Hansen	Research Project Reports
IR1.2	Collaborative Research Workshop		X			Minde; Hansen; Mattee	Workshop Report Issued
IR1.2	Review Semi-Annual Reports		X	X	X	Minde; Hansen; Mattee	Reports Submitted
Collaborative Research – Phase II							
IR1.2	Identify Research Priority Topics	X	X	X	X	Minde; Hansen; Kraybill	Priority Topics List
IR1.2	Identify Potential Researchers	X	X	X	X	Minde; Hansen; Kraybill	Potential Researchers List
IR1.2	Review of Solicited Proposals	X	X	X	X	Minde; Mattee; Hansen	Review Results
IR1.2	Fund Selected Proposals	X	X	X	X	Minde; Hansen; Kraybill	Award Notification
IR1.2	Research Workshops with Key Stakeholders			X		Minde; Mattee; Hansen	Report Prepared
IR1.2	Researchers Submit Semi-Annual Report Reviews				X	Minde; Mattee; Hansen	Report Reviews
IR1.2	Workshop on Research Conducted				X	Minde; Mattee; Hansen	Workshop Findings Report

iAGRI Annual Work Plan – Year IV (October 1, 2014 – September 30, 2015)

Intermediate		Q1	Q2	Q3	Q4	Primary Responsibility	Deliverables
Results	Activity						
Strengthen Capacity of SUA							
<i>Change Management/Leadership Development</i>							
IR 1.1	Change Management Program at SUA	X	X	X	X	Bosserman; Kraybill	Reports Prepared
IR 3.1.1	Asset Utilization at SUA	X	X	X	X	Kraybill; Bosserman	Report Prepared
IR 1.1	Induction Training for Dean, Directors, Heads	X				Mattee; Alexander; Kraybill; Bosserman	Report Prepared
IR 1.1	Leadership Forum for Deans and Heads	X	X	X	X	Kraybill; Bosserman	Reports Prepared
IR 1.1	Leadership Coaching	X	X	X	X	Bosserman; Kraybill	Reports Prepared
IR 1.1	Quality Management Training Program	X	X	X	X	Alexander; Mattee; Kraybill	Report Prepared
IR 1.1	SUA Leadership Visitation to U.S.	X	X	X	X	Kraybill; Hansen	Report Prepared
IR 1.1	Future Leaders Webinar Series	X	X	X	X	Alvis; Hansen; Mpinga	On-line Course Prepared
IR 1.3.2	Mentoring Program	X	X	X	X	Nombo; Minde	Reports Prepared
IR 1.3.2	Implement Gender Plan	X	X	X	X	Nombo; Rakowski	Report Prepared
<i>Improved External Linkages</i>							
IR 1.1	Innovation Portfolio	X	X	X	X	Mullei; Rwegasira; Chove; Mpinga	Web Portfolio
IR 1.1	SUGECO	X	X	X	X	Aexander	Reports Prepared
IR 1.1	Commercial Horticulture Facility	X	X	X	X	Mpinga	Reports Prepared
IR 1.1	Commercial Soil Laboratory	X	X	X		DiGennaro	Reports Prepared
IR 1.1	Alumni Program	X	X	X	X	Mpinga; Mattee	Report Prepared
IR 1.1	Extension Education for Youth	X	X	X	X	Mattee, Magayane, Hansen	Reports Prepared
IR 1.1	Communications Facilities for MAFC-SUA Collaboration	X	X			Alexander; Kraybill	Equipment Installed
IR 1.1	International Conference on Climate Change				X	Msogoya; Kraybill; Hansen; Alexander	Reports Prepared
<i>Teaching/Learning Infrastructure</i>							
IR 1.1	Classroom Service Unit	X	X	X	X	Mpinga	Reports Prepared
IR 1.1	Equipment for Classrooms	X	X	X	X	Mpinga	Reports Prepared
IR 1.1	Graduate Teaching Program	X	X	X	X	Mpinga	Reports Prepared
IR 1.1	English Language Center	X	X	X	X	Alexander; Mattee	Reports Prepared

iAGRI Annual Work Plan – Year IV (October 1, 2014 – September 30, 2015)

Intermediate							
Results	Activity	Q1	Q2	Q3	Q4	Primary Responsibility	Deliverables
IR 1.1	Curriculum Review Assistance	X	X	X	X	Minde; Kraybill; Mattee	Reports Prepared
Research Support Capacity							
IR 1.1	Sokoine National Agricultural Library	X	X	X	X	Alexander	Reports Prepared
IR 1.1	Statistics Collaborative Laboratory	X	X	X	X	Magayane	Reports Prepared
IR 8.1	Creation of Agricultural Policy Analysis Unit			X	X	Minde; Kraybill; Hansen	Reports Prepared
Communication Strengthening							
IR 1.1	Revamp SUA Website			X	X	Alexander; Mwainyekule	Reports Prepared
Promote Tripartite SUA/U.S./Global South Cooperation							
IR 1.1	Involve Global South Partners in Degree Training	X	X	X	X	Rwambail; Kraybill	Reports Prepared
IR 1.1	Engage Global South Partners with SUA/RUFORUM Program	X	X	X	X	Hansen; Erbaugh; Rwambali	Reports Prepared
IR 1.1	Engage Global South Partners in Research/Outreach	X	X	X	X	Kraybill; Hansen; Minde	Reports Prepared
Administration							
IR 1.1	Revamp iAGRI Website	X	X	X	X	Alexander; Mwainyekule	Revamped Website
IR 1.1	iAGRI Office Infrastructure	X	X	X		Digennaro; Kraybill	Construction Completed

PERFORMANCE INDICATOR SUMMARY TABLE

	Description	Indicator Definition and Unit of Measure	Data Source	Baseline		Data collection method and frequency	Disaggregation	FY 2011 Targets	FY 2012 Targets	FY2013 Targets	FY2014 Targets	FY2015 Targets	FY2016 Targets	Project Target	Comments
				Year	Value										
Objective 4: Economic Growth/ Key Objective: Inclusive Agricultural Sector															
IR 1: Improved Agricultural Productivity / Sub IR 1.1 Enhanced human and institutional capacity development for increased sustainable agriculture sector productivity															
Intermediate Level Indicators															
1	Number of individuals who have received USG supported long-term training on food security (FtF Output Indicator) (4).	Definition: The number of people who are currently enrolled in or graduated in the current fiscal year from Master's or PhD program or are currently participating in or have completed in the current fiscal year a long-term (degree-seeking) advancing training programs such as a fellowship program or post-doctoral studies program. A person completing on long term training program in the fiscal year and currently participating in another long term training program should not be counted twice. An example is a USDA Borlaug Fellow. Unit of measure: Number of people	Project reports	2011	0	Project reports, annually	Sex (Male and Female) and Duration (New and Continuing)	6	55	33	31	15		144	
2	Number of individuals who have received USG supported short-term training on food security (FtF Output indicator) (3).	Definition: The numbers of individuals to whom significant knowledge or skills have been imparted through formal or informal means, in country and off shore trainings are included. This includes primary sector producers who receive a variety of best practices in productivity, post-harvest	Participant training register	2011	0	Training register, quarterly	Sex (Male and Female) and Type of individual (Produc		100	150	150	100		450	

		management, linking to markets, etc. It also includes rural entrepreneurs, processors, managers and traders, researchers, extension workers, policymakers, climate risk analysts, adaptation, mitigation, and vulnerability assessments. Knowledge or skills gained through technical assistance activities is included. Individuals attending more than one training are counted as many times as they attend training. Unit of measure: Number of people.					ers, People in Govern ment, People in Private Sector Firms and People in Civil society)								
3	Number of students assessed for graduate-level English competency (USAID/iAGRI Output Indicator) (5).	Definition: The number of people whose English language ability is being assessed for evidence that their spoken and written command of the English language is adequate for the programs for which they have applied to study for academic degree at a college or university in the US. To determine the level of English proficiency, test scores of "Test of English as a Foreign Language (TOEFL) is required. The test uses a multiple choice and essay format to measure each examinee's ability to understand North American English. The test is divided into four sections: listening, structure, reading, and writing of an essay. The TOEFL is a computer-adaptive test, which means that not	Participant training register	2011	0	Training register, semi-annually	Sex (Male and Female)		35	25	25	1		85	

		all students answer exactly the same questions on the test. Instead, depending on how the student performs on each question, the computer determines whether the level of the test question should be easier or more difficult. Unit of measure: Number of people.													
4	Number of researchers trained for Randomized Control Trials (RCTs) (USAID/iAGRI Output Indicator) (7).	Definition: The number of people to whom significant knowledge or skill has been imparted through formal or informal means. In country and off shore trainings are included. Knowledge or skills gained through technical assistance activities is included. If the activity provided training to trainers, and if the reporting unit can make a credible estimate of follow-on training provided by those trainers, this estimate should be included. Individuals attending more than one training are counted as many times as they attend training. Unit of measure: Number of people.	Participant training register	2011	0	Participant training register, semi-annually	Sex (Male and Female)		10	26	25	15		35	
5	Number of research projects conducted which focus specifically on gender (USAID/iAGRI Output Indicator) (9).	Definition: The number of research projects on topical issues that affect women. Research on gender and agricultural value chains to determine where women are concentrated along the value chains and proposing ways of increasing productivity and	Annual report	2011	0	Project annual report, annually	N/A		2	3	2	2	2	9	

		potentially upgrading them to higher value segments is included. Research on labor-saving technologies to reduce women's labor burden in the agriculture sector should be included. Similarly women's technology adoption and practices assessed to identify opportunities for increasing productivity adoption and diffusion among women to expand their gains from agricultural productivity is included. Unit of measure: Number of research project conducted.													
6	Number of students making use of improved ICT in classroom instruction (USAID/iAGRI Output Indicator) (10).	Definition: The number of people using improved information and communications technology infrastructure and other types of equipment to meet anticipated training needs. This will include computers and allied equipment, communications equipment, laboratory equipment, and field implements. Unit of measure: Number of people.	Project report	2011	0	Project reports, quarterly	Sex (Male and Female)		750	1565	1,565	2,500	2,500	6,250	
IR 1: Improved Agricultural Productivity / Sub IR 1.2: Enhanced Technologies Development, Dissemination, Management and Innovation															
7	Number of new technologies or management practices in one of the following phases of developmentin Phase I: under research as a result of USG assistance	Definition : Number of technologies, management practices, or products under research/development.	Annual report	2011	0	Project records, annually	N/A		3	6	7	23	7	49	

	<p>.....in Phase II: under field testing as a result of USG assistance</p>	<p>Definition: Number of technologies, management practices, or products under field testing. Technologies to be counted here are agriculture-related technologies and innovations, and may relate to any of the product at any point on the supply chain. "Under field testing" means that research has moved from focused development to broader testing and this testing is underway under conditions intended to duplicate those encountered by potential users of the new technology. This might be in the actual facilities (fields) of potential users, or it might be in a facility set up to duplicate those conditions. More specifically:</p> <ul style="list-style-type: none"> a) For biotech crop research: Once a permit has been obtained and the research moves to a confined field, the research is said to be "under field testing." b) For non-biotech crop research: During this phase the development of the product continues under end-user conditions in multi-location trails, which might be conducted at a research station or on farmers' fields or both. Note that for crops, all of this phase would be conducted outdoors and in soil, but this is not what makes this work "field testing." c) For non-crop research: "under field testing" signifies similarly research conducted under user conditions to further test the product or process. In the case of research to improve equipment, the endpoint of 	Annual report	2011	0	Project records, annually	N/A	5	2	5	6	10	10	17	
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IR 1: Improved Agricultural Productivity / Sub IR 1.2: Enhanced Technologies Development, Dissemination, Management and Innovation /Sub IR 1.2.1: Improve Capacity to Address Climate Change														
8	Number of research projects that address adaptation to climate change (USAID/iAGRI Output Indicator) (13).	Definition: Technologies innovations and management practices that address climate adaptation and mitigation. (Including carbon sequestration, clean energy efficiency as related to agriculture). Increased use of climate information for planning for disaster risk strategies in place, climate change mitigation and energy efficiency, and natural resource management practices that increases productivity and/or resiliency to climate change, IPM, ISFM, and PHH as related to agriculture should be included as improved technologies or management practices. Unit of measure: Number .	Project records	2011	0	Project reports, semi-annually	N/A		1	5	5	3	2	14
IR 3: Increased Investment In Agriculture and Nutrition Related Research/ Sub IR 3.1: Increased Participation of the Private Sector in the Delivery of Services														
9	Number of public-private partnerships formed as a result of FtF assistance (FtF Output Indicator) (14).	Definition: Number of public-private partnerships in agriculture or nutrition formed during the reporting year due to Feed the Future intervention (i.e. agricultural or nutrition activity, as described below). Private partnerships can be long or short in duration (length is not a criteria for measurement). Partnerships with multiple partners should only be counted once. A public-private alliance (partnership) is considered formed when there is a clear agreement, usually written, to work together to achieve a common objective. Please count both Global Development Alliance	Project records	2011	0	Project records, semi- annually	Partners hip focus (agricult ural producti on, agricultu ral postharv est transfor mation, nutrition,		2	2	2	2	2	8

		<p>(GDA) partnerships and non-GDA partnerships for this indicator. There must be either a cash or in-kind significant contribution to the effort by both the public and the private entity. USAID must be one of the public partners. USAID is almost always represented in the partnership by its implementing partner. For-profit enterprises and NGOs are considered private. A public entity can be national or sub-national government as well as a donor-funded implementing partner. It could include state enterprises which are non-profit. A private entity can be a private company, a community group, or a state-owned enterprise which seeks to make a profit (even if unsuccessfully). A mission or an activity may form more than one partnership with the same entity, but this is likely to be rare. In counting partnerships we are not counting transactions with a partner entity; we are counting the number of partnerships formed during the reporting year. Public private partnerships counted should be only those formed during the current reporting year. Any partnership that was formed in a previous year should not be included.</p> <ul style="list-style-type: none"> • An agricultural activity is any activity related to the supply of agricultural inputs, production methods, agricultural processing or transportation. • A nutritional activity includes any 						other and multifocus)								
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		<p>activity focused on attempting to improve the nutritional content of agricultural products as provided to consumers, develop improved nutritional products, increase support for nutrition service delivery, etc.</p> <p>NOTE: Each partnership's formation should only be reported once in order to add the total number of partnerships across years.</p> <p>Unit of Measure: Number</p>													
IR 3.2: Increased Capacity of Women to Participate in Agriculture and Nutrition															
11	Percentage change in the number on non senior female academic staff participating in mentorship program (USAID/iAGRI Indicator (17)).	<p>Definition: The proportion of female academic staff members with the rank of lecturer and below who are participating in mentorship program. Mentorship programs may include: offering advice and support by introducing students to clubs and organizations where they can make friends and pursue new and continuing interests, providing information about courses in their major or complimentary areas of study, acting as a sounding board and/ or working through situations or issues that may arise, suggesting services that can provide additional support or advice to assist with academics, career and leadership development, or personal issues that may arise, accompanying</p>	Project records	2013	0	Counting; annually	N/A		5	5	5	5	5	5	

		<p>mentee to social and professional development activities organized for mentees and mentors where students can enjoy and benefit from a diverse community of women students pursuing a broad range of technological programs of study, the mentor providing help to the mentee in finding documentation that is related to her field, and Round Tables (including one session showcasing local CEO in agriculture industry and one career session with panel discussion featuring African women leaders in agriculture and environment). A person completing a mentorship program in the fiscal year and currently participating in another mentorship program should not be counted twice.</p> <p>Unit of measure: Number of female students in mentorship programs.</p>													
12	Number of high school girls provided with career guidance and counseling program (USAID/iAGRI Output) (18).	<p>Definition: The number of high school girls being provided with career guidance and counseling from partner high schools. The career guidance program is to inform participants of career options in the agricultural industry, the type of academic and occupational training needed to succeed in the industry, and postsecondary opportunities that are associated with the agriculture field. The</p>	Project records	2011	0	Project records, quarterly	N/A		700	1,000	2,000	1,000	1,000	4,150	

		<p>program will provide teachers, administrators and parents with information they can use to support students' career exploration and postsecondary education opportunities in the field of agriculture, a career booklet which contains a list of degree programs in agriculture and their cut off points.</p> <p>Unit of measure: Number of high school girls.</p>													
IR 3.3: Enhanced Knowledge and External gained through study tours															
13	<p>Number of persons completing study tours as a result of FtF assistance (USAID/iAGRI Output) (19).</p>	<p>Definition: The numbers of individuals to whom significant knowledge or skills have been imparted through formal or informal means, in-country and off-shore trainings are included. This includes primary sector producers who receive a variety of best practices in productivity, post-harvest management, linking to markets, etc. It also includes rural entrepreneurs, processors, managers and traders, researchers, extension workers, policymakers, climate risk analysts, adaptation, mitigation, and vulnerability assessments. Knowledge or skills gained through technical assistance activities is included. Individuals attending more than one travel are counted as many times as they</p>	<p>Study tour register</p>	<p>2011</p>	<p>0</p>	<p>Training register, quarterly</p>	<p>Sex (Male and Female)</p>		<p>2</p>	<p>6</p>	<p>6</p>	<p>15</p>	<p>5</p>	<p>18</p>	

		attend training. Unit of measure: Number of people.													
IR 8.0: Improved Enabling Policy Environment for both Agriculture and Nutrition															
IR 8.1: Improved Capacity to Conduct Policy Research and Analysis															
14	Number of policy issues in agriculture, natural resources and environment, climate change and nutrition researched and analyzed as a result of FtF assistance (USAID/iAGRI Output Indicator) (20).	Definition: The number of policies, regulations, in the areas of agricultural resource, food market standards , nutrition, public investment, natural resources or water management and climate change adaptation/mitigation as it relates to agriculture that are researched and analyzed and generating options for addressing cotemporary problems. Building of a data bank of information that could be useful in agricultural policy analysis, formulation and implementation should be included. Unit Of measure: Number of policy issues.	Project records	2011	0	Project records, semi-annually	N/A		3	10	5	4	4	16	
IR 8.2: Public/Private Sector Dialogue on Policy Issues Increased															
15	Number of USG-supported policy dialogue events held that are related to improving the enabling policy environment for agriculture and nutrition (USAID/iAGRI Output Indicator) (21)	The number of events (including conferences, workshops, seminars, and briefings) to communicate research findings and provide a forum for open discussion among researchers and other professionals, university academicians, policy analysts, policy advisors, policy makers, civil society organizations and representatives of farmers,	Project reports	2011	0	Direct counting of policy dialogue events	N/A		2	4	5	2	3	5	

		<p>manufactures, traders and other stakeholders. Publication of research works in proceedings, working papers, professional journals and popular media should be included. Strengthening of capacity building for policy research, analysis and collaboration on research and exchange of information with institutions and agencies with similar interests and engaged in similar work should be included.</p> <p>Unit of measure: Number of events/publications/papers and number of people reached.</p>														
<p align="center">B: NEW CUSTOM INDICATORS (These indicators were formulated latter to fit into iAGRI's objective of strengthening SUA's capacity through institutional development. A formal request for including these indicators in the M&E plan will be presented to USAID/Dar through FY2016 PMP and our suggestions on the relevant IRs. We have been reporting progress for these indicators since FY2015)</p>																
16	Number of pre-SOWs and research profiles completed											20	20	40		
17	Number of beneficiaries made aware of opportunities in the Innovation Portfolio											75	75	150		
18	Number of unique visitors to the Innovation Portfolio website											15	15	30		

19	Number of unique visitors to the posted pre-SOWs and the pre-SOW submissions pages											7	8	15	
20	Number of individuals joining the Innovation Portfolio group on LinkedIn											5	5	10	
21	Number of private/public/NGOs that have applied new technologies/management practices as a result of USG assistance											5	5	10	
22	Value of new private/public/NGOs investments in agriculture/food chain leveraged as a result of USG assistance											USD 30,000	USD 50,000	USD 80,000	
23	Percent increase in the R&D budget of companies investing in the Innovation Portfolio program											5	5	5	
23	Number of individuals who have received USG supported short term training under Innovation Portfolio program (IPP)											25	25	50	

24	Number of individuals trained under the Leadership and Management Program (LMTP)											100		100	
25	Number of individuals trained under the Quality Management Training Program (QMTP)											50		50	
26	Number of students participating in the Leadership Webinar Series Program (LWSP)											50	50	100	
27	Number of new English language services provided at SUA under Feed the Future program											7	3	10	
28	Number of SUA students and staff involved in the new and improved English language services program												1,000	1,000	
29	Number of visitors to the redesigned SUA website												1,000,000	1,000,000	

30	Percentage of SUA website visitors with positive perception of the improved website												90	90	
31	Number of organizational experiments FtF helps develop and carry out											12	8	20	
32	Number of organizational experiments that have completed Stage 1- Conversation That Matter (CTM):														
33	Number of organizational experiments that have completed Stage 2- Ways That Work (WTW):														
34	Number of stage 3 organizational experiments in each of the 5 steps														
35	Number of full text downloads through SNAL											10,000	15,000	35,000	

MOUs with Three Kenyan Universities to Facilitate Organizational Transformation of SUA

The Sokoine University of Agriculture (SUA) has signed Memorandums of Understanding (MOUs) with three Kenyan Universities, namely Egerton University, Kenyatta University (KU), and Jomo Kenyatta University of Agriculture and Technology (JKUAT). They will facilitate the exchange of ideas and experience related to how these institutions are transforming themselves to ensure future program relevancy and financial sustainability.

