

# Annual Report

October 1, 2013 - September 30, 2014

submitted by

**Innovative Agricultural Research Initiative (iAGRI)**

October, 2014





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UNIVERSITY**

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Cover photo: **iAGRI-sponsored scholar Mahinda Athuman, a Master's student at the University of Nairobi, with a soil moisture meter and a drip irrigation line in an experimental sorghum field at the Ministry of Agriculture's Ari Makutupora Research Institute near Dodoma, Tanzania.**

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## Executive Summary

iAGRI is a USAID-funded project designed 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 development goals, particularly those found in the Tanzanian Government's Agricultural Sector Development Plan, its Agriculture and Food Security Investment Plan, and its compact developed under the Comprehensive African Agricultural Development Plan. The four principal objectives of iAGRI are to (1) provide 135 individuals with post-graduate degree training, approximately half of which is to occur in the U.S.; (2) promote collaborative research among staff from SUA, MAFC, six American 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.

### Long-Term Training

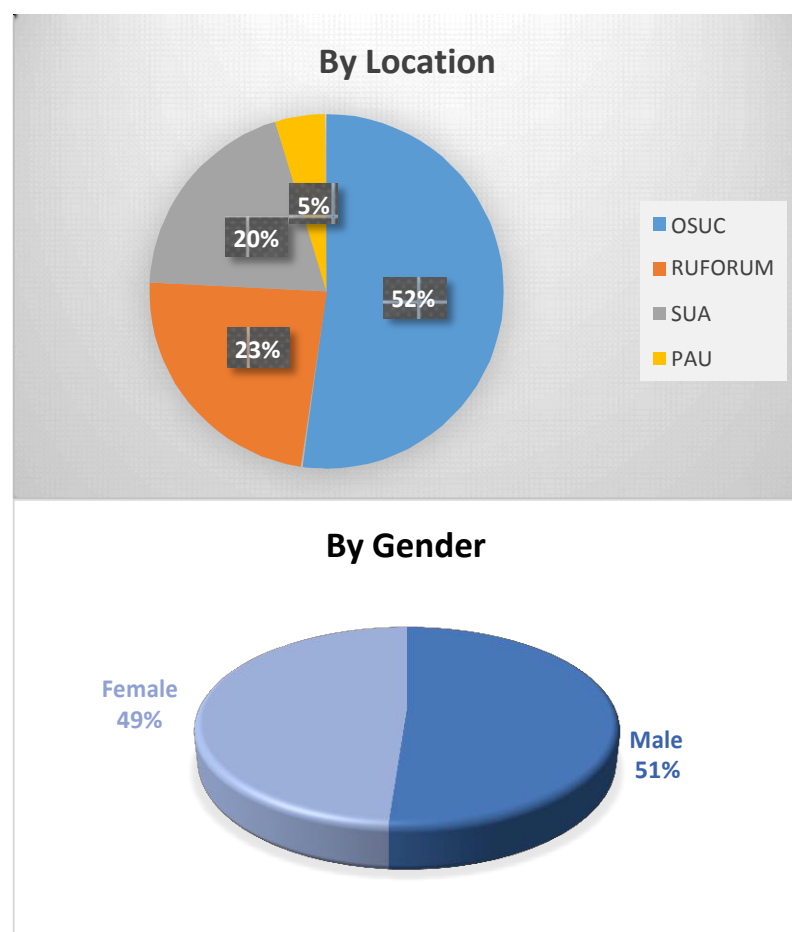
To date 128 post-graduate students have been placed in degree training programs at institutions on three continents (North America, Africa, and Asia) and have either completed or continued their studies.