The MOUs were signed during a study tour that was sponsored and organized by iAGRI last August. The tour delegation included SUA's Vice Chancellor, Prof. Gerald Monella, Vice



Chancellor (Administration and Finance) Prof. Yonika Ngaga, Council Chairman, Mr. Philemon Luhanjo, Council Vice Chairman, Ms. Kate Kamba, Council Member, Prof. Evelyn Mbede, SUA's bursar as well as the Chief Planning Officer, and other members of staff from iAGRI.

During the tour, the delegation learned how the three Kenyan universities develop strategies to achieve excellence in the face of a challenging higher education environment which is similar to that faced by SUA. The delegation was also able to discuss how the lessons learned from the tour can be incorporated into ongoing transformation efforts at SUA.

Of particular significance was the participation of the SUA Council Chairperson and Vice-Council Chairperson in the tour. They observed how their counterparts in Kenya actively participate in futuring exercises at their respective institutions and how they actively promote related institutional changes. Upon completion of the tour they reaffirmed their commitment to related activities at SUA over the coming months and years.



In addition to focusing on institutional transformation issues that may involve organizational restructuring and related strategic planning, the signed MOUs will facilitate greater collaboration for specific research, training, and extension programs in agriculture and related fields of endeavour.



The MOUs will remain in effect for a period of five years but can be renewed for additional periods. This is likely to occur because of the similarities between the challenges faced by Kenyan and Tanzanian institutions of higher agricultural education. The tour took on particular

significance because of SUA's current efforts to address demographic, financial and environmental changes occurring in Tanzania that directly affect its existing programs and ability to meet its organizational goals.

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Captions:

1. SUA's Council Chairman, Philemon Luhanjo (centre) and Vice Chancellor Prof. Gerald Monella (far right), listening to Egerton University's Council Chairman during their visit.
2. Members of the SUA delegation visiting some of Egerton Universities income generating projects
3. Members of the SUA delegation watching how a visually impaired student uses facilities at Kenyatta University's centre for the disabled.

iAGRI Project Update

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iAGRI is operated in Tanzania by The Ohio State University within Feed the Future, the US Government's global hunger and food security initiative. Feed the Future works to improve food security under the guidelines of Tanzania's CAADP (Comprehensive Africa Agriculture Development Program) Compact, prepared by the Government of Tanzania in 2010. Primary stakeholders of iAGRI are Sokoine University of Agriculture and the Ministry of Agriculture, Food Security, and Cooperatives. For more details see www.iagri.org.

Building Institutional Capacity. A study tour to learn from the remarkable organizational transformation of three Kenyan universities was sponsored by iAGRI in August. The study tour team included 12 people ranging from the Council Chairman and other members, SUA's Vice Chancellor and Deputy Vice Chancellor-Administration and Finance, Chief Planning Officer, Bursar, and several persons from iAGRI. The objective of the tour was to study strategies used by other universities to achieve both growth and quality improvements despite a challenging higher education environment, and to incorporate lessons learned into ongoing transformation efforts at SUA. The visited universities are Egerton University, Kenyatta University (KU), and Jomo Kenyatta University of Agriculture and Technology (JKUAT).



LEFT: The delegation visits Egerton University's farm. CENTER: Officials from Sokoine University of Agriculture (SUA) and Jomo Kenyatta University of Agriculture and Technology (JKUAT) sign a Memorandum of Understanding. RIGHT: The delegation visits the disabled facilities at Kenyatta University (KU).

iAGRI continues to build institutional capacity at SUA through collaborative "organizational experiments" that engage partners throughout the university. Below is a description of 4 "organizational experiments" out of the total 21 underway with iAGRI support at SUA:

- **Income Generation, Investment, and Asset Utilization:** Based on recommendations of the iAGRI-funded Review of SUA's Income Generation Task Force Report in June 2015, SUA has established an Income Generating Unit (IGU), which will revise SUA's policies on departmental income-generating activities. A Coordinator for Income Generation has been appointed to revamp SUA's income generation policies and procedures, including the formula for distribution of revenues. In August, during the study tour to Kenya (reported above), a key focus of the tour was the strategies, structure, and systems used by the Kenya universities mobilize resources and attract funding from both the private and public sectors.
- **Convocation:** SUA's Convocation is planning a Homecoming Week, which will take place in November in the week leading up to Convocation. Homecoming Week will feature a series of events and activities designed to enhance the profile of Convocation and strengthen its relationships with SUA alumni and future SUA alumni, including a charity walk, sporting events, and community service.
- **Monthly Leadership Forums (MLF):** These forums provide an opportunity for SUA's Deans, Directors, and Department Heads to share experiences, information, and best practices to improve management of the University. Each month, the two-hour program features a different topic. Recent forums have focused on meeting management, restructuring of the university, and university rankings. MindTools, an online suite of management tools, has been made available by iAGRI to university leaders through the MLF to sharpen their management skills.
- **Electronic Document Management System:** In partnership with SUA's Computer Centre, iAGRI has agreed to support the customization and implementation of an electronic document management system at SUA,

iAGRI Project Update

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replacing the existing physical filing system. The new system will improve efficiency and effectiveness of SUA's decision-making and administrative services. Design and implementation of the new system is expected to begin before the end of 2015.

Delivering Degree Training. iAGRI now has 139 students in training, enrolled or already graduated. They include staff persons from SUA, MAFC, local governments, NGOs and the private sector.

Cohort 1: All 6 MSc students in this cohort have completed their degree. **Cohort 2:** There are a total of 49 students in this cohort, and all 12 M.Sc. students placed at the US universities have completed. Additionally, out of the 8 candidates placed at RUFORUM, 6 have completed. Of the 8 students placed at SUA, 4 have completed their studies, while the other 4 have submitted their theses for externalization. Furthermore, while 1 PhD candidate, Boniface Massawe, has recently graduated, the other PhD candidates in this cohort are back in Tanzania for data collection. **Cohort 3:** There is a total of 26 MSc students in this cohort. Of the 10 studying at US universities, 4 candidates have successfully completed, 2 have successfully defended their theses, and the rest are still in the final writing stages. For those at SUA, 2 candidates have had their theses sent for externalization, while 2 others are still in the writing stage. All 10 candidates placed at RUFORUM universities are in the writing stage of their theses, while the 2 placed at Punjab Agricultural University in India have successfully graduated. **Cohort 4:** There are 47 students in this cohort. Candidates from the US are back in Tanzania since August to start work on their research projects. There are also 4 candidates from Punjab Agricultural University who are still in India, as they will be conducting their research there. We are still waiting for the final returnees from RUFORUM universities. **Cohort 5:** This cohort has a total of 11 candidates. All 4 candidates placed in the US have already joined their respective universities. 2 candidates have joined RUFORUM universities, while 1 will join the University of Malawi in October this year. Additionally, 4 candidates placed at SUA are expected to start their studies in November, 2015.

Sponsoring Collaborative Research. The eight on-going Phase 1 research projects are yielding concrete results. In the current reporting period, one scientific paper was published in a referred journal, several other papers are in the pipeline for publication in the next quarter, a number of training and extension materials were developed, and a farmers' field day was held which attracted hundreds of farmers, extension officers, NGOs and local government officials. Several teams continue to work on data analysis and will complete their project reports by December 2015. Three out of the four of Phase 2 research projects began field work in the reporting period.

Facilitating Outreach. From August 1 – 8, iAGRI participated in Morogoro's annual Nane Nane agricultural fair, which celebrates national farmer's day. This year, iAGRI presented two exhibits, one with other USAID Feed the Future partners and one with Sokoine University of Agriculture. The SUA exhibit, in particular, emphasized the many important collaborations iAGRI undertakes with the university, including collaborative research, the Innovation Portfolio, and long-term degree training.



LEFT: SUA and iAGRI staff persons at the iAGRI exhibit at the SUA pavilion at Nane Nane in Morogoro. RIGHT: iAGRI-funded Masters degree students display their research at Nane Nane.



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iAGRI has continued to pursue accomplishment of its priority objectives over the past two months. These include long-term degree training, collaborative research, SUA capacity building, and Global South linkages. Several highlights include graduation of the first iAGRI-sponsored Ph.D. fellow, SUA restructuring events focused on the Faculty of Agriculture, efforts to promote income generation and private sector linkages, and a project annual review and work plan preparation. Oversight of collaborative research efforts was also prioritized. Several project related research publications were completed during the period. And progress continues to be made on on-going organizational experiments that represent its institutional transformation thrust at SUA. Support received from the USAID Mission in Tanzania and from USAID/Washington for these activities continues to be critical to project success and is much appreciated.

Update on Activities July-August, 2015

Long Term Training – The rate iAGRI fellow graduations has increased substantially this summer as holdover Cohort II students placed at SUA and at RUFORUM member institutions have completed their programs and several students from Cohort III also completed their programs. Of the 136 graduate degree students placed under the program, 30 (25%) have now graduated and are resident in to Tanzania.

	Cohort I		Cohort II		Cohort III	
	Placed	Completed	Placed	Completed	Placed	Completed
OSUC	6	6	27	14	10	4
SUA	---	---	10	4	4	---
RUFORUM	---	---	9	4	10	---
Punjab Ag Un	---	---	---	---	2	2
Total	6	6	48	22	26	6

These figures include Dr. Boniface Massawe, who is the first Ph.D. student to complete his degree. He has returned to the Soil Department at SUA. Remaining PhD. Students from Cohort II are on track to complete their degrees by August, 2016. Remaining M.Sc. students from Cohorts II, III and IV are currently pursuing their thesis research in Tanzania. Four Cohort IV students placed in India are currently beginning their thesis research in that nation. Eleven students in Cohort V have or will soon initiate their studies. They include two new Ph.D. students placed in the U.S. and one student placed in South Africa, and eight M.Sc. students, two of whom have been placed in the U.S., five at SUA and one by RUFORUM at its member institutions.

iAGRI Collaborative Research Program – Research being conducted under Phase I project continues to progress satisfactorily. Although officially scheduled to terminate in June, 2015, all PI's requested extensions in order to complete their activities. Over the past two months they have focused their attention on preparation of manuscripts and outreach publications from the research. The latter will be used to disseminate research results to farmers and other potential stakeholders in Tanzania. Prosper Doamekpor, Tuskegee University, visited Morogoro to work with counterparts on their research of the Tanzanian agricultural extension system. Research projects under Phase II of the Collaborative Research Program also continue on track. They are summarized below.

- **Maize** – Researchers at Iowa State University and the Mikocheni Research Institute and SUA have conducted research designed to address major maize production issues, namely maize lethal necrosis, striga and moisture stress tolerance. Over the past two months they have collaborated with CIMMYT and its scientists located in Nairobi, Kenya as well as scientists working on the Water Efficient Maize for Africa (WEMA) project, managed by the African Agricultural Technology Foundation. Research at Iowa State has focused on development of maize varieties that are tolerant to these stresses while research at Mikocheni has also focused on field testing of different maize varieties and development of management practices that increase tolerance levels.
- **Land Use** - This project partners Virginia Tech researchers with those at SUA and The Tanzanian Ministry of Water. It focuses on the Upper Ruvu River Basin and will assess land use and climate change impacts on sustainable intensification of agricultural production in the region. The PI from Virginia Tech visited Morogoro in August to continue to develop related field studies.
- **Agricultural Risk Management** - This project focuses on agricultural risk management in the context of climate change. It is focused on how to provide crop insurance to Tanzanian smallholders through index insured group credit. This project was recently approved and is now being implemented. Plans are for several staff from Ohio State University to visit Tanzania in September to initiate the field portion of the project..
- **Rice** - A project on rice dealing with seasonal fluctuations in consumption patterns and rice nutrition is being implemented with SERA and SUA utilizing SERA funding. The iAGRI team continues to discuss with SERA the implementation of a land access study involving agricultural economists at SUA and counterparts from Michigan State University.

Quality Management Training Program – A major quality management training exercise for SUA staff was completed in July. Offered by Kilimanjaro International it focused on improving accounting, asset management, auditing, human resource management, procurement, and project management functions at SUA. Participation in this exercise was high with over 80 percent of eligible SUA staff having been engaged. Attention during July was focused on how to implement recommended improved practices. Consideration is now being given to extending the program to allow Kilimanjaro International to monitor implementation of improved practices.

Visits by Student Advisors to Tanzania – Several iAGRI-sponsored graduate students pursuing their degrees at OSUC member institutions were visited by their home institution advisors during this period. In addition to working with their advisees on their respective research projects, most presented seminars to target groups on campus and one of them participated in a student thesis defense.

- **Prof. Gireesh Rajashekara**, Ohio State University, was on the SUA campus in July to work with Ph.D. student, Isaac Kashoma, who is pursuing a sandwich degree at SUA in Veterinary Medicine. Kashoma previously spent time on the OSU campus taking courses in Veterinary and Preventative Medicine and working at the Food and Animal Health Lab at the Ohio Agricultural Research and Development Center in Wooster, Ohio.

- **Prof. Kathleen Alexander**, Virginia Tech, visited SUA in June. She worked with student Kuruthumu Mwamende and co-advisor R.H. Makundi on the dissertation research. She also presented a seminar, “Drivers of Disease Emergence at the Human-Wildlife-Environmental Interface.”
- **Prof. Won Son**, Michigan State University, worked with student Saidah Bakar and co-advisor Prof. C.N.M. Nyaruhucha, Food Science & Technology, on her M.Sc. thesis research. While on campus he also presented a seminar,
- **Prof. Gale Strasburg**, Michigan State University, worked with student Juma Mmongoyo, on his Ph.D. dissertation research. He was assisted in these activities by Dr. Jovin Mugula, who is Juma’s co-supervisor. Dr. Mugula had visited Michigan State University in June to advise on the dissertation.
- **Prof. Kokoasse Kpombrekou-A**, Tuskegee University, visited Tanzania to advise Ph.D. student Mawazo Shitinde and his co-advisor, Johnson Semoka, on Shitinde’s dissertation research. The majority of his in-country time was spent in Babati where the research is being undertaken.
- **Prof. Parameswaran Kumar Mallikarjunan**, Virginia Tech, visited the SUA campus in August to participate in the M.Sc. thesis defense of Denis Kiobia, Agricultural Engineering.

SUA Restructuring Initiative – iAGRI has worked with SUA on implementation of its restructuring process. Following up on a visit to Makerere University to observe and discuss restructuring of its Faculty of Agriculture, iAGRI has provided additional support to the process through its Kilimanjaro International sub-agreement. This has included high level consultancy inputs from the U.S. In August, it supported an important stakeholder meeting in Dar es Salaam attended by over 70 interested alumni and other interested parties. It received important feedback from this meeting regarding the needs of private and public sectors stakeholders and how SUA can better position itself to meet them. Current plans are to create a separate School of Agricultural Economics and Agribusiness separate from the Faculty of Agriculture. Consideration is also being given to creating a separate Social Sciences unit which would combine centers and institutes currently affiliated with the Faculty of Agriculture. Plans are to present a draft restructuring proposal to University Senate at its next meeting.

SUA Study Tours to Counterpart Institutions – iAGRI sponsored a study tour to three Kenyan Universities in August. Participants included key SUA administrators, members of the University Council and iAGRI support staff. Among the issues emphasized in this tour were alternative income generation possibilities for SUA and how to link more proactively with private sector entities as key stakeholders. The study tour resulted in a report which will guide future initiative on the SUA campus related to these key issues.

Crop Science and Production Departmental Review – Two consultants from Ohio State University visited SUA during this period. They worked with the leadership of this key department to define issues that need to be addressed in order for the department to establish strong and more productive ties with its stakeholders and to generate additional income. A report was submitted to the department and will be used as guidance by it as it refines its teaching, research and outreach activities.

Graduate Student Placement at SUA – Eric Stein, M.Sc. candidate, Soil Science at Ohio State University, initiated an internship at SUA with Prof. Didas Kimaro. Eric is the advisee of Prof. Rattan Lal and is pursuing field research for his degree while at SUA. This will include contributing to a collaborative research project involving both Lal and Kimaro. Support for Stein’s internship is being provided by the Office of International Programs at OSU.

MEMORANDUM OF UNDERSTANDING FOR COOPERATION

BETWEEN

SOKOINE UNIVERSITY OF AGRICULTURE, MOROGORO, TANZANIA



AND

JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY

(Insert JKUAT logo)

AUGUST 2015

**MEMORANDUM OF UNDERSTANDING FOR COOPERATION BETWEEN
SOKOINE UNIVERSITY OF AGRICULTURE, MOROGORO, TANZANIA
AND JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND
TECHNOLOGY, KENYA**

PREAMBLE

This Memorandum of Understanding (MoU) is made and entered into by and between the **Sokoine University of Agriculture** of P.O. Box 3000 Morogoro, Tanzania, hereafter referred to as "SUA" and **Jomo Kenyatta University of Agriculture and Technology** of P.O. BOX Nairobi, Kenya, hereafter referred to as "JKUAT".

WHEREAS SUA and JKUAT share a common interest in advancing and widening their respective agricultural and applied science research and training programs as well as recognize the benefit of providing new opportunities for staff and students of their respectively institutions.

WHEREAS SUA and JKUAT have agreed to establish a formal collaborative link in research, training, consultancy and extension so as to reflect their agreement as aforementioned

NOW, THEREFORE, in consideration of the foregoing, the mutual benefits to be delivered by both parties and the mutual covenants contained herein, the parties agree as follows;

DESIRE AND PURPOSE

To enter into long term MoU that will facilitate parties to carry out joint or collaborative programmes in research, training, and extension in the areas of agricultural, Technology and other fields

ARTICLE 1: TITLE

The title of the MoU shall be “A Memorandum of understanding for Cooperation in research, training, consultancy and extension between SUA and JKUAT.”

ARTICLE 2: SCOPE OF COLLABORATION

The collaboration shall include, but not be limited to specific mentioned areas of mutual interest and will take effect by means of:

- i. Undertaking relevant research which will contribute to the development of agriculture, technology and
- ii. Organizing workshops, seminars, training courses, and extension activities which will contribute to improving ecosystem, animal, and human health in the country.
- iii. Sharing and facilitating the transfer of scientific information and technology.
- iv. Publishing scientific papers and other writings which contribute to the overall objectives of the agreement.
- v. Sharing of facilities and human resource for research, training, and extension.
- vi. Offering cost-effective consultancy services and technical backstopping in areas of competencies upon request by the other party.
- vii. Any other activities as may be specified by the two parties from time to time and/or identified in individual agreements.

ARTICLE 4: RESPONSIBILITIES

Both parties shall be willing to support the activities as agreed under article 3 of this agreement. Other specific obligations shall be guided by

specific contract agreement entered between the parties to carry out specific task of project.

ARTICLE 5: ORGANIZATION AND ADMINISTRATION

The coordination of activities under this MoU will be supported out by the link coordinators/office at SUA and at JKUAT as appointed/designated by each institution. However, specific projects will be agreed on by the relevant staff/department and will be approved by the relevant authorities/organs of each party.

ARTICLE 6: FUNDING

Both institutions (singly or jointly) will develop proposals to fund joint activities as covered by this MoU.

ARTICLE: 7. INTELLECTUAL PROPERTY RIGHTS (IPR)

- i. All intellectual property jointly created under this MoU is considered jointly owned by both parties. Each party may execute its ownership rights in accordance with its IPR policy provided it does not infringe on the joint ownership. Under the framework of this MoU, "Intellectual Property Rights" means all intellectual property rights, including: (a) ideas, information, literary text, plant breeder's right, patents, copyright, registered designs, artwork, trade marks and any right to have confidential information kept confidential; and (b) any application or right to apply for registration of any of the rights referred to in (a).
- ii. In the event that either party individually creates or develops other intellectual property, defined for purposes of this agreement as patents, inventions, copyrighted material or other intellectual property as part of an individual project such intellectual property shall belong to the party

which developed it, be governed by the IP policies of the institution creating it, and be reported via each party's IP program. However nothing in this article precludes the parties from establishing different intellectual property provisions or more extensive terms in a particular project.

ARTICLE 8: PARTICIPATION IN SIMILAR ACTIVITIES

This MOU in no way restricts the parties from participating in similar activities or arrangements with other public or private agencies, organizations or individuals

ARTICLE 9: FINANCIAL AND LEGAL OBLIGATIONS

- i. This MOU is neither a fiscal nor funds obligation document. Any activities involving reimbursement or contribution of funds between the parties of this MOU will be handled in accordance with applicable laws, regulations, and procedures. Such activities will be documented in separate agreements, with specific projects between the parties spelled out. The separate agreements will make reference to this MOU.
- ii. This MOU defines in general terms the basis on which the parties will cooperate, and as such, does not constitute a financial obligation to serve as a basis for expenditures. Expenditures of funds, human resources, equipment, supplies, facilities, training, public information, and expertise will be provided by each party to the extent that their participation is required and resources are available.
- iii. This MOU is not intended to be legally binding and no legal obligation or legal rights shall arise between the parties to this MoU. The parties enter into this MoU intending to honour all their obligations.

ARTICLE 10: DURATION, COMMENCEMENT AND TERMINATION

1. **Effective date:** This MOU shall take effect upon the date of the signature and shall remain in effect for a period of five (5) years.
2. **Modification:** This MOU may be renegotiated, amended or modified at any time by mutual agreement of the parties.
3. **Renewal:** This MOU may be renewed for additional periods of 5 years, by mutual written consent of the parties.
4. **Termination:** This MOU may be terminated by any party by providing written notice and explanation to the other parties at least 90 calendar days in advance of the effective date of termination.

ARTICLE 11: DISPUTE RESOLUTIONS:

SUA and JKUT shall endeavor to amicably resolve any problems that may arise in the course of implementing this agreement.

For and on behalf of
Sokoine University of Agriculture

For and on behalf of
**Jomo Kenyatta University of
Agriculture and Technology**

Professor Gerald Monella, PhD
VICE-CHANCELLOR, SUA

Professor Mabel Imbuga, PhD
VICE-CHANCELLOR, JKUT



Organizational Transformation Study Tour by Sokoine University of Agriculture to Three Kenyan Universities

Report and Recommendations

Prepared by the Study Tour Delegation

August 22 – 29, 2015

Supported by



USAID
FROM THE AMERICAN PEOPLE



Background

The study tour, scheduled for **22 - 29 August, 2015**, encompasses three universities: Egerton University (EU), Jomo Kenyatta University of Agriculture and Technology (JKUAT), and Kenyatta University (KU).

Sokoine University of Agriculture (SUA)

Sokoine University of Agriculture (SUA) is Tanzania's premier agricultural university and is the second oldest public university in Tanzania. SUA offers 34 undergraduate, 37 postgraduate and five non-degree programs in agriculture, forestry, veterinary medicine, environmental sciences, education, ICT and allied disciplines at four campuses.

Innovative Agricultural Research Initiative (iAGRI)

The Innovative Agricultural Research Initiative is a USAID funded project designed to strengthen the capacity of Sokoine University of Agriculture to maximize research development and deployment of research technology solutions. The focus is on human capacity and institutional capacity development through innovative approaches to education, research, and public-private partnerships. iAGRI has committed to supporting institutional capacity building initiatives that work towards SUA's objective.

Rationale for tour

SUA has adopted an objective to become a 21st century university. However, in their efforts to bring about transformation, leaders at SUA struggle to cope with structures, policies, procedures, and workplace norms that inhibit change. SUA's current structure and systems no longer fit the size of the faculty and student body, an increasingly competitive environment for higher education in the country, the changing nature of national funding for higher education, and rapidly shifting needs of the Tanzanian economy. Adapting the university to the changing conditions outside its borders is complicated by meager budgets from the national government for university operations and capital improvements, and by limited exposure of leaders within the university and throughout the country to modern organizational design and management.

The situation in Tanzania, while challenging, is not unique. Other universities in the region have adapted in the face of similar challenges, adopting innovative ways of thinking and working. The purpose of the Organizational Transformation Study Tour is for SUA's leaders to explore how other universities addressed challenges through strategy, structure, and system improvements and to develop a plan for incorporating lessons learned into ongoing transformation efforts at SUA.

Objectives of tour

The tour has three main objectives: 1) Learn from and share through collaborative relationships with peers at other universities in East Africa; 2) Identify strategies used by other universities to achieve excellence in the face of a challenging higher education environment; and 3) Create a plan for incorporating lessons learned into ongoing transformation efforts at SUA.

The study tour participants will meet with a variety of stakeholders on how each university addresses the following issues:

- Strategy
 - Internal and external drivers and agents of strategy formulation, including the national higher education policy framework
 - Strategy formulation process
 - Strategy utilization in management
 - Strategic priorities
 - Resource enhancement, including internal income generation, cost cutting, and revenue distribution
 - Communicating strategy to internal and external stakeholders
 - Role of administrative and academic quality assurance in strategy
 - Role of planning office in strategy formulation
- Structure
 - Relationship between strategy and structure
 - Current structure (organogram)
 - History of restructuring
 - Lessons learned from restructuring
 - Extent of devolution of powers and resources
- Systems
 - Relationship between strategy, structure, and systems
 - Major changes in administrative, financial, and academic systems arising from restructuring
 - Implementation and monitoring of quality
 - Organizational learning processes for strategy, structure, and system improvement
 - Role of planning office in strategy implementation, monitoring, accountability, and reformulation
- Organizational Culture
 - Commitment to university goals and objectives
 - Management style
 - Accountability
 - Communication
- Income Generation
 - Departmental income generating units
 - Formula for distributing revenues
 - University-owned companies
 - Joint ventures
 - Tuition income
 - Income generation policies
 - Contribution of income from non-traditional sources compared to traditional sources

History and Growth of the Kenyan Universities Visited

All three universities visited share a similar history to Sokoine University of Agriculture. They all began as small colleges affiliated to larger universities and grew into full-fledged universities. In addition, they all have a significant agricultural background, which is reflected in the current programs offered by the universities. Finally, the three universities are roughly the same age as SUA. These similarities to SUA provide an opportunity to draw lessons from their experiences that are relevant to SUA.

Egerton started as a farm school in 1939 on land granted to the school by Lord Egerton, a British settler. It was later affiliated to the University of Nairobi as an Agricultural College, offering diploma

training. In 1987 it became an independent university, offering undergraduate training in agriculture and related fields. Recently, the enrolment of university has grown from 5462 students in 2008, to 15,343 in 2012 and 25,600 students currently.

Likewise, Kenyatta University was established as a teachers' training college in 1965 with facilities that were former military barracks. In 1975 it was transformed into Kenyatta University College and affiliated to the University of Nairobi. The college had a strong emphasis on teacher education, but it also offered programs in horticulture and food science and technology. It became a full-fledged university in 1985. The university has witnessed a dramatic growth in terms of programs and student enrolment. Between 2006 and 2015, they have gone from 6 to 15 schools currently, from 43 to 70 departments, and from 15,000 to 70,000 students. Programs throughout the university currently have a very strong emphasis on entrepreneurship.

Jomo Kenyatta University of Agriculture and Technology began as a constituent college of Kenyatta University in 1989 on land granted by the first President of Kenya, Mzee Jomo Kenyatta. Initially, it focused solely on agricultural related training, but since it became a full-fledged university in 1994, it has gradually developed excellence in other fields, including technology and engineering. The student population at JKUAT has grown from 10,000 students in 2008, to more than 40,000 students currently.

Findings

Strategy

Vision

- Each of the universities has a clearly articulated vision statements that clearly guide them in both long-term and daily decision making. These visions are focused on being modern and innovative universities:
 - Egerton: To be a world class university for the advancement of humanity.
 - KU: To be an innovative, focused, competitive and user-centered library service to the endeavors of Kenyatta University community.
 - JKUAT: A University of global excellence in training, research and innovation for development.
- The vision statements are clearly displayed throughout the campuses.

Mission

- Each of the universities has a mission statement that identifies the university's responsibility to meeting the developmental needs of the society and the economy of Kenya through teaching, research, and outreach:
 - Egerton: To offer exemplary education to society and generate knowledge for national and global development.
 - KU: To provide a dynamic learning environment and quality user-centered information services that enhance teaching, learning and research while inculcating life-long learning skills and fostering human development.
 - JKUAT: To offer accessible quality training, research and innovation in order to produce leaders in the fields of agriculture, engineering, technology, enterprise development, built environment, health sciences, social sciences and other applied sciences to suit the needs of a dynamic world.

Drivers of strategy

- The strategies of the three universities are driven by various factors including the country's Vision 2030, the new constitution of 2010, the revised Universities Act of 2012, the reduction in government subvention for universities, the government's sectoral policies and plans (such as the policy of universal access to education), the nation's population growth, economic opportunities and efforts to reduce unemployment, the growth in the number of university applicants
- The study tour team was impressed by the fact that all three universities identified the same list of factors, suggesting that universities in Kenya have a common understanding of the challenges they face

Strategy formulation process

- The University Councils are mandated by law to sign a performance contract and are required to develop a strategy for achieving it. The contract is an agreement between the university and the Ministry of Education. For this reason the Councils take the initiative in developing the strategic plan of the university.
- The strategic plan is intended to be a management tool, and therefore clearly defines priorities and targets.
- The strategy formulation process is highly consultative, involving both internal and external stakeholders.
- Various tools are used to gather and analyze data for the establishment of a baseline and development of the plan, including SWOT and PESTEL.
- Annual action plans, derived from the strategic plan and translated into performance contracts, are cascaded downward from Council to the Vice Chancellor, DVCs, Deans and Principals, Department Heads, and individual staff members. The university's performance contract is, therefore, an aggregation of the targets from the level of individual staff members to the Vice Chancellor.
- The strategic plans begin with formulation at the department, college, and school level and are ultimately compiled at the central level.
- At Kenyatta University, the Vice Chancellor emphasized the need for leaders to be visionary and takers of intelligent, calculated, and manageable risks with clearly identified 'plan B' to manage contingencies.

Strategy utilization in management

- The study tour members observed that the strategic plans are truly living documents at the three universities and that they guide every activity implemented at the university, in particular the translation into annual work plans, targets, and performance contracts.
- Strategic plans are circulated widely inside and outside the universities.
- The implementation of the strategic plan is monitored by a committee through a quarterly reporting system as well as the annual performance review of individuals.
- Every annual budget created by the University Councils has a significant development component for expansion of the infrastructure required for new campuses and programs.

Resource enhancement and financial sustainability

- The three universities have sought to expand their budgets sustainably through expansion of student enrolment, both government-sponsored and self-sponsored. In particular they have emphasized recruitment of self-sponsored students who pay tuition five times that of government sponsored students. Furthermore, they have developed new programs and

established new campuses as well as offering night and weekend courses. They have also increased revenue by establishing multiple cycles of registration throughout the year.

- The universities have shifted some costs to students through fees. For example, JKUAT requires all new students to purchase a computer and to pay for the cost of field attachment supervision.
- The universities have increased research and development grants through steps including establishing endowment funds, seed funds, revolving funds, and providing support for identifying grant opportunities and writing proposals.
- Each of the three universities has established a private company, owned 100 percent by the university, for the purpose of generating income.
- JKUAT has established a joint venture with a foreign company and KU has entered into a “build-operate-transfer” scheme with a foreign company for student construction and management of student hostels for 10,000 students. After 20 years the university will assume full ownership of the hostels.
- The universities have fully functioning intellectual property offices focused on commercialization and technology transfer.
- All three universities promote and support income generating activities attached to departments and faculties. Examples include:
 - Egerton has a unit that produces milk for sale
 - JKUAT’s Food Science Department produces numerous products and its Horticulture Department started production units that produce and sell tissue culture banana seedlings and mushroom spawn
 - KU operates a mortuary at the School of Anatomical Sciences
- The three universities have pursued funding from sources that are not traditional in sub-Saharan Africa. For example, they have created endowments, international foundations, and are targeting alumni, and encouraging philanthropic contributions.
- Cost cutting is part of the revenue enhancement strategy of the universities. For example, the universities no longer pay seating allowances for meetings, they in-source the design and construction of campus buildings, and have moved to paperless meetings.

Communication strategy

- Communication is strategically placed under the Vice Chancellor at all three universities to drive envisioned change.
- The communication offices handle communications with both internal and external stakeholders, including the national and international media.
- The communications offices use various media to communicate with stakeholders, including print, web, social media, speeches, TV, and radio.
- Social media is used as a key tool of customer service and addressing concerns of students and other stakeholders.

Quality assurance strategy

- The quality assurance initiatives of the universities ensure that strategic plans are implemented effectively through performance contracts, ISO 9001, and service charters.
- The quality assurance offices are domiciled under the Vice Chancellors, emphasizing the seriousness with which the universities engage in performance monitoring.

Structure

Relationship between strategy and structure

- Kenyan universities operated under a common Universities Act and university-specific charters. However, their strategic plans are not bound by the charters, and study tour members found evidence of creative organizational planning and implementation beyond the charter in all three universities.
- Directorates are used extensively to delegate responsibility on particular issues and relieve pressure on top management and expand into new areas. At Kenyatta University, all 40 Directorates are under the Vice Chancellor's Office. At Egerton University and JKUAT, the Directorates are under the DVCs.
- All the universities rely heavily on internal staff for planning and organizational design, but do not hesitate to bring in outside expertise when necessary to support their planning efforts.

Current structure (organograms in annex)

- Though the universities have all created colleges and schools, many administrative functions are still centralized. They all are striving to decentralize, but the process is not yet complete.
- One of the advantages of centralization is that it has facilitated the creation of new campuses by giving top administrators discretion over the allocation of funds.
- Two of the universities have three DVCs and one of the universities has four DVCs.
- The University Councils have all been reduced in size and now have nine or fewer members.
- Research is elevated to the DVC level in all three universities.
- At JKUAT, administration and finance are handled by two separate DVCs.
- Some of the universities have established registrars under each DVC. The registrars are senior level academic or administrative staff who play an important role in the performance of administrative functions, and they have facilitated the expansion of the universities.
- Academic staff members who assume administrative functions have their teaching load reduced by half.
- The Intellectual property, linkages, and technology transfer offices in the three universities have been elevated to the Directorate level, staffed by a Director, Deputy Director, and administrative and academic Directorate staff members.
- Each of the universities has a central planning office. JKUAT also has a planning and budget unit under each of the four DVCs.

Lessons learned from restructuring

- Restructuring of the universities was driven by the external environment, including government policies and economic and demographic conditions. The changing external conditions were perceived by the universities as opportunities for expansion of enrolment, improvement of quality, and growth of income.
- Visionary leadership, effective communication, encouragement of innovation, and intensive participation are keys to successful restructuring.
- Communication is viewed as a critical university function, operating directly under the offices of the Vice Chancellors.
- The University Councils and top administrators have adopted innovative structures and systems to facilitate the increase in enrolment. For example, they have established additional campuses and Directorates to support new programs and services provided by universities.

- The process of restructuring for expansion has led to an increase in the number of administrative units. University leaders felt that expansion was justified to deliver additional services required by a growing student and staff population.
- The quality of the new administrative units is ensured through performance contracting with deliverables that help fulfil the requirements of the strategic plan of the university.
- Restructuring has taken place concurrently with enhanced resource mobilization through research grants, tuition from expanded enrolment, and partnerships with public and private sector organizations.
- The universities have not only relied upon the traditional formal system to bring about change. They have also creatively employed teamwork through informal interactions that complement the bureaucracies of the universities. For example, the Vice Chancellor at KU assembled a team that wrote a successful grant proposal in 24 hours. In addition, several of the universities have established research thematic groups, including both internal and external members, for networking regarding grant opportunities and sharing of expertise on particular topics.
- National higher education standards, by creating clarity and orderliness, can lower the cost and difficulty of expanding universities and their programs (for example, staff-student ratios for academic programs and infrastructure requirements for educational facilities).
- Organizational units should be staffed sufficiently to achieve their performance targets
- The universities have met their staffing requirements through forward-looking planning, the creation of business plans, and the utilization of internally generated funds to cover staff salaries.
- The government of Kenya does not tie funding for universities to particular line items. The universities receive funding from the government as a lump sum and are allowed to allocate the budget according to their priorities. This system facilitates rapid and efficient establishment of positions and recruitment of staff for new and expanded programs.
- All three universities place a high priority on time management at the institutional and individual levels. For example, length of meetings is controlled by agendas and documents being sent in advance; not allowing AOB (any other business), concise meeting minutes, effective use of sub committees to discuss and recommend decisions for approval, and the use of electronic documentation that allows rapid dissemination of meeting materials.

Systems

Relationship between strategy, structure, and systems

- As the universities have adopted new strategies and structures, they have also introduced new systems to ensure that the strategies are implemented successfully and the structures can operate efficiently.
- At KU, the Vice Chancellor utilizes a systems approach to leadership to create sustained growth and high performance. The systems approach is built upon the idea that individual components of change can best be planned by considering the interaction of those components. This approach emphasizes the optimal design and implementation of the systems whereby a university transforms inputs into outputs and outcomes.
- Guided by national development policy, the universities have mainstreamed gender considerations throughout their strategy (for example, through enrollment targets), structure (for example, through the selection of women for leadership positions), and systems (for example, through the provision of gender-relevant services).

Administrative, financial, and academic systems

- Meetings are held regularly at all levels, facilitating timely decision making and communication. For example, top administration and the Deans at JKUAT each meet weekly on a particular day and time. Additionally, performance contracts require the holding of meetings and require members to attend at all levels, including departments.
- The universities have established systems, managed by directorates, to facilitate the development and monitoring of performance contracts.
- The universities have adopted modern, computer-based management systems for student records, finances, fee payment, and other functions. The result has been improved operational efficiency and reduction of financial leakages. The ICT units are fully resourced to design and manage these systems.
- University payments and receipts are made through the banking system, eliminating use of cash for most transactions.
- The universities are using cutting edge technologies to improve staff and student performance. For example, JKUAT is developing a biometric system for monitoring class attendance.
- Costs are cut through bulk procurement of high use items, e-procurement, and purchasing direct from manufacturers.
- Effective budgetary control measures are in place, including automatic verification of account balances before approval of payment.
- The universities have invested heavily in efficient maintenance systems for physical facilities. This has produced attractive campuses and boosted the image of the universities.
- The universities cater to the needs of diverse student populations. For example, KU has become a leader in providing services for disabled students, such as transportation, library services, and accessible infrastructure.
- The universities have established funds to help low-income students to gain access to higher education.
- Promotion of academic staff is tied to research output, teaching performance, and acquisition of external resources. The universities sets targets on both individual and institutional achievement, with individual performance contributing to institutional performance.
- The universities have all established training systems for induction and orientation of new staff members and newly appointed university leaders, including Council members. For example, members of the KU Council are trained on corporate governance, risk management, and financial management.
- All the universities invest in staff development, including training in pedagogical skills provided for staff with little or no teaching experience.
- The universities have invested in support systems for incentivizing, disseminating and measuring the quantity and quality of publications at the individual unit and university levels.
- The universities are expanding the scope and volume of services available to help staff members pursue external opportunities for funding.
- The universities have established systems for data gathering and analysis to make sound management decisions. For example, at KU the top management assigns staff members to write analytical briefs to guide decision-making.