#### Student Placements that Have Been Completed or Are Continuing

	<u>B.Sc.</u>	<u>M.Sc.</u>	<u>Ph.D</u>	<u>Total</u>
<b>Cohort I</b>				
OSUC		6		6
<b>Cohort II</b>				
OSUC		12	16	28
SUA	3	8	2	13
RUFORUM		9		9
<b>Cohort III</b>				
OSUC		10		10
SUA		4		4
RUFORUM		10		10
South/South		2		2
<b>Cohort IV</b>				
OSUC		23		23
SUA		9	2	11
RUFORUM		11		11
South/South		4		4
<b>SUBTOTAL</b>	<b>3</b>	<b>108</b>	<b>20</b>	<b>131</b>

Sixty-seven of these students have been placed at OSU Consortium institutions. Of these, 51 were M.Sc. placements and 16 were Ph.D. placements. Thirty students were placed by RUFORUM at its member institutions in Sub-Saharan Africa. Thirty-five students were placed at SUA, including 10 B.Sc. students from Zanzibar<sup>1</sup> and two at the Ph.D. level. Furthermore, six students have been placed at the Punjab Agricultural University in India.<sup>2</sup> In the coming year, several more students will be placed in degree programs, and they will include three students who chose to defer their studies for a year due to personal problems. One will pursue a PhD and the other two MSc degree programs at OSUC institutions. It is unlikely that an additional call for proposals will be made for this limited student Cohort V.<sup>3</sup>

**Chart I – iAGRI Graduate Degree Training Placements – Cohorts I – IV**



<sup>1</sup> Three of these 10 students placed at the B.Sc. level continue to pursue their undergraduate degrees at SUA.

<sup>2</sup> A decision was made to focus Global South placements at one institution in order to increase the probability of having these placements result in a long-term relationship between SUA and that institution. It was based on the assumption that greater numbers would lead to greater future interactions.

<sup>3</sup> Another call for applications for training would depend on USAID/Tanzania requesting that a large Cohort V be trained under the program.

Cohort I students have now completed their research and have graduated. All of them received degrees from OSUC institutions and their degrees were based on research conducted in Tanzania. All of them were jointly supervised by OSUC advisors and SUA supervisors. Many Cohort II M.Sc. students will have completed their degree programs, including defenses conducted using the internet. A number of them were unable to complete their field research in time and are scheduled to defend their theses and graduate at the end of the fall, 2014 academic term. Additionally, the ten students from Cohort III pursuing M.Sc. studies at OSUC institutions have returned to Tanzania to pursue their field research during the coming fiscal year. They joined 20 other Cohort III students being trained at OSUC and RUFORUM institutions. They are being advised by their respective American and African advisors, depending on the university where they studied, and their SUA supervisors. Several Ph.D. students studying at OSUC institutions also returned to Tanzania during the year to work on their dissertation field research. The M.Sc. students placed at Punjab Agricultural University (PAU) have remained in India and will conduct related research there.

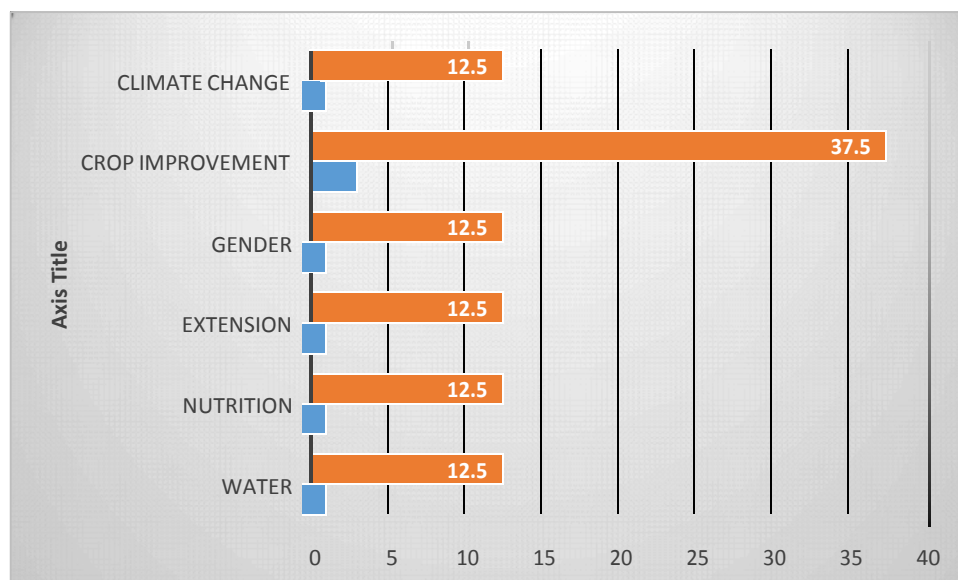
Students consulted regularly with their advisors by email and video conference while conducting field research in Tanzania. Students who study in the U.S. and in Africa outside Tanzania are expected to have an approved research proposal in hand prior to returning to Tanzania.