- The universities all have procedures for the development and maintenance of website content. JKUAT has incentivized the preparation of high-quality departmental websites by rewarding top performing departments.
- The universities are providing a growing range of welfare services for staff and students, including counseling, disability services, and sports activities.
- The universities have put systems in place to plan for and manage succession, including training, early recruitment, and a period of overlap between the outgoing and incoming office holders. For example, University Councils are required to retain 50% of members during each transition cycle.
- Selection of VC and Council members is competitive. The positions are advertised, and candidates apply and are interviewed.
- Using internal capacity as much as possible in provision of services, such as construction

Quality assurance

- All three universities use performance contracting, service charters, and are ISO 9001 certified.
- The Kenya Bureau of Standards performs ISO 9001 audits.
- Actual performance is compared to targets set in performance contracts for individuals and the various units of the university, up to and including the office of the Vice Chancellor.
- For all three universities, quality assurance is considered an audit function and is monitored by the audit committee of University Council. Results are reported quarterly to Council through the audit committee.
- Budgets for achievement of targets are cascaded upward from the individual employee through departments, colleges, schools, DVCs, and the Vice Chancellor. The government honors their budgetary commitments thus ensuring sufficient financial resources are available for successful implementation of the performance contracts.
- The Commission for University Education (CUE) does academic audits for accreditation.

Organizational learning processes

- The universities regularly hold retreats for senior management, during which they reflect on direction and performance.
- Regular meetings, retreats, workshops, and study tours facilitate continuous learning and improvement in the strategy, structure, and systems of the universities.
- The universities have a suggestion box system, which provides members of staff an opportunity to register complaints, compliments, and suggestions. Boxes are located in many places around campus, and suggestions can also be submitted online.
- Customer satisfaction surveys are used to elicit feedback and provide data on performance towards particular targets.

Organizational Culture

Commitment to university goals and objectives

- All universities make a serious effort to ensure that all employees, students, and other stakeholders understand and share the university vision and mission. The mission and vision are posted in public places throughout the university.
- Leaders actively build pride in the university through branding, quality service delivery, recognizing achievements, and improvements to the physical environment.
- All the universities are committed to local, national, and global competitiveness.

Management style

- The three universities have all adopted a consultative style of leadership, drawing ideas and opinions from all levels of the university.
- Teamwork is cultivated management and utilized at all levels of the universities.
- Quality management is a central feature of the management philosophy at all three universities.
- Top administrators, including the Vice Chancellors, have an open door policy, which facilitates access by staff and students.
- Vice Chancellors are outward looking and actively engage in networking with public and private sectors to cultivate new partnerships and opportunities.
- The University Councils take responsibility for developing the strategic plan and monitoring it to ensure it is carried out.
- The management style of the three universities emphasizes comprehensive and highly-responsive communication.
- Management is committed to entrepreneurialism, self-reliance, and economic, social, environmental, and institutional sustainability.
- Leaders cultivate and rely upon champions of change throughout the university.

Accountability

- Accountability is built into the strategy (through the involvement of Council and the engagement of stakeholders) and systems (through performance contracting) of the universities.
- Leaders emphasize the importance of accountability, and staff and students appear to accept the notion that accountability is central to the success of the university.
- Performance is incentivized through rewards, while lack of performance is sanctioned and met with consequences.
- JKUAT uses 360 degree input (from below, by peers, and by superiors) in staff evaluation.

Income generation

- All three universities have developed strategy, structure, and systems for income generation and have established formulas for distribution of revenue from various income generating activities.
- The universities are proactive in seeking out opportunities for generating income.
- The primary reasons the universities are pursuing non-traditional sources of income are declining government support for higher education and the projected leveling off in the growth of student enrollment.
- Income from tuition fees contributes a higher proportion of the budget than any other source at all three universities.
- The share of the budget coming from income generation varies from 7 percent at KU to 17 percent at JKUAT. While income generation from non-traditional sources is currently a relatively small share of the budget, the university administrators are committed to nurturing its growth. University leaders estimate that non-tuition income generation could grow to 20 percent of the university budget at KU and 30 percent at JKUAT.
- At JKUAT, leaders invest in capital for expansion and say that they cannot make money without spending money.
- The universities are cultivating alumni relationships and expect financial contributions from alumni to be an important source of income in the future.

- Departmental income generating units at JKUAT recommend that the university establish separate structures for human resources, procurement, and financial management.

Expected Outputs and Outcomes of the Tour

1. Changes of mindset of study tour participants and SUA community to bring about a paradigm shift.
2. Signed MOUs between SUA and JKUAT, Egerton, and KU – by the end of the tour, MOUs were signed with JKUAT and Egerton.
3. Written report on lessons learned and next steps – report will be completed by September 7.
4. Lessons learned shared with Committee of Deans, Senate, and SUA Council – will be shared during the month of September.
5. Advancement of resource mobilization plans at SUA – specific plans outlined in The Way Forward.
6. Advancement of restructuring implementation at SUA – specific plans outlined in The Way Forward.
7. Discussion and consideration of new organizational experiments at SUA supported by iAGRI based on learning from the tour.
8. Increased interaction between SUA and other universities and regional

Photograph of MOU signing at JKUAT

organizations.

The Way Forward

Strategic Planning

1. University management and iAGRI will present trip report to Committee of Deans, Senate, and Council in the September 2015 meeting cycle.
2. University management will perform a mid-term review of the current strategic plan implementation to be presented at the December Council meeting.
3. Corporate Strategic Plan Implementation Coordination Committee will conduct individual consultations with external stakeholders on university strategy before the December Council meeting.
4. University Council will hold a retreat on university strategy immediately following the December Council meeting, on December 18 and 19 in Morogoro. The VC will consult with Council members immediately to plan the retreat and ensure availability.

5. University management will identify key stakeholders and draft a new Corporate Strategic Plan, which incorporates lessons in a systematic way (beginning in mid-January).

Income Generation

1. Income Generating Unit management will be put in place
 - a. Appointment of IGU Coordinator (date to be provided by SUA management by September 4)
 - b. Approval of new procedures for IGU management, including the formula for revenue distribution (date to be provided by SUA management by September 4)
 - c. Staffing of IGU Coordination Office (date to be provided by SUA management by September 4)
2. SUA Invest
 - a. Management appoints a search committee to identify members of Board of Directors and General Manager (already completed)
 - b. Appointment of Board of Directors (September Council meeting)
 - c. Board of Directors selects and recommends a candidate for General Manager (GM) (mid-November)
 - d. Finance, Planning, and Development Committee reviews selected candidate GM (late November)
 - e. GM hired (December Council meeting)

Appendices

Agenda/program

List of tour participants

Guiding questions

Organogram from each university

External Program Review Report
Department of Crop Science and Production, Sokoine University of Agriculture
22-26 July 2015

External Review Team Members: John Cardina and Matthew Kleinhenz
Department of Horticulture and Crop Science, Ohio State University

1. General Departmental Issues and Observations

1.1. Preamble

We wish to express sincere appreciation to the Department of Crop Science and Production, Sokoine University of Agriculture, for generous hospitality during the review. We also extend our thanks to the iAGRI Project Management Entity at OSU and to the Project Management Unit in Tanzania for supporting this review and our travel expenses. Our itinerary was well-organized and all meetings were well-focused. The review team commends the Department for the effort put into the preparation for this review. In particular, we applaud Dr. Theodosy Msogoya for sincerely inviting a candid review of the Department with the end goal of strengthening training, research, and income generation. It is clear that significant time and thought went into the preparation for our visit. Also, thanks to those who assisted in the logistics of the review and all those within and outside the University who participated in the various sessions.

We acknowledge the time that Dr. Susan Nchimbi-Msolla, Dean of the Faculty of Agriculture, spent with us, and her affirmation of the importance of the Department. It was made clear to us that the Faculty recognizes the importance of the Department of Crop Science and Production to the success of the University.

1.2. Issues and Goals

Purpose: To work with the Department of Crop Science and Production to provide strategic visioning on curriculum, research and outreach activities as a first step in designing the Departmental restructuring plan that more effectively responds to the needs of students and stakeholders in the public and private sectors of Tanzania (see Annex 1 – SOW).

Our review was organized to address several issues, including: the Department structure and restructuring in light of the University restructuring; the student practical training experience; strengthening outreach and relationships with stakeholders; income generation from the Farm and Tissue Culture Lab (see Appendix 1 for the review schedule). These were the main overlapping and interacting themes, all set in the context of ongoing reorganization at the University level and with an eye to the future relevance and sustainability of the Department.

This document will address the major themes drawn from the review and provide our insights and ideas for consideration. As two outside reviewers with limited experience and understanding

of the University or of Tanzanian culture, we have no illusions that we have definitive answers to what the Department should now do. Our role was to observe, ask questions, pose suggestions, and provide reflection, trusting in the intelligence and creativity of the Department's academic staff, students, and administrators to chart a path forward that meets their needs for a secure future. We are encouraged in this by the sense of unity in the Department and the quality of leadership at the Department and Faculty level.

2. SWOT Analysis of the Department

2.1. Approach and goals.

We conducted a SWOT Analysis for the Department, attended by Departmental Staff. The first step was to agree on the goal of the SWOT Analysis. The initial draft ("Make the department relevant to future agriculture in Tanzania") was modified to: "Insure the Future Relevance of the Department of Crop Science and Production to its Stakeholders (farmers, students, corporations, NGOs, alumni, consumers, etc)."

2.2. Outomes.

The staff identified Strengths,Weaknesses, Opportunities, and Threats as shown in Table 1. The next step was to determine if any of the threats could be turned into opportunities. The staff identified Climate Change as a clear external threat to agriculture in Tanzania; but this was also viewed as it is also an opportunity for securing project funding. The threat pertaining to "Little industrialization..." was also seen as an opportunity connected to "The need to transform Tanzanian agriculture...". Significantly, there was recognition that the strength of "The oldest department..." could be leveraged to turn the threat" Competition from new agriculture teaching and research institutions "into an opportunity. The weakness "Declining direct funding..." was seen as an external threat rather than an internal weakness, but that the strength "Success obtaining grants" could be used to reduce this threat.

There were many optimistic observations on this analysis. It pointed out the relatively young, well-trained staff with good success obtaining grants, poised to take advantage of opportunities to set the national agenda for agriculture and address global food security challenges. None of the weaknesses were structural or divisive issues that might block the Department from successful restructuring. Moreover, none of the external threats were so significant as to stall this progress.

2.3. Synthesis.

As a final exercise in the analysis we asked what the Department wants to be known for in the future. The responses came from the main points of the SWOT analysis, and the following statement was developed:

“SUA and the Department will be recognized, through its publications and outreach, for its completion of research and development of technologies that:

- 1) Move small holder farmers to higher levels of technology and financial success;
- 2) Produce graduates recognized nationally and globally for their quality, including hands-on skills, thinking, and problem-solving;
- 3) Recognition among stakeholders that the Department and University are essential to their success; and
- 4) Responsible, efficient use of resources (public, natural) and in obtaining new resources to carry out programs that serve the general good.”

3. Challenges

3.1. Global context.

The Department of Crop Science and Production faces significant challenges in its effort to restructure in a way that strengthens its teaching, research, and outreach programs while enhancing income generation opportunities. We take the view that today’s college graduates must be prepared to operate and compete on the world stage. Their peers are in China, India, and the Middle East, not just in Tanzania or throughout Africa. In their careers they will be interacting digitally and globally. Therefore, their university experience must prepare them for a future that values connectivity, innovation, and empowerment. Otherwise, their university experience fails them and hinders national progress.

Some of the challenges are systemic and structural factors that inhibit the ability of the staff and administration to implement creative approaches to the problems they face. Upper level controls on budgets, curriculum, enrollment, and creative endeavors are an impediment to personal growth of students and to economic development on a national scale.

We hope the system level issues will be addressed as part of the University restructuring and we will focus this report on problems that seem tractable at the department level. We recognize that sometimes the solutions to these problems might intersect with the systemic constraints. We continue to be impressed by the optimism and creativity of the academic staff in functioning effectively within an environment of scarce resources and structural impediments.

Table 1. Ideas and Insights Suggested during the SWOT Analysis of the Department.

INTERNAL		EXTERNAL	
Strengths	Weaknesses	Opportunities	Threats
<ol style="list-style-type: none"> 1. The oldest and “mother” department at SUA offering agriculture-based courses in Tanzania. 2. Well-trained staff 3. Strong mandate (i.e. national food security) 4. Significant land base and other infrastructure (i.e. facilities, farm, high tunnel etc.) 5. Committed students 6. Connections with stakeholders 7. Strong research and extension 8. Young academic staff 9. Attracting new programs 10. Strong collaboration among staff and across faculties to address complex issues, e.g. climate change. 11. Contributes to income generation. 12. Success obtaining grants 	<ol style="list-style-type: none"> 1. Shortage of technical staff 2. Declining direct funding (could be viewed as threat) 3. Labs not well-equipped 4. Inability to replace retiring staff (mandatory retirement 65). 5. Fixed and insufficient amount of lab, classroom space. 6. Lack of office space for post-graduates. 7. No SUA-based funding for research. 8. No support for proposal development. 9. Weak mechanism for enhancing awareness of SUA and the Dept. (i.e. limited marketing thereof). 	<ol style="list-style-type: none"> 1. Agriculture is backbone of Tanzanian economy; SUA and Dept are backbone of TZ agriculture. 2. Potential to set the agenda for TZ agriculture. 3. The need to ‘transform’ TZ agriculture from subsistence to an advanced business. 4. Increasing interest in TZ and its agriculture (nationally, regionally, globally). 5. High demand for specialized training. 6. Opportunity to improve food security (global objective) through agric technology. 7. Attractiveness to students from outside Tanzania. 	<ol style="list-style-type: none"> 1. Competition from new agriculture research & teaching institutions. 2. Lack of or declining funding while expectations increase. 3. Little industrialization, so little push for modernization to supply industry. 4. Declining education quality in primary & secondary schools. 5. Climate change. 6. Government policy changes to education (agriculture students are sponsored by the government but uncertainty about what will happen when such sponsorship stops). 7. Uncertain donor funding.

3.2. Facilities and infrastructure.

The building that houses the Department's offices and classrooms was originally designed as laboratories that have now been converted to other uses. We acknowledge that the Department is doing the best that can be done to make this building work for them. However, classrooms are poorly lit, lacking in electrical power outlets, and too small for their purpose. The classroom with a laboratory bench is especially outdated. Students are crammed into tiny desks. There is no

electrical backup system so when the electricity fails, as it frequently does, all computer systems, powerpoint presentations, and digital learning cease. Modern computer facilities appear to be largely lacking, and it was not clear what digital resources are actually available to students and staff. Moreover, there is no room for expansion. As science progresses and new methods and techniques are developed there is no opportunity for development of new modern laboratories.

Off the main campus about 1 km is the department's Horticultural Demonstration farm. This farm is used for income generation through selling its produce and provision of "high tech" practical training to students and farmers. However, this farm is on the edge of being too far from the main campus classrooms to be exceptionally useful as a teaching facility, the walk being too long to fit well into students' class schedules. The quality of this facility is reasonably good. Plots are laid out well, growing conditions are good, and a new pond is being built to provide extra water for trickle irrigation for farm plots. The potential for this facility to provide income generation through product and variety testing, workshops, and certificate programs is well above the current use.

With the Department is the African Seed Health Centre, established in 2004 to support training in seed quality and seed health. This is the most modern facility available to the Department, with air conditioning, good lighting, computer access, and a solar backup power system. This facility houses functional labs involved in seed germination analysis and labs specialized in seed pathology (i.e. mycology, virology and bacteriology). Without understanding the issues involved in the operation and control of this building, we believe that the facility should be the center of graduate education and research for the Department.

The Department also houses a plant tissue culture lab, two plant molecular biology labs, and a plant protection lab in the Horticulture Buildings. The plant molecular biology lab and plant protection lab are equipped with modern facilities and very functional. Similarly, the plant tissue lab is equipped with facilities and has adequate space consisting of the washing room, media preparation room, laminar flow cabinet room and growth room. However, the lab faces operational challenges, and therefore a support to this lab is required.

3.3. Academic staff.

The academic staff are well trained and engaged in the life of the Department. There is a range in age, from some recent graduates to well-established members who have come back after retirement to fill in teaching needs. Staff should be encouraged to attend at least one international meeting per year, prepare an abstract, and present a poster or oral presentation. This is an excellent way to become known on the global stage of your discipline, and is a way to spread good information about SUA and the Department of Crop Science and Production. Funding support is often available from international societies to assist with travel. We understand that staff are already busy and that keeping their current program going takes considerable effort. Nevertheless, there is often a need to revitalize academic positions so that teaching and research remain timely and relevant to current needs. Therefore, we offer a few suggestions to motivate deeper engagement:

1. Attend an international conference, write abstract and make presentation. Engage with international audiences.
2. Arrange for your postgraduate student (or 3rd-year undergraduate) to make a technical presentation on current research (or area of interest) to staff and students.
3. Hold weekly lab meetings with your students (open to all staff and students) to discuss current topics in crop science.
4. Develop a professional relationship via interchange by email and Skype to share experience in research, especially specific publications or outreach materials authored by the exchange partner.
5. Update (or create) your web site and keep it up to date as a resource for your students and the department.
6. Learn to use you-tube and other digital resources and integrate them into teaching.
7. Start a TED Talk (<https://www.ted.com>) round-table (view TED talks with students and other staff, and discuss).
8. Establish a community of scholars (in which everyone can participate) to enhance communication skills, proposal writing, manuscript preparation, statistical analyses, and other professional development skills in a less formal setting.
9. Host visitors from stakeholder community to speak with students and staff about what they do, the problems they face, research needs information diffusion attempts, successes and failures.
10. Create at least one learning objective in a course where students are judged by their ability to solve a problem, design, invent, create, imagine, describe, debate, present, or other non-traditional response.
11. Get out of the office and travel with/spend a few days with private stakeholder workers to learn their needs and how SUA can support them.
12. Conduct individual exit interviews with all students to determine what is working and what is not working.
13. Work with academic staff in other departments to establish an inter-disciplinary seminar program focused on issues that are at the intersection of multiple disciplines.

14. Arrange a sabbatical leave to work in a lab whose research is of interest to you. Staff with heavy teaching loads should be rewarded by support if they are able to get a Fulbright or other such funding.

3.4. Students.

We were delighted to have the opportunity to speak frankly and openly with undergraduate and postgraduate students. We found them sincere, respectful, curious, engaging, and optimistic. Unlike the U.S. classroom, none of the students were overly focused on cell phones – a good thing – but leading us to question the level of connectivity of the students relative to their counterparts across the world. We sensed significant variation among the students in their awareness of the resources available to them, something that could be addressed by more effective mentoring and orientation. The students seemed well trained and eager to listen. We wonder if they would enjoy more enough opportunity to think independently and creatively, and to work in teams to solve practical problems. This type of experience could be a significant advantage when facing new problems for which a ‘correct’ answer is not in the lecture notes.

The issues of concern raised by the students are the same as those raised by the other stakeholders with regard to the practical training. In addition, students have concerns about class scheduling and difficulties fitting in practicals. These should, of course, be taken seriously and probably resolved by adjustments to the course schedule. Practical sessions (each of 2 - 3 hours) are inserted in between 2 classroom lectures. Time for practical session is often wasted as students move from classrooms to practicals at farms or labs. One solution would be to schedule practical sessions separately after the lecture hours, or to design the practical so students could do them independently during free time.

We noted that students were able to communicate clearly in English. Our experience has shown that such students nevertheless struggle with English language tests (e.g. TOEFL) and with computerized graduate admission tests given in English (e.g. GRE). There are at least three issues here. One is that students apparently need more experience and skill in taking such standardized exams. This could readily be addressed by focused training for the most promising students. There are expertise and online resources to assist with this training. A second issue is computerized testing, which can be difficult for students who have little or no exposure to this medium. Again, resources are available to help with this, but the University and Department need to invest in facilities that make this possible. The third issue is that, like it or not, English is the language of modern science, and conversational skills are different from test-taking and science language skills. In order for SUA students to be competitive with peers from around the world, these language and test taking skills must increase, and the University and Department would benefit from investing in them.

3.5. Curriculum.

One challenge facing the course curriculum is inflexibility at higher levels that inhibits experimentation that could allow for continuous improvement. Beyond this we identified two major challenges. First is the three-year undergraduate curriculum, a system that is not up to standards of the rest of the world. At our university, we observe significant growth and maturation in our students from the third year to the end of the fourth year, something from which SUA students – and the whole country - does not benefit. We recognize that it is beyond the ability of the Department leadership to change, but it is only through pressure from the Department level that this might change.

The second major challenge is how to maintain and increase rigor given the possible influx of a large number of additional students. For SUA and this Department to maintain its leadership in agriculture at a national level, it is imperative that standards and rigor remain high. Therefore, we recommend additional degree programs for each major. For example: “Bachelor of Science in Horticulture” and “Bachelor of Science in Horticulture Technology.” Perhaps the name of the degree in the first and second years could be BSc. Horticulture with specialization in Horticulture Technology and Horticulture Science. The “Technology” degree would be for students who desire more hands-on practical training with field technology, whereas the other degree is for students who have more interest in developing chemistry, math, and other science skills toward the study of horticultural plants and production. These later students are those who might be encouraged to work toward postgraduate education.

One way to distinguish the degree programs would be to develop a student independent research requirement for students in the science-oriented track. Students would be required to conduct an independent research project. In year 2 they would choose the project (with help of advisor), conduct a literature review, write a proposal in which they describe the design of the experiment, and present the proposal to students and staff. In year 3 they conduct the project, collect data, analyze the data, write a report, and prepare a poster describing the project. They display the poster at a student research conference held on campus and open to everyone, with awards given to the best 3 or 4 posters/presentations.

4. Recommendations and Suggestions.

4.1. Approach.

Rather than reiterating the notes and outcomes of each meeting with diverse groups of people, we have chosen to provide a synthesis of observations and resulting suggestions. The main reason for this is that the same issues were raised by individuals representing different constituencies. When the same or similar concern was voiced by stakeholders, students, and academic staff, for example, we judged that the issue needs to be addressed in a systematic way. We see these as cross-cutting themes that are applicable to many aspects of the department. We

recognize that some of our recommendations will be difficult to implement; some will be impossible. Nevertheless, our ideas and suggestions are offered here for consideration.

4.2. Leadership.

We continue to be impressed by the quality of leadership in this department, beginning in Skype and email communication months before our visit and through the whole process of our evaluation. It is clear that the leadership cares greatly about the department and is working very hard to make the restructuring process successful. We urge the academic and technical staff to participate fully and support the leadership.

If there is any concern in this regard it is planning and nurturing of the succession of leadership. We trust that a fair process can be developed to prepare for leadership transition.

4.3. Use Database Technology More Effectively.

Agriculture is increasingly complex and data-driven; therefore, to be successful on the global scale the Department must increase its collection and use of data. For example, we urge you to work with a digital technology expert to set up databases to collect and analyze data on the following:

1. Your students – where they are from, where they go after graduation, the type of projects they do, and then follow them for as long as possible; your students are among your best ambassadors for your department and university. Some, we hope, will become successful and start their own businesses, or hold important positions of power, and so could be important benefactors in the future. We believe there is great value in developing a simple survey to gather information on newly arrived students, and matching this to a survey upon graduation. It might be useful to give a brief pre-test of very general crop science questions – not graded – to understand the knowledge base of your new students. Give this same test at the end of the third year. This will give you a measureable indicator of progress.
2. Your department web site– must be updated frequently and used as a source of support for students; course schedules, course syllabi, study guides, example test questions, assignments. All these and more should be available on the web page (these password protected as needed). The Department's web site contains the view of yourself that you show to the world, so it must be up to date and reflect positively on your department. It can be used to promote your research findings, especially publications – a quality publication is the best way to promote the Department's brand. It can also be used for marketing produce and plant material as well as services that you can provide for a fee. Through the web site you can gather information about who is looking at you and what they are interested in, which can be used to validate the work you are doing. Keeping up the Department web site is not trivial; it will require dedicated time by a technical staff member.

3. Individual staff web pages – Academic staff must develop a web page so that they can connect to global agricultural interests, activities, and opportunities. Staff should operate at a global level and their web page will connect them with researchers and other information sources from around the world. Travel to international meetings is expensive, but through the internet it is possible to reach out to people at other universities who can help to write proposals, provide resources, data etc. This takes time, but is an essential way to keep up with technology, scientific trends, and new methods of teaching or income generation.
4. Your Horticultural Demonstration Farm - An internet-accessible database to assist students, researchers, outside stakeholders, and others in knowing what resources are available on the farm. This database can also be used to track the history of every parcel on the farm, with all the information collected from each parcel (soil tests, crop history, pesticide history; pest history, productivity data etc).
5. Your Alumni – who they are, where they live, what they do etc; your most successful alumni are potential sources of funding and access to political and economic power. They are also connections for your students and staff to agriculture throughout the country and possibly beyond. Create an Alumni Association database – as simple as a searchable Excel file – with addresses, email, employment information and other data to follow the progress of the graduates of your programs. It might be necessary to employ a student for a brief time every year to update the information and prepare a report showing trends in success of alumni. This database has many potential uses from student recruitment, fund-raising, justifying your programs, helping students find employment, and other uses.
6. Your External Stakeholders. Create a stakeholder database – as above – to keep in communication with stakeholders, for use in fund raising, Field Practical Training (FPT) contacts, etc. This will include information on attachment hosts, and will be increasingly useful to the department for arranging for field practical experiences and for keeping track of who, in the wider community, views SUA and the department as a resource. These groups will be an excellent source of support for grant proposals and for student employment opportunities. Keeping in contact with them – and helping them stay in contact with each other – through regular Alumni and Stakeholder Newsletters (digital where possible) will help to keep them interested in the department and its activities.

4.4. Wealth Creation and Stakeholders.

Although the Department is clearly focused on the science of crops and their production, an over-arching theme is income generation – for the advancement of stakeholders and the Department. This is simply how the world works: what separates the successful farmer from the rest is the ability to generate income to reinvest in the farm and household. The Department has,

for many years, focused field research and development-related activities on small-holder farmers who make up the largest population of farmers in the country and are in most need of income enhancement. We agree that this agricultural sector should never be neglected or considered unimportant. In addition, we believe there are opportunities for agricultural development that become apparent if we consider agricultural livelihood and income levels in a more nuanced way. There are many programs, aid agencies, and NGOs focused on small-holder agriculture, and many of these organizations rely on metrics like numbers of farmers contacted or the number of bags of a particular input given out as their measure of success. It might appear that they have an interest in keeping small-holders at their current level; if the number of impoverished smallholder farmers decreased the level of success would seem to decline. A recent paper by Mdoe et al. (2015) characterized six major farming systems in Tanzania that also vary in the contribution of agriculture to household income. For the six farming systems there was variation in the percent of agriculture based income and the percent of households characterized as being poor. Farmers who rise above the small-holder status tend to diversify their crops or other income sources in response to changes in government policies, markets, as well as climatic factors.

Without neglecting the small-holders, we believe the Department should make a concerted effort to target farmers who have risen above the subsistence level and have some resources to invest in technologies that might further increase their success. One reason is self-serving for the staff: it is virtually impossible to get a research grant proposal or publish in a good journal one more paper on the kind of inputs (manure, compost, standard fertilizer) that might be appropriate for subsistence farmers. However, there are good research and publication opportunities for exploring more advance technologies, such as high tunnels, drip irrigation systems, row covers, plastic culture, precision pesticide application and so forth. Another reason is that farmers at this level are more likely to advance to diverse or intensive cropping systems that would be of interest to the department, and to be in a position to support the Department politically, financially, or to offer attachment sites for students.

4.5. Academic Programs.

The Department has an Undergraduate Studies Committee and a Postgraduate Studies Committee that manage the principal teaching programs, including curriculum development and management of student affairs. The main challenge that was raised by stakeholders, students, and staff is that the Field Practical Training (FPT) experience is not working as intended. This is considered a “signature program” that SUA is known for, so resolving the concerns about this program is of some urgency. As we understand it, several things contribute to the problem: the FPT occurs at the wrong time (dry season when nothing is growing), for too little time for students to gain sufficient experience, and students going into and out of the FPT end up not well trained in practical things as intended.

Our recommendation is that the Undergraduate Studies Committee should convene a meeting with stakeholders, attachment providers, and potential employers to devise short, medium, and long-term plans for how to change the FPT to be a more meaningful experience for students and hosts. We recognize that there might not be flexibility due to the structural constraints mentioned previously, but here are some things to consider in improving the FPT experience:

1. Expand and update a comprehensive list of attachment providers, especially in the private sector. Where the ministry is involved, more attention needs to be given to be sure the student has a quality FPT experience. This suggestion relates to the suggestion above to be more data-driven. The purpose of the on-line list is to make the process more transparent, so students and attachment providers know the expectations better and so the Department can collect data on the FPT. It might be possible to convince private sector stakeholders to provide some funding for (at least some) students during FPT so they can participate for a longer duration.
2. Work with attachment providers to create a document like a job description that details the expectations and desired qualifications and experience for students who would participate in a particular FPT. The Department already has FPT Guidelines, which is good. This should be available on the Department web site. The hosts and students need to be clear on what the expectations are of each other. Hosts need to provide constructive input on student performance, not simply take attendance. In addition, we believe there is a need to tie the FPT experience to the academic program by requiring students to submit reports, respond to specific experiences, make presentations, keep a journal, take pictures and other activities to document their FPT. For example, students could be expected to send email, twitter, or keep a blog as ways to update their academic advisor weekly about progress, questions, and assignments.
3. Attachment providers should have a standard evaluation document and provide honest and constructive feedback on the performance of students. This should include more than simple attendance. In addition, students should provide feedback on the quality of the experience. These mechanisms will hold the attachment provider responsible for providing a quality experience and help ensure serious participation by the student. It will also reveal when the attachment was a mis-match (i.e. the experience did not meet the student's interests) so that such things can be avoided. We urge the Department to hold exit interviews with students when they are ready to graduate, in order to gather information on the quality of this experience and ways that it can improve.
4. A suggestion that came from the stakeholder meeting is to develop the FPT into a unique, high-value experience that will distinguish your students from those of other universities in and around Tanzania that teach crop science courses. This is one way to stay ahead of the others and in fact to lead the way for others. Developing this program is a critical academic activity that can also be an opportunity for publication in the agricultural education literature; FPT

participants could also be collecting data that could be used in publications. To make this happen, an academic staff member must take control of the program and shape it into a more effective educational experience. As per the stakeholder suggestion as well as our experience, the system used at the Zamorano Pan-American Agricultural School located in Honduras provides an exceptional model that could be adopted here to great benefit. The approach at this university is Learning by Doing, wherein students work in on-campus businesses to acquire skills and abilities that complement the theory they learn in the classroom.

A second feature of the academic program that is a significant challenge for students and instructors is course practicals. The schedule does not seem to allow students to go to the farm and return to class, and in between do something useful. Simply hoeing or other manual activities in the hot sun without meaningful reflection on the experience are less useful as learning activities. This is not to suggest that students should have no experience with such work, but it could be incorporated into course work in a way that data can be collected (e.g. calculate how many calories are expended in weeding one row). We recommend that the Undergraduate Studies Committee reconsider what students are being asked to do and when for each particular course. Part of the concern voiced by students is the difficulty in scheduling. We did not get enough detail to understand this problem fully, but it is clear that there is a need to reorganize and reconsider time sequence of courses to better meet the needs of students. We urge the Department to explore ways of adjusting the schedule so students can work on practicals on their own time, including weekends, break time, etc. It might be necessary to coordinate with other Departments and Faculties to change the schedules to give students sufficient time.

Part of the problem with the practicals is lack of sufficient equipment and supplies. We recommend working with various equipment and supply manufacturers to see if they would be willing to supply equipment and supplies as happens at many universities. In fact, it is often easier for companies to provide supplies than financial support. Such donations could be good advertisement for them to be able to show that they have supported to your students and your Department. We believe the Department should work with private sector stakeholders to procure additional materials and equipment and be willing to look IAGRI, FINTRAC, other agencies to help. Another approach is to make extensive use of the internet for demonstrations of the kinds of equipment and supplies that students would use in the practicals. For example, You-tube is a source of many videos showing the use of equipment, including many more brands and versions of equipment than you could hope to have access to in your labs. Most manufacturers of field and farm equipment have web sites with demonstrations and images of their inventory, and these could be used as excellent teaching tools to supplement the practicals where equipment is lacking in the labs. In addition, there are numerous useful online courses and lab practicals that could be obtained from universities across the world. This is all part of the need to become more connected to the digital world. Without an improvement in equipment and supplies it is

necessary to change the expectations of the courses to match the materials and equipment available, which we think would lower to quality of the standards of the curriculum.

A third concern about the academic program is the integration of the Horticultural Demonstration Farm into course instruction. We believe there are opportunities for more creative academic approaches for use of the farm site. Selected course lectures can be conducted in the field, for example. Carefully examine your lecture materials. Consider whether all or some could be delivered in a field setting or at the farm if adjusted appropriately. Provide certain lecture materials for students to review outside of class so you use in-class time for more practical information exchange. Students need to learn how to learn on their own, so less reliance on lecture and more on out of class reading and internet viewing should be used. This is especially true for second and third year students. In the presentation about learning goals we shared the idea of orienting courses around what the student is expected to be able to *do* as a result of the course. Self-directed learning modules that a student can do on their own time, not during class time, could be set up at the farm to provide for this kind of practical experience.

A fourth over-arching issue of concern for undergraduate and postgraduate programs is the current lack of connectedness with internet resources. Part of this is due to power outage issues and part is technical issues that are beyond the reach of the Department. However, we urge the Department to work at the higher levels of the University to increase access of students and staff to the internet. This is an essential step toward connecting the Department with global peers. In addition, the Department should work with IAGRI to arrange for use of their Skype technology that could deliver course material from institutions outside of Tanzania. Academic staff at Ohio State and other major universities would be happy to include your students in their classroom. In addition, we would benefit from your students and staff delivering content on tropical crops and farming systems. In addition to regular course work this technology could help deliver certificate programs to students and staff, and could be used to help prepare students for the GRE and TOEFL tests.

Beyond these specific academic concerns, we encourage the Department to experiment with an outcome-based learning objective approach for courses. This means developing learning goals by considering what you want students to be able to *do* in a practical sense at the end of the course. Keeping track of their ability to do these activities is a way for the Department to know whether courses are effective in delivering course content, and whether students are learning the skills you want them to learn.

4.6. Income Generation.

In an environment of uncertain funding, the Department must aggressively pursue opportunities for income generation. The funding model as described to us is inflexible and irrational, but that

is beyond us to make changes at the upper administrative levels to change this. Given this situation, we saw several opportunities for greater income generation as follows:

1. The Department needs to start taking the issue of branding seriously by developing, promoting, and protecting the SUA Department of Crop Science and Production brand. We cannot overemphasize this. Beyond the name on the building and a couple of signs, we saw no use of the Department's name or the SUA logo even on campus, and certainly not in Morogoro or Dar es Salaam. The Department's name might be reconsidered to make it less difficult for the public to remember. Students and academic staff should readily identify themselves with the Department. The name should be on clothing and notebooks and pencils etc, and the colors of the University evident throughout. It should appear on every item that is produced and sold from the Department's farm, nursery, tissue culture lab, and on every publication, field day advertisement, fact-sheet, poster presentation, and powerpoint presentation. If used with care, this branding will return benefits at many levels, including the national political level. Students going out to do their Field Practical should carry the brand with them. This puts a responsibility on them to behave appropriately and perform with competence as an ambassador of your department.

The rationale is that your brand represents who you are. It represents the items in the "Strengths" column of the SWOT analysis. Ultimately, people throughout the country will recognize the brand as a mark of quality. It will take some effort to protect this, but it is a valuable resource that will allow you to promote the things that you can use to generate income for the Department. Explore options for truly connecting what you think you can market about yourself (your fundable assets) with actual compensation. Then try out the process. For example, if you expect some growers to be willing to pay for quality stock you produce, develop a system to test your expectation.

2. Promote proposal development to obtain more grants and contracts, especially for young academic staff. We encourage the staff to reach out to universities world-wide (including Ohio State) for research partners as a way to make SUA better known and to bring new skills to your staff and students. This might require advanced training in proposal writing and/or additional secretarial or technical help in preparing and managing grants. We suggest that the Department take some money off the top of successful grants (5%) to help run the Department and provide funding for this grant support. This money could also help pay for more instructors so that those getting grants are not overworked. In other words, getting a grant should not create a burden on the recipient. We believe it is critical to seek grant funding opportunities beyond the University level, including proposals written in conjunction with international partners. Recognize that you have much to offer investigators around the world who would be very interested in working with you. You must develop these relationships to stay competitive globally and to be sure you stay ahead of other universities that try to imitate

you. It will also be necessary to protect your interests in cooperative research proposals, including financial, IP and other interests.

3. Develop alternative training options that make use of your facilities and your excellent academic staff, technical staff, and students. For example, establish income-generating in-service certificate training programs directed to those working in agriculture throughout the country, including outreach workers, NGOs, volunteer organizations and others. These could involve general practical agriculture skills and information for non-agricultural audiences or very focused, highly technical courses in areas where your staff have special expertise.

An example would be a course on economic botany that could be advertised internationally and taught in the field and lab by staff with expertise in local botany and the food and medicinal uses of endemic species. There is great interest in this around the world and you could generate income by developing such a course. Another example would be to take advantage of your best facilities – the tissue culture lab and the molecular biology lab, for example – to develop short-courses on research methods for scientists, students, and others throughout East Africa. The idea is to take advantage of the best of your resources and the best of your staff to develop courses for elite groups of people who can gain from learning the techniques used in your Department.

There are other training needs throughout the country and region that would be of interest to farmers, extension personnel, Ministry of Agriculture personnel, private sector companies etc. These might include demonstrations of methods, technology, varieties, and management systems used on the Horticultural Demonstration Farm. These could be used to update training for alumni, diploma graduates, stakeholders etc; and you will know from your databases who has been in the field for several years and needs this training.

4. Use the Horticultural Demonstration Farm and tissue culture lab more effectively to generate income. International companies see Africa as a huge potential market that is poised to expand significantly in the next few years. This means they need to test their products in labs and on farms like yours. This gives them credibility, and it also gives them a connection to your brand and the value it adds. Moreover, every product you test should be part of an experiment that could be published in a quality journal. The farm should not be used merely for large scale production and sale of a single variety of produce grown in a single way. Any large scale field of a given crop is a place to test varieties, many types of inputs, management methods, marketing techniques, food preservation methods and so forth. These turn a crop field into an income generating opportunity and teaching opportunity and a research project opportunity for students and staff.

For the tissue culture lab the product is more specialized but the principle is the same. The science of tissue culture is not static, and international companies have an interest in producing high quality cloned material, especially with your brand attached.

4.7. Implementing the Vision.

The Department has articulated a mission and vision statement and now needs to implement these. Teaching, research, and extension outreach responsibilities among the current staff and possible new hires must be re-evaluated periodically based on this vision. The Department should consider annual departmental retreats that include academic and technical staff, and possibly student representatives. Shared vision requires input from all stakeholders. At some point, external stakeholders should also be included in the visioning exercise.

There is every reason for confidence in the current and future value of the Department. The Department is in a leadership position with respect to agriculture in Tanzania and we urge the Department to continue to set and maintain high standards for itself and its students so that this position can be maintained. Part of the challenge is to get your message – your brand – out to potential students, external stakeholders, potential funding entities, and government agencies to establish national recognition for the people and programs in the Department. The positive outcomes that can be obtained from a strong and strategic communication effort by the Department cannot be overemphasized. Internet web support will be essential for this communication.

The Department should consider establishing a departmental external stakeholder advisory group. This group would serve in an advisory role to the Department and, with time, would serve as ambassadors for the Department. This could be a very positive strategic move to garner additional financial, political, and other less tangible support for the Department.