Students and advisors were provided access to white papers written on eight priority themes identified by iAGRI during its initial year for consultation to help define relevant student research topics. These themes are consistent with the Feed the Future (FtF) topics identified by USAID Tanzania. Students are 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**

Eight of the 9 collaborative research projects originally selected for funding as Phase I of the iAGRI research program continued during the year. They focus on Feed the Future topics identified as priorities for iAGRI. Five are led by women scientists. Five PIs are employed by SUA; one is employed by MAFC; and two are employed by OSUC institutions. A workshop was held for these PIs in early 2014. PIs presented preliminary research results as well as research plans for the coming six months. Seven of the 8 presentations were excellent and demonstrated substantial progress in the research. Recommendations were made about how to move the other project forward, including substantive inputs from OSUC partners. All of the projects have received important inputs from OSUC co-PIs who have visited the project sites in Tanzania during the year. PIs were requested to present annual reports for their projects in June. They were reviewed by PMU staff and by outside reviewers. The reports indicated that substantial progress continues to be made on them.

**Chart II – Feed the Future Foci of Collaborative Research Projects**



An agricultural policy project funded under the Agricultural Policy Seminar Series (APSS) has been completed. Seminars were held at which the researchers shared their results and appropriate policy recommendations ensuing from the research. Attention was also given to the preparation of policy briefs based on the research findings for policy makers and government program managers.

During the year, plans were also developed for a Phase II of iAGRI research projects. Unlike Phase I, high priority topics for research were pre-identified and contacts were been made with researchers in Tanzania and at OSUC institutions who are highly qualified to address them. Topics were identified through interactions with USAID-funded Feed the Future partners in Tanzania and targeted to address USAID priorities in Tanzania. Topics for important research over the coming year are major maize production constraints, drip irrigation for horticulture production, rice demand, and agricultural risk and climate change. The PMU has also discussed the possibility of funding another series of agricultural policy projects in conjunction with SERA.

### **Capacity Building**

Capacity building during the past year focused on five dimensions, (a) infrastructure; (b) staff training; (c) leadership development; (d) private sector engagement; and (e) SUA program strengthening.

**Infrastructure** – The iAGRI Project Management Unit (PMU) continued to work with the Quality Assurance Promotion Bureau (QAPB) at SUA to equip and service classrooms with audio-visual equipment. The PMU also worked with the SUA library staff to increase access to scientific journals



from around the world through a web portal, known as LibHub, a USAID-funded facility that aggregates online journal articles from multiple sources into a single searchable database, and through TEAL, a program managed by the Cornell University library that provides access to up-to-date literature to research scientists around the world.

**Short-Term Training** – Several short-courses were offered to SUA staff and post-graduate students by visiting staff from OSUC member institutions and by other African experts. Courses were offered on SPSS programming for statistical analysis; gender mainstreaming in agriculture; qualitative methods of research; program evaluation research; and development of policy briefs. Most of these courses were led by staff from OSUC institutions and staffed by the PMU in Morogoro. Ten OSUC advisors offered seminars on topics germane to the field work of their students to SUA staff and post-graduate students. These seminars were organized by the PMU.

Several staff from SUA and MAFC traveled 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 interactions over the long term.

**Leadership Development** - Bosserman and Associates continued to provide inputs to SUA leaders related to leadership development and change management. SUA's leaders have embraced the need for change to address current and future pressing issues, such as infrastructure improvements, revenue stream diversification, risk management, staff capacity and increased student demand. USAID requested iAGRI to prepare a proposal to strengthen SUA's capacity to administer and manage university programs, consistent with the findings of a Deloitte audit of its administration. The PMU has collaborated with the Eastern and Southern Africa Management Institute (ESAMI) in conducting a Training Needs Assessment (TNA) that has confirmed the findings of the Deloitte audit and outlined specific training objectives. iAGRI is currently in the process of identifying partners to prepare and deliver a series of training exercises that will address the needs identified in the TNA. These courses will be offered to SUA administrative staff over the coming year.