APPENDIX 1:**Sokoine University of Agriculture
Faculty of Agriculture****Department of Crop Science and Production Visit program: 22 – 26, 2015**

Date	Time	Activity	Responsible persons
Sunday 21 June	4.00 - 06.00pm	Theo to discuss with John & Matt on process for stakeholder interaction and develop stakeholder interview questionnaire	Msogoya, Kleinhenz and Cardina
Monday 22 June	09.00 - 09.30am	Courtesy call to Dean (FOA)	Msogoya, Kleinhenz and Cardina
	10.30 - 12.30pm	Discussion with external stakeholders	Msogoya, Kleinhenz and Cardina
	02.00 - 4.00pm	Discussion with selected undergraduate and postgraduate students	Kleinhenz and Cardina
Tuesday 23 June	09.00 - 12.30 pm	SWOT analysis of Department of Crop Science and Production	Kleinhenz and Cardina & All staff members of DCSP
	02. 00- 04.00pm	Compilation of SWOT analysis and report preparation	Cardina and Kleinhenz
Wednesday 24 June	09.00 - 10.00am	Restructuring of Department of Crop Science and Production: the OSU experience	Cardina
	10.30 - 11.30am	Horticultural outreach: needs assessment and program planning	Kleinhenz
Thursday 25 June		Planning and enhancement of farm commercialization, training and outreach and overall sustainability for horticulture commercial farm	Cardina, Kleinhenz, Msogoya, Mtui. Rwezauala and M. Macha
	02.00 - 04.00pm	Suggestions on enhancing productivity of tissue culture laboratory and plant protection labs	J. Cardina, M. Kleinhenz, T. Msogoya, H. Mtui. G., H. Kanyagha
Friday 26 June	08.00 - 10.00am	Developing recommendations and next steps for restructuring of DCSP	Cardina & Kleinhenz
	10.30 - 12.30pm	Presentation of recommendations to staff members of DCSP	Cardina, Kleinhenz

Appendix 2: List of external stakeholders who participated in Departmental review

<u>S.N</u>	<u>Name</u>	<u>Institution/company</u>
1	Jacqueline Mkindi	Tanzania Horticultural Association (TAHA)
2	Isaka Mashauri	Tanseed International Company Ltd
3	Antonio Coello	Tanzania Agricultural Productivity Program (TAPP)
4	Rosaria Rwegasira	Regional Agricultural Technical Officer, Morogoro
5	Geoffrey Bakari	Balton, Morogoro, Tanzania
6	Wilson Kashanga	Syngenta (Morogoro, Tanzania)
7	G. Ruvuga	MVIWATA, Morogoro
8	Dr. Mtwaenzi, Director	TOSCI, Morogoro
9	James Kitasuma	ARI, Ukiriguru
10	Mashenene Malima	ARI, Homboro
11	George Mwasinga	Sugarcane Research Institute, Kibaha
12	Nene Halfan	ARI Nariendele, Mtwara
13	Theodory Kessy	ARI Katrin, Morogoro

SOKOINE UNIVERSITY OF AGRICULTURE



RESTRUCTURING OF THE MANAGEMENT SYSTEM AND ORGANIZATIONAL STRUCTURE OF SOKOINE UNIVERSITY OF AGRICULTURE

LESSONS FROM MAKERERE UNIVERSITY TOUR

April 2015

1. Introduction

Sokoine University of Agriculture (SUA) is in undergoing restructuring in which the university intends to achieve coordinated decentralized system based on delegating some of the powers from higher to lower organs within the University organizational structure. To kick start the process, the University Council approved piloting the process by splitting the Faculty of Agriculture into two independent academic units namely the College of Agriculture and the School of Agricultural Economics and Business Studies. Hitherto two meetings have been organized by the Dean of Faculty of Agriculture (FoA), Prof. Susan Nchimbi Msolla, to deliberate on the way forward. It was soon realized that the Department of Agricultural Economics and Agribusiness (DAEA) was ahead of other units in terms of preparing a restructuring proposal. This is because the idea of transforming the department into a college started several years ago but it was halted for some technical reasons. So when the idea came up again, the department did not start from the scratch; it was a matter of updating the previous proposal.

During the restructuring meeting held on 17th March 2015 involving heads of department and *i*AGRI management, the department presented its work plan in which it requested an opportunity to learn from other universities that have undergone restructuring. This is important in order to increase the probability of successful restructuring. *i*AGRI volunteered to support a tour to Makerere University to study their restructuring process and borrow a leaf that could add value to the restructuring process at SUA. The tour was held between 29th March and 2nd April 2015. The team members included:

1. Damian M. Gabagambi – Head of Department, DAEA
2. Sebastian Chenyambuga – Deputy Dean for Admin & Finance (FoA)
3. Carolyne Nombo – Director, Development Studies Institute (DSI)
4. Emmanuel Mbiha – Senior staff in DAEA
5. Charles Malaki – Member of Faculty restructuring task force
6. David Kraybill – Director, *i*AGRI
7. Isaac Minde – Deputy Director, *i*AGRI

2. Approach

Prior to the tour, a preparation meeting was held at DAEA on 23rd March 2015 in the conference room of New DAEA Campus to brainstorm on the key issues that the team wanted to explore at Makerere during the tour. The meeting was attended by the following:

1. Damian Gabagambi - DAEA
2. Sebastian Chenyambuga - Deans office
3. Emmanuel Mbiha - DAEA
4. Isaac Minde- *i*AGRI

At this meeting, a common understanding about the objectives of the tour was established, and a checklist of issue to guide the discussion was prepared as detailed in Box 1 below.

Box 1: Checklist for guiding information collection at Makerere University

- *Courtesy visit to the principal and if necessary other university dignitaries.*
- *Preparing a working timetable from 9 am to 3.30 pm for the three days.*
- *Rationalization made by Makerere to restructure. What do they understand by restructuring, what were the motives, what was the situation before restructuring?*
- *How was the exercise done?*
- *What were the challenges faced in the process of implementation and how were they resolved?*
- *What are the outcomes of the process? (Conduct a quick SWOT analysis and quantification of the outcomes)*
- *Stakeholder involvement. To explore the role of different stakeholders within and outside the university including any material support.*
- *If asked to redo the process how would they do it differently?*
- *To obtain a detailed description of the current structure touching on key areas such as relationship between schools/colleges and central management of the university including academic matters, finance, student matters, staff, research and funding etc.*
- *Short presentation of about 15 minutes or so to explain our vision and approach on restructuring with special emphasis on the proposed School of Agricultural Economics and Agribusiness.*
- *Our hosts to give us a physical tour of the university to get a first hand appreciation of available facilities and services.*

Thereafter iAGRI made a series of communication with Makerere University through the Principal of College of Agriculture and Environmental Sciences, Prof. Bernard Bashasha. It was realized the only open window for the tour on the part of Makerere was 29th March to 2nd April 2015 as Easter holidays were approaching. Professor Bashasha worked out a program that guided the tour. As could be seen from the program (Table 1) some of the people met were senior people such as the Acting Vice Chancellor, Deputy Vice Chancellors, and those who were instrumental in the restructuring process at Makerere. The team received maximum attention from all the people contacted despite a short notice appointment.

A typical day during the tour ran from morning to around 04:00 pm when the team returned to the hotel (Grand Imperial Hotel). In the evening, the team would convene to discuss emerging issues from the discussion during the day, draw key lessons and brain storm on the issues for next day.

Table 1: Program of interactive meetings with informants at Makerere University

Day	TIME AND OFFICIAL TO MEET			
Monday 30th March, 2015	9:00 am	2:00 pm		4:00pm
	Prof. Bernard Bashaasha, Principal, College of Agricultural and Environmental Sciences	Dr. Gabriel Elepu, Head Department of Agriculture and Natural Resource Economics	Dr. Florence M. Nakayiwa, Director of Planning and Development Department	Tour around the University
Tuesday 31st March 2015	8:00 am	10:00 am	2:00 pm	3:00 pm
	Prof. Barnabas Nawangwe, Deputy Vice Chancellor (Finance and Administration)	Dr. Vincent Ssembatya, Director, Quality Assurance Makerere University	Prof. E N. Sabiiti, CAES, Former Dean, Faculty of Agriculture and Senator	Prof. Buyinza Mukadasi Director, Research and Graduate Training
Wednesday 1st April, 2015	9:00 am	2:00 pm		3:00 pm
	Acting Vice Chancellor, Prof. Ernest Okello Ogwang	Dr. Denis Mpairwe, Head, Department of Agricultural Production (2:30p.m)		Prof. Adipala Ekwamu, Executive Director, RUFORUM

3. General Observations and Conclusions from the Visit

- **SUA can benefit from restructuring experiences of another university.** Makerere University is similar to SUA in many ways and therefore the restructuring experience of Makerere is relevant for SUA but there are also many differences. Some of these differences are because of differing legal and regulatory frameworks for universities in Uganda versus Tanzania.

Conclusion: Countries are different and universities as well. Copying and pasting a restructuring process might not work; local context must be taken into consideration.

- **Successful restructuring requires time and institutional learning.** The reform process at Makerere has taken a great deal of time and effort. In 1994, The Government of Uganda required the University to restructure but the process stalled. In 2000, Makerere restructured non-academic units, including Estates, but further restructuring of these units is now needed again. In 2007, the University tried to restructure but it moved forward in only one faculty (Health Sciences). In 2009, the Vice Chancellor (Luboobi) started a new academic restructuring initiative but it was

not implemented during this term. Later that year, an Acting Vice Chancellor (Baryamureeba) was appointed and he began to implement the plan in 2011.

Conclusion: Makerere failed to implement restructuring in several earlier attempts but it learned from its mistakes and was finally able to restructure. The new structure is not perfect and is still continuing.

- **Strong leadership is essential in restructuring.** The 2007 attempt at academic restructuring was led by a highly engaged Dean who chaired a University-wide Committee on Financial and Administrative Reform. He is now DVC-Finance and Administration and, in that role, plays a very active role in implementation of the restructuring. He says restructuring is not a one-time event but is a continuing process. Though Vice Chancellor Baryamureeba was later forced to resign, everyone with whom we spoke said that restructuring would not have occurred without his leadership. The University Council strongly backed the restructuring initiative.

Conclusion: strong central leadership is needed for implementation of restructuring. Leaders should monitor and evaluate the implementation process and seek to minimize personal interests in the process. It must be proactive and not passive and be ready to take difficult decisions. At times the University Council must make bold decisions to make things happen.

- **Objectives of restructuring must be clearly defined.** According to the DVC-Finance & Administration, who previously had chaired the reforms planning committee, restructuring at Makerere had two objectives: (1) to make functions more efficient by allowing lower-level units to make certain decisions and by reducing red tape, and (2) to achieve Makerere's vision of becoming a research university through creation of synergies among disciplines. In addition to restructuring, Makerere increased enrollment, revamped its administrative processes, and implemented quality assurance.

Conclusion: the objectives of restructuring must be clear from the beginning. Some objectives, such as increased revenue, can be facilitated by restructuring. And the rule of thumb is that don't restructure something that is working.

- **Restructuring can be done in phases.** Restructuring at Makerere was initially done in one college (Health Sciences) for five years (2007-2011) before other colleges began restructuring. This experimentation provided lessons and insights that informed the planning for implementation in the rest of the University.

Conclusion: restructuring is best done in phases. Units that restructure later in the process can benefit from the successes and failures of those that restructure earlier.

- **Unnecessary bureaucracy should be avoided.** Makerere's restructuring plan called for a three-tier system (central administration, colleges, and departments). Ultimately, however, they set up a four-tier system which, according to everyone with whom we spoke, this creates unnecessary bureaucracy and redundancy in communication.

Conclusion: A three-tier organizational structure is better than the four-tier structure.

- **Restructuring is just one among several important reforms.** A plan for restructuring and improving both academic and non-academic support functions was developed before restructuring was launched. As a result, Makerere changed over 50 policies and revised more than 40 processes (for example, admissions).

Conclusion: Changing structure alone is not enough to improve the functioning of a university. Policies and processes also need to be improved.

- **A plan must be created for devolution of administrative functions.** Before restructuring began, Makerere developed a plan for how administrative functions would be handled by both central administration and colleges. The University has at least partially devolved accounts, procurement, communications, post-graduate proposals and examinations, and ICT to the college level. For some of these functions, central administration continues to provide certain services. Admissions are handled centrally, though colleges are involved in the admissions decision.

Conclusion: It is important for a center-versus-college division of responsibility for administrative functions to be established before restructuring is launched.

- **Devolution of finances is essential for successful restructuring.** Makerere has not yet devolved finances to the college level and, according to everyone with whom we spoke, this is threatening the success of the restructuring. Officials at both central administration and college levels say that devolution of revenues to the college level is needed and is a logical next step.

Conclusion: devolving administrative functions to the college level is an ongoing challenge at Makerere. This has been a hard nut to crack for many universities in the restructuring process but failure to achieve intended goals of restructuring at universities is closely linked to failure to restructure financial and administrative systems

- **Technical planning skills are needed for successful restructuring.** Planning for restructuring at Makerere was backed by strong technical and financial support. The University's Department of Planning and Development, which has a staff of seven persons focused on academic and institutional planning, played a major role in gathering data, conducting analyses (for example, cost estimates needed by the proposed colleges), and drafting reports related to restructuring. Financial support for restructuring planning was provided by various donors. Consultants were brought in to assist at various times during the planning.

Conclusion: Planning for restructuring must be done primarily by a university's own staff to ensure ownership, adherence to goals of the university, and accountability, though consultants can usefully assist. A technically strong planning department is vital

- **Quality assurance is essential for restructuring to be successful.** The Directorate of Quality Assurance at Makerere tracks and helps improve the quality of teaching and learning, research and publications, administrative services, student services, and infrastructure. As restructuring proceeds, the Directorate seeks to make sure that restructuring improves quality and that expansion does not compromise quality. The Directorate is charged with monitoring and helping to improve Makerere's ranking among African and global universities. The Directorate is helping Makerere become a "research-led university" by co-sponsoring training on research grant preparation and management.

Conclusion: quality assurance is an important component of restructuring to make sure that restructuring contributes towards improved quality of programs and services.

- **Participatory planning is essential for getting staff and stakeholder buy-in.** Two Makerere faculties (Health Sciences and Agriculture) undertook a participatory planning exercise, involving internal and external stakeholders (including politicians and the private sector), in 2002-2003 as a first step in planning for restructuring. The Faculty of Agriculture held informal forums as the restructuring was in the planning stage and the Dean says this helped in reaching agreement within the Faculty about the College that was to be formed. This participatory groundwork paid off: the College of Health Science and the College of Agriculture and Environmental Sciences

have been quite successful and relatively free of internal conflict in their restructuring, according to reports from central administration.

Conclusion: a participatory planning process of consultation with internal and external stakeholders provides a foundation for restructuring into colleges.

- **Increased enrolment is the main source of internally generated funds.** Enrolment at Makerere expanded from 7,000 students in 1990 to 35,000 students in 2003 (and enrolment remains at around 35,000 today). Most (80%) of Makerere's revenue comes from student fees. The balance of revenue (20%) comes from the Government of Uganda. With the additional student revenue, Makerere was able to build a number of new classroom and office buildings. Internally generated funds were used by Makerere to pay for 40% of the staff wage bill until 2013. In 2013, the University increased staff salaries and is now paying for 80% of the staff wage bill.

Conclusion: universities can increase staff size, salaries, and facilities by expanding enrolment and without relying completely on government.

- **Over-proliferation of programs can become a burden.** At the height of its expansion over the past 10 years, Makerere had established over 400 academic programs. They have now reduced these to 160 academic programs because many of them were competing with other programs within the same academic units that created them.

Conclusion: It is better to establish a few programs with several options. The advantage of this, among other things, is that it is easy to adjust and cope with the changing labor market environment as options could be changed more easily than dearer programs.

- **The purpose of certificate and diploma programs should be defined.** Some colleges at Makerere do not offer certificates and degrees because unit costs for certificates and diplomas are relatively high compared to revenues generated by programs at this level. Other colleges at Makerere have chosen to offer certificates and diplomas as a way of recruiting future students.

Conclusion: The objective of offering certificate and diploma programs must be clear. In general, courses at this level have a high unit cost relative to revenues, though certificate and diploma programs may serve as a mechanism for recruiting degree students in some disciplines.

- **Good communication is important for successful restructuring.** The DVC-Finance and Administration shared with us that open and constant communication before, during, and after restructuring has been important for the success of the initiative. The Director of Planning says that much attention was paid to communication in the early phases of restructuring and, yet, the communication efforts should have been even greater than it was.

Conclusion: A multipronged communication system must be put in place so that a shared vision is built and get the majority of staff to buy in and support. Such communication helps to reduce resistance and complaints among members of the community. People resist changes and complain when they are not adequately informed.

- **Champions of change provide momentum for reforms:** A Change Management Committee was appointed by the Vice Chancellor at Makerere to facilitate and champion the restructuring process by helping to change mindsets through training, revamping policies and processes, and by assessing the resources needed for the reforms. In general, we were told by one of the reform leaders that it is important to not be delayed by laggards and that, if the process is designed well, most of them will eventually come on board.

Conclusion: a Change Management Committee can help build support throughout the institution for restructuring and reform.

- **Alumni can play a useful role in resource mobilization.** Makerere has updated its database of alumni, communicates with them frequently about the ongoing activities of the university, and asks them to assist in fundraising. For example, ex-President Kibaki, a Makerere alumnus, is assisting in raising funds for a proposed 20-story library building while ex-President Mkapa, also an alumnus, is helping to raise funds for another building complex.

Conclusion: Alumni have potential to become a good source of income to a university. But for this potential to be unleashed, a system must be put in place that keep them updated on development initiatives at the institution. For example, Makerere University is planning to build two complexes using its alumni who became presidents in their countries, for instance, President Mwai Kibaki and President William Mkapa.

- **A single university entity should be retained.** Makerere has remained a single entity during the restructuring process. This has increased the size and reputation of the University and allows fixed cost to be spread over many students.

Conclusion: Breaking a university up into separate universities may result in financial and reputational losses for the separate entities.

4. Specific Recommendations for DAEA and SUA

- **The department has been instructed to restructure into a school;** this is implicitly a 4-tier system that has been demonstrated to be expensive. To overcome this challenge the restructuring document recommends the department to restructure into an independent school. Although this sounds great, it contravenes the Sokoine University of Agriculture Charter that requires schools to be part of campus colleges. The Charter does not have units called “independent schools”.

Recommendation: DAEA should restructure into a prospective campus college and not a school.

- **Restructuring that creates synergies among staff of related professions** in the University increases efficiency in the utilization of expertise.

Recommendation: Consultation should go on among economists and business related professionals in different units so as pool them into the new college of Agricultural Economics and Business Studies. Arrangements should be made for the new college to providing services to other academic units throughout the university.

- **Successful restructuring starts by discussion on how administrative functions** would be handled by both central administration and colleges.

Recommendation: The starting point in the restructuring of the department should start with outlining the functions that should be decentralized and those that should remain at the centre e.g. admissions, handling of results, recruitment, procurement, accounting, human resource management....

- **In the spirit of establishing a few programs,** the prospective college of Agricultural Economics and Business Studies could start with a few departments and two centers.

Recommendation: The prospective college could start with two departments and two centers namely:

- i. Department of Agricultural, Resource and Food Economics (FARE)*
- ii. Department of Business Management (DBM)*
- iii. Bureau of Business Development Support (BBDS)*
- iv. Research and PhD Centre (RPC)*

The following programs are proposed for the new college:

S/N	Department	Program(s)
	Dept of Agricultural, Resource and Food Economics	<ul style="list-style-type: none"> ▪ Bachelor of Agricultural Economics and Agribusiness ▪ Master of Science in Agricultural and Applied Economics ▪ Master of Resource Economics
1.	Department of Business Management	<ul style="list-style-type: none"> ▪ Bachelor of Business Management <ul style="list-style-type: none"> - Marketing - Accounting - Finance - Human Resource Management - Entrepreneurship ▪ Master of Business Administration <ul style="list-style-type: none"> - Agribusiness - Marketing - Accounting - Finance - Human Resource Management - Entrepreneurship
2.	Centre/Bureau of Business Development Support	<ul style="list-style-type: none"> ▪ Incubator program ▪ Business clinics ▪ Consultancies ▪ Short courses
3.	Research and PhD Centre	<ul style="list-style-type: none"> ▪ PhD in Agricultural Economics ▪ PhD in Agribusiness ▪ Research Coordination ▪ Policy Analysis Unit

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Penultimate DRAFT

Report on BIFAD Visit to Sokoine University of Agriculture (SUA) and Innovative Agricultural Research Initiative (iAGRI)

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June 11, 2015

Introduction

The team was provided with extensive background materials before visiting Tanzania. It is apparent that the iAGRI project represents a comprehensive approach to human and institutional capacity development (HICD) and is intended to implement the strategic plans of the USAID Mission, the Feed the Future Initiative of USAID, and the agricultural development objectives of Tanzania. Accordingly, the project addresses the research, training and institutional capacity building needs of SUA, the Ministry of Agriculture, Food Security and Cooperatives (MAFC) and the strategic plans of the Ministry of Education (MoE), using a demand-driven approach.

iAGRI represents a partnership between a US university consortium led by The Ohio State University and including Michigan State, Virginia Tech, Tuskegee University, Iowa State University, and University of Florida, and SUA and MAFC in Tanzania. iAGRI is an innovative example of human and institutional capacity development (HICD) and represents a substantial USAID investment in university-to-university partnerships. iAGRI has developed a plan that is consistent with the human and institutional development needs of SUA and the human capacity needs of MAFC. It embraces a quality improvement paradigm sanctioned by the SUA administration. iAGRI has been able to navigate the formal structure of SUA. It has done so because of a talented team that has been assembled by the lead university, OSU, and because of the persuasive ability of the Chief of Party, David Kraybill from the Ohio State University, and the other USA-LGU consortium partners.

As the project has evolved, it has remained sensitive to the needs of the USAID mission, the culture of SUA, and the strategic direction of the MoE. SUA is a recognized leader in agricultural education and training in Tanzania and its future role seems assured if the processes of change can be managed to acquire the needed administrative functionality and infrastructure for higher quality faculty, critical research and relevant outreach. The MAFC component of the iAGRI project has focused on graduate education for ministry staff and their incorporation into collaborative research efforts, without the substantial institutional capacity development focus of the SUA component. For this reason, the focus of the BIFAD familiarization visit was on the SUA component of the iAGRI project.

Observations

1. Project Level:
 - a. *General approach.* The approach of iAGRI has been one of assessment, learning, and responsive creativity coupled with cultural sensitivity. This is embedded in an evolving theory of institutional change (TIC) that attempts to assess institutional process and structure relative to goals set by the university in concert with the national educational plan under the MoE and the development of a systematic approach to achieve those

goals. A key feature of this approach is the delicate interface between the formal and informal structures of SUA, with informal changes leading to institutional changes in an iterative process. SUA administration, faculty and staff and the iAGRI team are key actors in the implementation process.

SUA's challenge is not to define appropriate goals. They have already been identified. Rather, it is how to effectively implement changes that will facilitate their achievement. The iAGRI approach is consistent with recommendations of an extensive BIFAD review of human and institutional capacity development¹ and a review of higher education in Africa commissioned by USAID and conducted by APLU.² iAGRI and its Chief-of-Party, David Kraybill. It is an innovative, comprehensive approach to institutional capacity building. It includes human capital development and collaborative research components and focuss on both formal and informal university structures. Drawing on TIC applications from a wide range of public and private sector experiences, engaging experts in institutional change and building on Kraybill's considerable experience and thinking on change, the project represents a new and dynamic approach to university partnerships. Much can be learned from this experiment.

iAGRI's approach to *human capacity development* is based on an initial needs assessment of the Tanzanian Food System that delineated priority research areas and a subsequent human and institutional capacity needs assessment at SUA and the MAFC. The latter was aimed at establishing a starting point and seeking correct entry points to respond to the four objectives of iAGRI. Accordingly, the needs assessment aimed at determining skill requirements related to training and research at SUA, MAFC, and selected food system private sector firms. Identified skill and research gaps were used to establish an informed agenda for training and research. Human capacity development was linked to the institutional capacity development strategy which identified the need to build inter-disciplinary synergies, increase funding effectiveness, and enhance sustainability. Copies of these reports are available on line.³

- b. *Institutional Focus.* iAGRI has emphasized the need to transform SUA's structure and to build human capital in order to enable the university to be a stronger engine of growth for the Tanzanian agricultural economy, for rural development and livelihood improvement. The project has evolved under the iAGRI team's dedication to the belief that SUA can produce thousands of well-trained and relevant graduates for the national workforce, private and public sectors, and that it can be a national, regional, and continental leader in innovation in agricultural and food systems. iAGRI also is being responsive to training needs at MAFC.

¹ BIFAD (2014) BIFAD Review of Strategic Human and Institutional Capacity Development (HICD) Issues and the Role of USAID and Title XII under the Feed The Future Programs. http://www.aplu.org/projects-and-initiatives/international-programs/bifad/BIFAD_Library/bifad-human-and-institutional-development-report/file

² APLU (2014) African Higher Education: Opportunities for transformational change for sustainable development. <http://www.aplu.org/projects-and-initiatives/international-programs/knowledge-center-for-advancing-development-through-higher-education/knowledge-center-library/AfricanHEreport/file>

³ <http://www.iagri.org/reports>

- c. *Problem solving institution.* One of the great challenges for African universities is to become more relevant to the evolving needs of society, to transform into problem-solving institutions. iAGRI has developed an array of mechanisms to connect the university with the private sector, farmers and society. For example, iAGRI's Innovation Portfolio acts to broker research funding with local firms to commercialize products. More broadly, iAGRI is building the capacity and changing mindsets at the university to better serve the public through relevant research, outreach to the private sector and local communities, and continuing education opportunities. These pilot experiences illustrate the potential benefits of the university to address the key problems of the agricultural sector and to provide needed entrepreneurship and business development. The potential revenue generation for the university, made possible by a growing set of technical support linkages, could add significant financial support for future university expansion. Establishing improved policies for revenue sharing among units of the university and the faculty members will be critically important to insure appropriate incentives and effective cost reimbursement.
- d. *Partnership with US land grant institutions.* The iAGRI project is first and foremost a partnership between SUA and a consortium of six USA-LGUs, led by OSU. The partnership has two significant impacts. First, with an outside partner, change is more possible. One high ranking SUA administrator said that under the direct-funding model adopted by some donors there is little incentive for SUA to change but with the strong interaction of the iAGRI partnership, change is more likely to occur. Second, US land-grant universities have strengths in the processes that appear to be needed most by SUA (connection to the private sector, outreach to communities, integration of research, education and extension). It is notable that most of the SUA administrators were not trained at US higher education institutions, particularly land-grants, so while they understand the concepts of linking education, research and outreach, they are not knowledgeable in the administrative functionality to produce that linkage.
- e. *Support of the Mission.* The USAID Mission has been very supportive of the iAGRI design, conceptualization, and operations. They have supported assessment, learning and adaptation of the project that has allowed its evolution in response to the university environment and national needs. This approach, coupled with the cooperative agreement funding instrument, allows iAGRI to be more innovative, creative and effective. The overall working partnership has built trust of all parties that has allowed iAGRI to build the credibility with SUA leadership and staff that is fundamental to the TIC and achieving the goals of the project.
- f. *Support of the University:* SUA leadership is commended for the partnership role it has played in the iAGRI project. Both parties worked through the inevitable tensions of the start-up phase with success and mutual support. The Vice Chancellor and his key staff are supportive and willing to take chances and try new ways of doing things to transform the University with iAGRI's assistance. They articulate the key principles of the project and their willingness to work with iAGRI leadership to achieve transformation of the Institution.
- g. *Support of the OSU Management Entity.* Programmatic innovations being implemented by the iAGRI in-country team and other aspects of the project, including

contractual and financial reporting responsibilities, interfacing with the five USA land-grant university partners, and co-management of the collaborative research and degree training programs, would not be possible without the essential backstopping role played by the Management Entity (ME) at Ohio State University. The partnership between SUA and iAGRI has been greatly aided by having an OSU faculty member on the ground in Tanzania as the COP to communicate and build trust between the two universities. Effective communication between the OSU ME and the Project Management Unit has been critical for effective project administration and support. It has been greatly facilitated by video conferencing capabilities put in place by the iAGRI team (see Appendix 3 for further description of OSU ME roles).

- h. *Focus of sufficient resources.* The project has significant funding and is of sufficient duration to achieve significant impact at the institutional level; this is critical to successful institutional transformation. The level of funding and the long-term commitment of support are critical to have the partnership be a significant enough effort to make change happen at the institutional level.
 - i. *Establishing the SUA Brand.* A fundamental objective of iAGRI is to build the reputation of SUA to provide knowledge, services, education to contribute to Tanzanian economic growth and social development. To achieve these impacts SUA needs to develop stronger recognition within Tanzania, particularly with government ministries, Parliament, local governments, the private sector, NGOs, of the value it provides; a brand that embodies excellence, service, relevance and effectiveness in its role as Tanzania's premier provider of agricultural science, education and outreach.
 - j. *Feed the Future (FTF) support.* The iAGRI initiative is consistent with the goals of FTF in its focus on collaborative research and human capital needs that will enhance priority programs related to agricultural value chains and nutrition. iAGRI is laying the foundation for FTF to have a long run impact by building the human and institutional capacity in the country's primary knowledge-generating agricultural institutions, SUA and MAFC.
 - k. *Gender and special needs populations.* Our assessment indicates that SUA attempts to embed principles of gender analysis and sensitivity, targeting of critically impoverished populations, and focus on nutritional links with agricultural transformation processes in its teaching, research, and outreach. iAGRI, by committing to male-female parity in scholarship recipient selection, is assisting SUA to increase the number of women on the faculty. The project also sponsors a mentoring program for junior faculty and conducts programs in secondary schools to promote the study of science, with special targeting of female students.
2. Operational: Funding and Outside Engagement
- a. *Funding environment.* Tanzanian government support has been significantly restricted in the recent past, such that public universities across the country were unable to hire new or replace faculty lost through retirement, death or disability for a 12-year period. That condition was relaxed recently, but national government revenues remain inadequate to meet the burgeoning needs of the university. Funds for infrastructure, maintenance, replacement, and new capital facilities are desperately needed.

Additional funds for institutional changes in services and administrative reform also remain limited.

The government pays salaries and a small portion of operational costs but funds for research, development, infrastructure expansion and maintenance are almost totally absent. SUA relies upon outside funding as the primary source for these requirements. Donors have been reluctant to fund “bricks and mortar” in the form of classrooms, laboratories and offices, with some SUA laboratory equipment dating back to the 1960s. A few individual faculty members are successful at procuring such funding but even those are quite constrained by their infrastructure/equipment environment.

- b. *Consulting services.* iAGRI has encouraged and supported the expansion of consulting opportunities for faculty. They have done this by bringing consulting services inside the university structure. This approach is important because faculty often consult as individuals without linkage or attribution to SUA, hence the university gets no public credit or recognition for these services. This phenomenon does not elevate SUA’s brand, an important goal of iAGRI. SUA’s public service role in serving external stakeholders and clientele could be greatly enhanced in various areas such as soil analysis and nutritional analysis for animal feeds and food for humans. These services would have broad impact on the effectiveness of design intervention in FTF’s efforts in sustainable intensification for plants and animals, and diets for women and children.
- c. *Linking with outside partners: connecting research and commercialization.* iAGRI brings an array of perspectives on funding opportunities and ideas that fall outside the set normally considered by SUA staff. The project is based on the TIC that emphasizes engagement with stakeholders and clients external to the University outreach and entrepreneurial efforts that are new at SUA. For example, iAGRI is helping SUA to generate income from agricultural production on campus and from contracting with private firms and NGOs for SUA-produced innovations and services. This will dramatically increase the impact of SUA on the agricultural sector in a manner that is consistent with FtF goals.

The Innovation Portfolio is an experimental activity within iAGRI to provide a means for research results to be commercialized and for technical and professional services to be provided to clients. By monitoring and engaging researchers to understand the implications of their work, then identifying potential applications, the IP begins a dialogue with appropriate private sector partners to invest in further product development or to contract for expert services. While not a patent generating function, it is a means to develop private sector connections and success that build the reputation of SUA as one that serves the private sector. For example, a fermentation process for porridge which was the focus of the Masters thesis research of an iAGRI student has been turned into a commercialized product sold through iAGRI’s assistance to a Tanzanian company. This approach generates resources for the University and for individual researchers.

- d. *Response to the Deloitte fiscal evaluation.* To enhance the capacity of SUA to receive direct grants from USAID, the Agency requires a review of fiscal operations of the institutions. SUA received high marks generally but had four areas of risk mitigation

that needed support. iAGRI worked with USAID and SUA to design a risk mitigation exercise that combines training and management system changes that are being carried out by SUA personnel. The iAGRI TIC was engaged in this process to build SUA management capacity to meet the risk mitigation requirement identified by Deloitte that now allows the University to receive direct grants from USAID. Consequently, SUA recently received a direct grant for critically needed IT investments.

3. Operational: Theory of Institutional Change (TIC)
 - a. *iAGRI leadership team.* The iAGRI team has developed a learning, adaptation and implementation environment critical to making progress with institutional and human capacity development of SUA (and hopefully higher education more generally in Tanzania). A strong and positive working relationship has evolved with the SUA administration that is built on engagement, cooperative problem-solving, and trust.
 - b. *Experimentation and TIC.* The iAGRI TIC is based on the premise that the application of broad principles of institutional change can be applied to higher education institutions generally, with the specific mechanisms and tools for implementation developed through experimentation. iAGRI and SUA have jointly populated the organizational experiment portfolio with a wide array of activities designed to explore how the culture of the institution responds and then on the basis of what is learned, to make changes in the formal system of the University. This set of 21 experiments attempts to increase internal engagement and to make the university more responsive to the needs of external stakeholders and clientele. The experiments also aim to increase funding opportunities for SUA and to have perceptible impact on the economy.
 - c. *External institutional engagement.* In concert with its outreach, iAGRI is building the internal capacity of SUA to be more effectively engaged externally. For example, iAGRI is building the capacity of the library to increase access to scientific resources online and support greater connectivity between other universities for access to journals and other literature. Similarly, iAGRI is developing a statistics laboratory to provide statistical support for students and faculty for their research needs. Both of these resources increase the quality of grant proposals, services to the public through better and expanded research and engagement.
 - d. *Promoting a model for the 21st century African university.* iAGRI is engaging East African leaders in the public and private sectors in "crucial conversations" about the future of higher education in the region. The TIC developed through iAGRI's engagement with SUA pays attention to who is in the conversation, where and when it takes place, and what happens as a result. An example is a study tour by SUA officials and iAGRI staff to three Kenyan universities with a focus on income generation and innovation. This study tour has led to a mutual exchange of ideas related to income generation, digital libraries, intellectual property, quality management systems, and other topics. A second example is iAGRI's Innovation Portfolio whose engagement of the private sector has occurred through networking and convening of experts, fostering trust among scientists and industry, and laying the groundwork for "crucial conversations" that will lead to actionable and measurable outcomes that improve food security.

4. Operational: Human Capacity Development

- a. *Effective training process with impact on women faculty.* iAGRI has developed a training process that has both high volume and quality with an anticipated 139 students from SUA and MAFC supported in degree programs. Many of the trainees are SUA faculty members going for advanced degrees in the US, with coursework in the US and research in Tanzania. This approach combines quality instruction and cross-cultural experience with a focus on Tanzanian problems and solutions. Furthermore iAGRI support is available upon faculty member return for small research projects, service support and potential for commercialization. Perhaps most important for the US trainees is the experience of the learning environment at US universities. This promotes informal communication of “soft skills,” increases contact and interaction with faculty, develops independence in students, and builds confidence as students publically present and defend their ideas. As we heard from trainees, this is particularly important for women faculty and their capacity to advance once they return.

5. Operational: Monitoring and Evaluation

- a. *Monitoring and Evaluation:* iAGRI understands the importance of measurement of progress in both the human and institutional dimensions of the program. The iAGRI team has developed a series of indicators, in consultation with USAID, to track program progress. One of the challenges that higher education faces in the development field today is that it does not have sophisticated measures of the diffuse impact that higher education has on economies and societies. Part of the challenge then is to identify intermediate measures that can be used to assess impact and project performance. The institutional transformation indicators developed by iAGRI are a very useful contribution to higher education partnerships focused on institutional change. In the more general education development space, the project is well suited to making contributions to how best to capture the full impact of higher education on development.

Suggestions for iAGRI

- a. *Project extension.* iAGRI clearly represents a new approach to transforming knowledge-generating and human capacity development organizations that is consistent with a number of studies on HICD. Based on this brief familiarization visit, there is sufficient evidence to suggest a more formal review of the project and serious consideration given to extension to 10 years. Beyond review for evaluation there is much to be learned in a more extensive review about the TIC work of iAGRI that can benefit the design of future efforts by USAID and the US university partners. The work of iAGRI at SUA, focused around organizational experiments that improve the strategic management and operational efficiency of the University so that it can better engage with external partners in the public and private sectors, appears to have too great a potential for change to be confined to one institution. In a follow-on project phase, iAGRI might explore mechanisms to replicate the successful approaches of iAGRI at other universities or within the MAFC. Extension of the iAGRI approach presents a timely opportunity to scale up lessons learned at iAGRI for broader impact.
- b. *USAID Program Integration Coordinator (PIC).* USAID has a number of programs at SUA. Ten Feed the Future Innovation labs are active at the university, along with a number of other FTF projects supported by the Mission and Washington. All the programs and

the overall impact of USAID on SUA and Tanzania could be enhanced by greater coordination of these efforts. One possible approach would be to fund, through iAGRI, a coordinator to pull together the SUA faculty who partner in USAID projects to increase awareness of each other's programs. This coordination would allow for shared training, complementary research focus areas and other joint efforts such as workshops and conferences. A coordinator would stimulate interaction and coordination to increase efficiency of resource use, and map out the cumulative landscape of USAID activity at SUA to better capture the total impact of USAID investment. The coordination of the of the Innovation Labs (ILs) and other USAID programs that take place at SUA holds great potential for capturing efficiencies, creating new opportunities, and enhancing the brand of the University in a new setting.

- c. *Program to engage other Tanzanian universities.* The work at SUA appears to have too great a potential for change to be confined to one institution. Mechanisms for sharing the successful approaches of iAGRI should be explored. In particular Tanzania is developing a second new agricultural higher education institution; the creation of this institution might present an excellent and timely opportunity to apply lessons learned at iAGRI.
- d. *Assessment and continuation of projects within the portfolio.* iAGRI leadership will need to assess the extent to which current projects and progress are sufficiently embedded within the institutional processes of the University to reduce project management attention and leadership. There is much to be gained in continuing to refine and adjust efforts as projects mature, continue to be nurtured, and in some cases are winnowed from the list of priorities. Some of the projects hold much yet unrealized potential rewards for the university, some will proceed under their own momentum, while yet others may fade away. Managing the dynamics of that ongoing process must be institutionalized within the university's culture and structure.
- e. *Measures of higher education's impact.* The higher education indicators developed by iAGRI should be shared with the greater higher education community for review and discussion. This interaction would advance the field of M&E in higher education and might expand the discussion of the overall effect of higher education on development. The latter is critical to capture the full impact of higher education, and would allow policy makers to have the evidence for appropriate allocation of resources.
- f. *Women in USAID funded training programs.* After team discussions with returned women participants, we realized that some of the USAID policies are impeding future plans of young faculty women. Accordingly, we suggest that USAID and its university partners need to discuss how to make child friendly policies that promote and not constrain women's participation in higher education training in the U.S. iAGRI has developed a policy for students trained in the U.S. that accommodates PhD students who are mothers with young children by giving them an extra trip back to Tanzania. Continuing attention to the issue of facilitating the experiences of female trainees would be beneficial.
- g. *PhD not MS training.* For SUA's future, iAGRI should focus on PhD training to ensure faculty are sufficiently skilled and credentialed to obtain international support for their

funding efforts. Given the domestic funding environment for research and outreach activities and the importance of research in training graduate students and maintaining the relevance of undergraduate education, PhD level faculty are essential for institutional advancement. This point was reinforced by the recognized need for post-docs advocated by one of the most productive members of the faculty. The MAFC research arm is also more interested in PhD level training.