**Private Sector Engagement** – iAGRI has been promoting ways to engage SUA with the private sector, a major potential stakeholder and supporter of SUA activities. An innovation portfolio consisting of a series of ways in which SUA and its staff can provide research and development inputs of interest to potential private sector investors has been developed. This portfolio is based largely on research results emanating from student theses and iAGRI collaborative research projects. In addition, iAGRI has also been interacting with potential private sector investors regarding the potential to use SUA's land and facilities for production in ways that generate income for SUA and provide opportunities for SUA staff and students to conduct research and development activities funded by these investors.

**SUA Program Strengthening** – Specific academic and research programs and facilities at SUA have been identified for strengthening. They include the program in Soil, Water and Climate Change. A

major conference was held jointly by SUA, OSU/iAGRI and the Norwegian University of Life Sciences (NMBU)/NORAD on issues of climate change and agriculture. Planning has been undertaken for a follow up conference for the coming year concerning private sector contributions to climate change adaptation and mitigation. Other targeted programs also relate to building relationships between SUA and the private sector and NGO community. They include attempts to strengthen SUA linkages with the Sokoine University Graduate Entrepreneurs Cooperative (SUGECO), and the Tanzanian Horticulture Association (TAHA).

***Global South-South Linkages*** – These linkages are being strengthened largely through degree training. Through RUFORUM, iAGRI has placed an additional 21 students at RUFORUM affiliate institutions, in Zambia, Malawi, Kenya and Uganda. In addition, four more students were placed at Punjab Agricultural University in India. We anticipate that these placements will lead to long term interactions among staff and students at SUA with counterparts at these institutions.

## Introduction

This Annual Report concerns the USAID Fiscal Year 2013/2014, and covers the period from October 1, 2013 to September 30, 2014. It contains a narrative of activities conducted during this period along with a discussion of results, outputs and preliminary impacts. It is organized 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 have been addressed during the reporting period. All students from Cohort I have graduated. Four M.Sc. students from Cohort II have also graduated, while others, along with Cohort III students have continued their programs of study and research over the past year. Oversight for their activities has been provided by the iAGRI Management Entity (ME) – the International Programs in Agriculture Office located at Ohio State University - and the Project Management Unit (PMU) located in Morogoro. Additionally, Cohort IV students were recruited and placed at OSUC institutions, at RUFORUM member institutions, at SUA and at Punjab Agricultural University. iAGRI support continued for eight collaborative research projects involving partners from SUA, MAFC and OSUC institutions. Four agricultural policy projects initiated in 2012 were brought to closure. Development of another phase of food security focused research collaborations was also explored. iAGRI programming also focused on building the capacity of SUA's academic and research programs and the capacity of SUA leadership to manage change.

Funding for iAGRI has been sufficient, having gradually increased from an initial allocation of \$500,000 in March, 2011, to \$2,500,000 in August, 2011, to \$6,000,000 in June, 2012, to \$11,400,000 in March, 2013 to \$17,200,000 in August, 2014. The latter increase accompanied a formal extension of the iAGRI cooperative agreement for one year and the addition of related program performance commitments by the OSU ME. Funding has been sufficient to cover additional training, research and staff development commitments. Attention will need to be given to project costs through the end of FY 2014-2015 and the probable need to obligate additional funding for the project.

## 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. iAGRI has four major objectives, namely to:

- Provide advanced degree training in agriculture for 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 the Ohio State University Consortium (OSUC). OSUC represents six major U.S. land-grant institutions of higher education. They are Ohio State University (OSU), the lead institution; 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. In addition, other U.S. land-grant universities and Global South institutions, such as Punjab Agricultural University (India), have provided training and technical assistance inputs upon request.