- h. *International Conferences at SUA.* The organization of key conferences that address critical issues related to FTF should be part of the future of iAGRI and SUA. They build SUA's reputation, increase its profile, enhance its ability to gain outside funding, and share the anticipated success of iAGRI's approach to institutional transformation.
- i. *Continue to promote revenue-generating activities.* iAGRI has helped SUA to develop a number of experiments in this area and should continue with experimentation. One example is in geospatial technologies, one of the great technological advances for agriculture, environment and any number of human patterns of land use, behavior etc. Mapping is a powerful tool to integrate data, present patterns for public consumption and policy debate, and to illustrate production across heterogeneous landscapes. The development of this capacity, in partnership with US universities, would offer a major resource to open up a wide range of additional opportunities for the university to engage the public and private sectors and become more active in the policy debates.
- j. *Develop the ICT capacity of the university.* The rapidly evolving area of online education offers a unique opportunity to increase the quality of education and possibly reduce costs. This is a dynamic area in which US universities are excelling; they have an array of approaches and well-developed technical capacities. iAGRI could engage its partners to build the capacity of SUA to produce its own courses using existing platforms for adaptation. Partnering US universities with SUA through iAGRI would be a cost- and time-effective way to speed the process. Developing such educational capacity would build overall ICT for other uses such as outreach and continuing education. Perhaps most important, ICT would be a means to deal with the demographic youth bubble that Tanzania is and will increasingly face in the future.
- k. *Expand the capacity of the statistics lab.* In an age of nearly unlimited access to data and information, the ability to critically analyze information becomes more critical. Statistics is a key tool. Additionally the effectiveness of experiments and surveys is a direct result of appropriate experimental design. The further development of the iAGRI initiative to address statistical needs and experimental design will greatly enhance the impact of investments in research and ultimately on development investment.
- l. *Alumni connection efforts.* iAGRI has taken the lead in developing the first stages of alumni relations. Given the potential of alumni support, both financial and political, alumni relations should be further developed and supported.
- m. *Grant development support services.* iAGRI might work with SUA to develop a grant support office that would have the capacity to monitor the funding environment, alert and connect faculty to opportunities relevant to their expertise, provide coaching in grant writing skills, and coordinate and link with researchers in other institutions. A

most important function feature of this office would be to train both faculty and students on the competitive grants process and how to link effectively with the international research community. With time an indirect structure might support and sustain the office. Linkage with the proposed FTF coordinator would also be useful.

Further Areas for iAGRI to consider

- a) *The decentralization process.* In the short time of the team's exposure to SUA's environment, it is clear that greater decentralization of authority for operations would be useful for increasing performance. Such a plan for decentralization of the administrative structure that gives more decision making to colleges and department exists at SUA. The implementation of this process depends upon the iterative interplay of the informal and formal organizational structures of SUA, one of the principal goals of iAGRI.
- b) *Build service oriented operations.* Support by iAGRI for additional infrastructure (i.e., bricks and mortar) and lab facilities (i.e., soil, nutritional analysis labs, microbial and DNA analysis) would allow SUA to provide services to the public to increase engagement of stakeholders, generate modest revenues and advance faculty research opportunities and output. These operations build on existing infrastructure and can provide modest new revenues that are critical and may even leverage larger, more encompassing capital investments.
- c) *Support well rounded student.* In our meeting at the MoE Prof. Sylvia Temu (Director of Higher Education) stressed the need for curriculum reform that would result in a well-rounded student. The integration of liberal arts into the curriculum of other universities, including SUA, was recognized as having potential value. While technical skills are important, problem-solving skills are critical in science and the administration of science. In a globally connected world, science has its international standards of ethics and operations that are very much a part of the development process. Curriculum enhancement could be an important legacy of iAGRI contributions to the institution, and to the values of education that will shape the future citizenry of Tanzania.
- d) *Continue to build the SUA website.* Understanding the importance of the SUA website in modern communications as the face of the University and its role in establishing within the rankings of universities, iAGRI should consider how to make the website most effective in linking the public to the university. Access to information relevant to agriculture, nutrition and environment and successful engagement should be emphasized.
- e) *Connecting with local government authorities.* In the decentralization of the Tanzanian political structure, much emphasis has been placed on the role of the districts. They are the point of much of the delivery of governmental services. iAGRI might consider developing mechanisms for greater linkage with the districts that might include educational support of MAFC extension workers, identification of research to solve local problems, networks to share district level information, and small grants competition for district staff to collaborate with SUA staff. This

dimension might be enhanced if a follow-on project phase of the iAGRI project is funded.

- f) *New multidisciplinary public policy program at SUA.* Such a program was envisioned by one faculty member to provide public policy analyses that drew on the strengths of the faculty and would improve the brand of the university. The contributions of Dr. David Nyange were given as an example. Dr. Nyange was one of the creators of the iAGRI project and is now working at the MAFC and he is now working at MAFC as a Policy Advisor under MSU.

Current



Emmanuel Mgonja

Country: Tanzania

Research:

Molecular Analysis of Host Resistance and Pathogenicity of Rice Blast in East Africa

Current



Victoria Bulegeya

Country: Tanzania

Research:

The Effect of Potyvirus Resistance to Maize Lethal Necrosis (MLN)

Current



Elias Balimponya

Country: Tanzania

Research:

Application of Genomic Selection and Association Mapping to Breeding for Resistance to Rice Blast and Bacterial Blight of Rice (*Oryza sativa* L.) in East Africa

2014 Fellow, Spring



Winfred Baptist Mbungu

Country: Tanzania

Research:

Impacts of Land Use and Climate on Hydrology and Sediment Yield of the Upper Ruvu Watershed in Tanzania

2013 Fellow, Spring



Boniface Massawe

Country: Tanzania

Research:

Digital soil mapping and GIS-based land evaluation for rice production in Tanzania

2013 Fellow, Spring



Nafeti Mheni

Country: Tanzania

Research:

Genome-wide Analysis of Heading Date and Maturity in Wheat

2013 Fellow, Fall



Kadeqhe Fue

Country: Tanzania

Research:

Development of Precision Irrigation Control System for Horticultural Food Crops in Northern Tanzania

2013 Fellow, Fall



Mawazo Shitindi

Country: Tanzania

Research:

Developing and Integrative Soil Fertility Management Package for Improving N and P Use Efficiency Under Smallholder Maize Production in the Eastern Zone of Tanzania

Cohorts I - V

University, Discipline of Study, Degree, Completion

<u>Name</u>	<u>University</u>	<u>Student Discipline</u>	<u>Degree</u>	<u>Status</u>
<u>COHORT I</u>				
Respikius Gabagambi	Ohio State	Rural Sociology	M.S.	Completed
Frida Nyamete	Michigan State	Food Science	M.S.	Completed
John Martin	Tuskegee	Agronomy	M.S.	Completed
Lilian Mpinga,	Florida	Horticulture	M.S.	Completed
Stanslaus Terengia	Florida	Agricultural Engineering	M.S.	Completed
Asma Gharib** ¹	Florida	Agribusiness	M.S.	Completed
<u>COHORT II</u>				
OSU Consortium				
Elizabeth Isaya	Ohio State	Agricultural Extension Education	M.S.	Completed
Edith Lazaro	Ohio State	Agricultural Economics	M.S.	Completed
Nafeti Mheni	Ohio State	Plant Breeding	M.S.	Completed
Alunas Mwamakimbule	Iowa State	Agricultural Extension Education	M.S.	Completed
Kabura Philip	Iowa State	Agricultural Extension Education	M.S.	Completed
Glory Mhalu	Michigan State	Food Science & Human Nutrition	M.S.	Completed
Fabian Mhafu	Tuskegee	Food Science	M.S.	Completed
Ibrahim Shabani	Tuskegee	Food Science	M.S.	Completed
Neema Shosho	Tuskegee	Human Nutrition	M.S.	Completed
Kadeghe Fue	Florida	Agricultural Engineering	M.S.	Completed
Mariam Marianda	Florida	Human Nutrition	M.S.	Completed
Bertha Nguku**	Florida	Agronomy	M.S.	Completed
Emmanuel Msemo**	Virginia Tech	Statistics	M.S.	Completed
Boniface Massawe	Ohio State	Soil Science	Ph.D.	Completed
Emmanuel Mgonja	Ohio State	Plan Breeding	Ph.D.	Research
Rita Mirondo	Ohio State	Food Science	Ph.D.	Research
Gosbert Shausi	Ohio State	Agricultural Education	Ph.D.	Research
Julius Medardus	Ohio State	Veterinary Medicine	Ph.D.	Research
Rashid Suleiman	Iowa State	Agricultural Engineering	Ph.D.	Research
Theresia Jumbe	Mich State	Food Science & Human Nutrition	Ph.D.	Research
Eva Kassara	Mich State	Agricultural Extension	Ph.D.	Research
Juma Mmongoyo	Mich State	Food Science & Human Nutrition	Ph.D.	Research
Mawazo Shitindi	Tuskegee	Soil & Plant Science	Ph.D.	Research
Newton Kilasi	Florida	Plant Pathology	Ph.D.	Research
Ramadhani Majubwa	Florida	Horticulture	Ph.D.	Research
Matthew Shimwela	Florida	Plant Pathology	Ph.D.	Research

* - Semester English Language; ** - Non thesis degree

University, Discipline of Study, Degree, Completion

<u>Name</u>	<u>University</u>	<u>Student Discipline</u>	<u>Degree</u>	<u>Status</u>
William Warsanga	Florida	Agricultural Economics	Ph.D.	Research
Kuruthumu Mwamende	Virginia Tech	Natural Resources	Ph.D.	Research
Winfred Mbungu	Virginia Tech	Agricultural Engineering	Ph.D.	Research
<u>Sokoine University</u>				
Secilia Mrosso	Sokoine	Agricultural Education & Extension	M.S.	Completed
Miriam Chanzi	Sokoine	Agricultural Economics	M.S.	Examiner
Michael Werenfrid	Sokoine	Land Use Planning & Management	M.S.	Examiner
Consesa Richard	Sokoine	Rural Development	M.S.	Completed
Christopher Msongore	Sokoine	Agribusiness	M.S.	Completed
Abdallah Musa Shingia	Sokoine	Entomology	M.S.	Examiner
Ntirankizo Misibo	Sokoine	Agricultural Economics	M.S.	Examiner
Chacha Nyangi	Sokoine	Crop Science	M.S.	Completed
Haji Ali Omar	Sokoine	Agricultural Economics	Ph.D.	Drafting
Judith Hubert	Sokoine	Crop Science	Ph.D.	Drafting
<u>RUFORUM</u>				
Zaharan Hussein	Stellenbosch	Food Science	MS.	Completed
Charles Levi	Makerere	Agricultural Extension	M.S.	Completed
Mohamed Ramadhani	Makerere	Agricultural Extension	M.S.	Drafting
Issa Kapande	Makerere	Agribusiness	M.S.	Dropped
Marco Mwendu	Makerere	Crop Science	M.S.	Defended
Althumani Mahinda	Nairobi	Soil Science	M.S.	Completed
Mwahija Almasi	Nairobi	Agronomy	M.S.	Completed
Eliafie Mwangi	Nairobi	Agricultural Engineering	M.S.	Completed
Nyamonge Kenya	LUANAR	Rural Development	M.S.	Drafting
<u>COHORT III</u>				
<u>OSU Consortium</u>				
Elias Balimponya	Ohio State	Crop Science	M.S.	Drafting
Prisca Kimaro**	Ohio State	Agribusiness	M.S.	Completed
Upendo Kimati	Iowa State	Agricultural Extension	M.S.	Drafting
Furaha Guivaha	Iowa State	Agricultural Extension	M.S.	Drafting
Johnson Mtama	Iowa State	Agronomy	M.S.	Drafting
Emmanuel Msanya	Mich State	Agricultural Economics	M.S.	Research
Papias Binagwa	Tuskegee	Plant Protections	M.S.	Completed
Innocent Ritte	Tuskegee	Plant Biotechnology	M.S.	Drafting
Aldagunda Matunda	Virginia Tech	Horticulture	M.S.	Completed
Denis Kiobia	Virginia Tech	Agricultural Engineering	M.S.	Completed

University, Discipline of Study, Degree, Completion

<u>Name</u>	<u>University</u>	<u>Student Discipline</u>	<u>Degree</u>	<u>Status</u>
<u>Sokoine University</u>				
Mkali Mlanzi	Sokoine	Agricultural Economics	M.S.	Drafting
Rajabu Kangilo	Sokoine	Agricultural Economics	M.S.	Drafting
Theresia Nsumba	Sokoine	Agricultural Economics	M.S.	Drafting
Tumiani Masue	Sokoine	Agribusiness	M.S.	Drafting
<u>RUFORUM</u>				
Happiness Nnko	Makerere	Plant Protection	M.S.	Drafting
Allan Manki	Makerere	Plant Protection	M.S.	Drafting
Marco Sanka	Makerere	Agricultural Economics	M.S.	Drafting
Erick Mvati	Makerere	Plant Protection	M.S.	Drafting
Buzo Honi	Makerere	Food Science	M.S.	Drafting
Mbwando Dimoso	Zambia	Crop Science	M.S.	Drafting
Sebastian Mosh	LUANAR	Aquaculture	M.S.	Drafting
Christobol Nicanuru	Jomo Kenyatta	Food Science	M.S.	Drafting
Simon Venance	Egerton	Agricultural Economics	M.S.	Drafting
Semeni Ngozi	Egerton	Agricultural Economics	M.S.	Drafting
<u>PUNJAB AGRICULTURAL UNIVERSITY</u>				
Hilali Saleh Hilali	PAU	Crop Breeding	M.S.	Completed
Emmanuel Lulandala	PAU	Agribusiness	M.S.	Completed
<u>COHORT IV</u>				
<u>OSU Consortium</u>				
Boniphace Nkombe	Ohio State	Soil Science	M.S.	Research
Christopher Lameck	Ohio State	Agricultural Education	M.S.	Research
Joan Msuya	Ohio State	Human Nutrition	M.S.	Research
Joyce Mwakatoga	Ohio State	Agricultural Extension Education	M.S.	Research
Kassim Msuya	Ohio State	Agricultural Economics	M.S.	Research
Paschal Mlindi	Ohio State	Agricultural Engineering	M.S.	Research
Peter Ngimbwa	Ohio State	Agricultural Engineering	M.S.	Research
Privata Chiwindo	Ohio State	Agribusiness	M.S.	Research
Victoria Bulegaya	Ohio State	Plant Breeding	M.S.	Research
Victoria Nkuba	Ohio State	Agribusiness	M.S.	Research
Saidah Bakar	Mich State	Human Nutrition	M.S.	Research
Emmanuel Domonko	Florida	Agribusiness	M.S.	Research
Gloria Kuhumba	Florida	Food Science	M.S.	Research
Roman Fortunatus	Florida	Food Science	M.S.	Research

University, Discipline of Study, Degree, Completion

<u>Name</u>	<u>University</u>	<u>Student Discipline</u>	<u>Degree</u>	<u>Status</u>
Wilfred Makombe	Florida	Agricultural Economics	M.S.	Research
Adelina Rwabilimbo	Tuskegee	Agricultural Economics	M.S.	Research
Devotha Mwazembe	Tuskegee	Agronomy	M.S.	Research
Getrude Kanyairita	Tuskegee	Plant Breeding	M.S.	Research
Godebertha Rugazia	Tuskegee	Agricultural Economics	M.S.	Research
Jamila Mweta	Tuskegee	Biotechnology	M.S.	Research
Japhet Laizer	Tuskegee	Agribusiness	M.S.	Research
Asha Shayo	Virginai Tech	Agricultural Extension Education	M.S.	Research
Richard Ngaya**	Virginia Tech	Statistics	M.S.	Research

Sokoine University

Mwanaidi Japhary	Sokoine	Crop Science	M.S.	Classes
Selina Nombo	Sokoine	Agricultural Economics	M.S.	Classes
Salum Salum	Sokoine	Agricultural Extension Education	M.S.	Classes
Tabu Katengewya	Sokoine	Human Nutrition	M.S.	Classes
Stella Andrea	Sokoine	Agricultural Extension Education	M.S.	Classes
Hanney Mbwambo	Sokoine	Agricultural Economics	M.S.	Classes
Rose Mgwala	Sokoine	Rural Development	M.S.	Classes
Zena Mchomvu	Sokoine	Agricultural Economics	M.S.	Classes
Julius Meardus	Sokoine	Veterinary Medicine	Ph.D.	Drafting
Isaac Kashoma	Sokoine	Plant Breeding	Ph.D.	Examiner

RUFORUM

Doris Sendewa	Makerere	Agribusiness	M.S.	Classes
Pendo Nghambi	Makerere	Human Nutrition	M.S.	Classes
Mary Marcel	Makerere	Human Nutrition	M.S.	Classes
Beata Katabazi	Makerere	Human Nutrition	M.S.	Classes
Scolastica Mwema	LUANAR	Agricultural Economics	M.S.	Classes
Nicholaus Nchembi	LUANAR	Agricultural Extension Education	M.S.	Classes
Angela Aluko	Jomo Kenyatta	Food Science	M.S.	Classes
Julieth Balilemwa	Kenyatta	Natural Resource Management	M.S.	Classes
Aika Okting'ati	Egerton	Agricultural Economics	M.S.	Classes
Maria Mtui	Egerton	Agricultural Economics	M.S.	Classes
Neema Mboye	Zimbabwe	Dairy Technology	M.S.	Research

PUNJAB AGRICULTURAL UNIVERSITY

Meshack Tegeye	PAU	Food Science	M.S.	Classes
Amina Makbel	PAU	Food Science	M.S.	Classes

University, Discipline of Study, Degree, Completion				
<u>Name</u>	<u>University</u>	<u>Student Discipline</u>	<u>Degree</u>	<u>Status</u>
Ashura Dulazi	PAU	Soil Science	M.S.	Classes
Nengilang'et Kivuyo	PAU	Human Nutrition	M.S.	Classes
COHORT V				
<u>OSU Consortium</u>				
Deogratias Massawe	Ohio State	Plant Breeding	Ph.D.	Classes
Elizabeth Ndaba	Mich State	Human Nutrition	M.S.	Classes
Winfrid Tamba	Ohio State	Agricultural Education	M.S.	Classes
Frida Nyamete	Ohio State	Food Science	Ph.D.	Classes
<u>Sokoine</u>				
Anna Tesha	SUA	Human Nutrition	M.S.	Classes
Fahmia Selemani	SUA	Human Nutrition	M.S.	Classes
Catherine Mlapoi	SUA	Human Nutrition	M.S.	Classes
Mbano Nuru	SUA	Agribusiness	M.S.	Classes
Elizabeth Medard	SUA	Agricultural Economics	M.S.	Classes
<u>RUFORUM</u>				
Scholastica Mwema	LUANAR	Agricultural Economics	M.S.	Classes
Mercy Mmari	Jomo Kenyatta	Food Science	M.S.	Classes
Zaharan Hussein	Stellenbosch	Food Science	Ph.D.	Classes

iAGRI ORGANIZATIONAL CHANGE INDICATOR

Organizational change is measured by iAGRI as it progresses through three steps in the change management process. These steps are (i) engaging in “conversation that matter” (CTM), (ii) searching for “ways that work” (WTW), and (iii) implementing “changes that sustain” (CTS). Check the items below as they are met, starting at the top of the table and proceeding downward.

Stage	Type	Description	Check if done
Stage 1 <i>Conversations that Matter</i>	Type 1	Did the conversation end with identifying a problem to be solved and specifying next steps in terms of what will be done, who will do it, and when it will be done?	
	Type 2	Did the conversation result in agreement to conduct a rigorous search, such as an organizational experiment or study tour, to find a solution to the problem?	
	Type 3	Has a participatory exercise been conducted to identify objectives of the rigorous search and to identify challenges to solving the problem?	
Stage 2 <i>Ways that Work</i>	Type 1	Have procedures for the experiment or rigorous search been documented and initiated?	
	Type 2	Has a solution based on the rigorous search been identified and documented.	
	Type 3	Has an analysis of the benefits, costs, and challenges of implementing the solution been conducted?	
	Type 4	Have persons involved in the experiment or rigorous search agreed to next steps, including how to introduce results into the formal system?	
Stage 3 <i>Changes that Sustain</i>	Type 1	Has the documented solution been translated into changes in policies and/or procedures in the formal system?	
	Type 2	Has the formal system adopted the solution by specifying reporting relationships, assignment of responsibilities, and budgets (if funding is required)?	
	Type 3	Have performance standards been specified for the implemented solution?	
	Type 4	Does the formal system monitor and document compliance with its performance standards for the implemented solution according to a specified frequency?	
	Type 5	Is the solution adequately resourced with staff and non-donor funds so that performance standards could be met?	

Definitions:

- “Conversations that matter” (CTM) have two important characteristics: (1) they address topics that are consistent with the strategic plan, mission, vision, or other guiding documents of the target organization, and (2) they end with a clear specification of what will be done, who will do it, and when it will be done.
- A search for “ways that work” (WTW) can take one of two forms:

- An “organizational experiment” -- a new activity or an existing activity implemented parallel to the formal system, and undertaken as an exploratory exercise to generate feedback and results useful for improving the formal system; or
- A “rigorous search” -- includes at least one of the following activities: (1) preparation of a written document or set of slides presenting information from cited sources, or (2) a study tour.