## Implementation Progress

This has been a year of consolidation of programming activities associated with the four major objectives of iAGRI. Similar to the past Annual Report, this one 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.

### Long-Term Degree Training

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 Global South institutions. As of the end of this year, four cohorts have been selected and placed for training.

- Cohort I was comprised of 6 M.Sc. students placed at OSUC member institutions during the initial five months of the project. One of these students was from Zanzibar. All of these students have completed their degree programs and graduated. The five students who defended their thesis research from Morogoro did so via video-conferencing. Their research focused on priority Feed the Future themes identified by the Needs Assessment conducted during the first year of the project.

**Table I – Placements of Cohort IV Students by Partner Institutions**

University	Number	Percentage
OSUC	23	46
SUA	11	22
RUFORUM	12	24
PAU	4	8

- Cohort II consists of 53 students, 27 of whom were placed at OSUC member institutions. All M.Sc. students spent the year in Tanzania working on their field thesis research and several of them completed their thesis research and have graduated. An additional 16 students, who had completed their course work the previous year at RUFORUM member institutions and at SUA, continued to elaborate their M.Sc. theses. Several recently completed all degree program requirements and graduated. Those who have not completed their degrees will be required to do so by the end of the calendar year at which time their iAGRI funding will be terminated. Sixteen Ph.D. candidates continued their studies in the U.S. Additionally, two Ph.D. students placed at SUA continue in their respective programs of study. Many Ph.D. students spent time in Tanzania working on their field research for their dissertations. They were advised by their advisors, both in the U.S. and at SUA. Some of them anticipate graduating by the end of the following fiscal year. Three of the 10 students from Zanzibar who were placed in B.Sc. programs at SUA, continued their programs of study.
- Cohort III includes 10 M.Sc. students placed at OSUC member institutions. They completed their required course work and have since returned to Tanzania to conduct M.Sc. thesis research. Cohort III also includes 10 students placed by RUFORUM at its member institutions, and 4 M.Sc. candidates placed at SUA. They will all work on their thesis research over the coming year. This cohort also includes 2 M.Sc. students placed at Punjab Agricultural University who are completing their degree requirements in India.
- Cohort IV candidates were placed at their respective institutions of study. The Cohort includes 23 students placed at OSUC member institutions in August, 2014, eleven students placed by RUFORUM at its member institution, 9 M.Sc. and 2 Ph.D. students placed at SUA and 4 M.Sc. students placed at Punjab Agricultural University. This cohort was larger than anticipated due to the addition of 15 placements through an amendment to the iAGRI Cooperative Agreement. As was true for previous Cohorts, candidates for training at OSUC member institutions attended workshops on TOEFL and GRE testing prior to taking these tests. A call for applications was published in several national newspapers in August of the previous year and was also distributed through websites and other venues.

Special emphasis was given to identifying women candidates in order to reach the objective of training as many women as men. Including Cohort IV, over 48 percent of the students placed by iAGRI have been women. Several additional students will be placed in M.Sc. programs the following year, including several who delayed their admission in fall, 2014 for personal reasons.

**Advising of Long-Term Degree Candidates** - In order to increase the local relevance of non-Tanzanian graduate degree programs, students have also been assigned Tanzanian co-advisors. The OSUC and Tanzanian advisors and the student are expected to interact over the entire life of the degree program, beginning with the selection of an appropriate thesis/dissertation topic. Students and their advisors have been given access to literature describing priority Feed the Future themes, which were further refined in 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 in identifying research topics. This process has been effective in the preparation of theses defended by Cohort I and Cohort II M.Sc. students.

**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. They joined two students who will complete their degrees during the coming year.

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

**TOEFL/GRE Exam Workshop** - Twenty nine candidates for graduate degree training participated in a two-day workshop devoted to preparing for the Test of English as a Foreign Language (TOEFL) and Graduate Record Examination (GRE). Results of these tests are required for placements at most U.S. universities. The workshop was administered by the iAGRI PMU and ME. Franklin University provided the workshop presenters under an agreement with the ME.

#### **Visits by OSUC Co-PIs to Tanzania to Collaborate with Partners on Research Projects (2013-2014)**

<b>OSUC Scientist</b>	<b>Home Institution</b>	<b>Tanzania PI</b>	<b>Home Institution</b>
Bell, Patrick**	Ohio State University	Didas Kimaro	SUA
Boman, Brian	University of Florida	Sophia Kashenge-Killenga	MAFC
Chase, Carlene	University of Florida	Andrew Tarimo	SUA
Dawkins, Norma	Tuskegee University	Lilian Mpinga	MAFC
Doamekpor, Prosper	Tuskegee University	Joyce Kinabo	SUA
Masinde, Dorothy	Iowa State University	Rafael Wambura	SUA
Miller, Sally	Ohio State University	Delfina Mamiro*	SUA
Rakowski, Cathy	Ohio State University	Nyambilila Amuri	SUA
Sutton, Claire**	Ohio State University	Didas Kimaro	SUA

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\* Scientists are Co-PIs; OSUC listed scientists are actual PIs for these projects.

\*\* Graduate students from OSU who have worked on the project, including field work, over the past 14 months.

Student evaluations of the workshop indicated that they found them to be very useful in preparation for the tests. Of the 30 candidates who participated in the workshop, 25 were

eventually admitted to graduate degree programs at OUSC institutions and 22 initiated their studies in fall, 2014.

### **IR 1.2 Phase I iAGRI Collaborative Research Program**

iAGRI has continued to fund 8 collaborative research projects as part of its overall program. Each project involves participation of at least one researcher and from SUA, from the MAFC.

#### **Summary Data for Phase I iAGRI Collaborative Research Projects**

<b>Principal Investigator</b>	<b>Base</b>	<b>Project Title</b>	<b>OSUC Partners</b>
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-Chao, Florida
KASHENGE-KILLENGA, Sophia	MAFC	Integrated Salt Affected Soil Management Options for sustainable Rice Productivity in Tanzanian Irrigation Schemes	Boman, Florida
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	Masinde, ISU Doamekpor, Tuskegee

Scientists from OSUC partner institutions have been active participants in all of these research endeavors. Two of the projects are headed by U.S. based PIs and others have involved graduate students from OSUC member institutions. Participation has included interaction using the internet and video conferencing as well as visits to Tanzania.

Initially, the selection process followed by iAGRI had identified 9 proposals for funding. However, the project led by Dr. Malley, Ilonga Research Institute, was suspended due to its inability to identify an appropriate team leader. The original PI for this project accepted a major administrative post and was unable to continue in this position.

### **IR 1.2 Borlaug Program Research Awards**

Several 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). The iAGRI students, who received the Borlaug awards, are building linkages with IARC facilities in East Africa, including Tanzania. Several students received these awards during the previous year. Between June and August, several of them and their advisors interacted with CGIAR counterparts in East Africa. It is anticipated that these interactions will lead to thesis and dissertation research that is aligned with Feed the Future priorities and research programs supported by IARCs. It is also anticipated that they will lead to long-term collaborations between SUA and MAFC once students graduate and return to their home institutions.

### **IR 1.2 Graduate Student Summer Research Internships**

Several students who had participated in the 2013 summer research internship program funded from OSU sources, returned to Tanzania to continue their research under the aegis of the Phase I Collaborative Research program. They worked on the project being directed by Prof. Didas Kimaro. Their graduate studies advisor is the OSUC co-PI for this project. One of the students is funded through the Borlaug fellowship program for 12 months; the other student was funded by the collaborative research project. While in Tanzania, they continued to collect data on physical and chemical characteristics of soils in a rice irrigation region in northern Tanzania. These data will be used to assess changes brought on by climate changes in the region.

### **IR 1.2 Phase II Collaborative Research Programs**

Progress was made regarding the definition and initiation of a Phase II of the iAGRI Collaborative Research program during the year. This phase will address key constraints



encountered in the production of priority Feed the Future crops; problems encountered by Feed the Future partners in Tanzania in carrying out their project activities; and greater direct involvement of OSUC researchers in the definition and implementation of projects. The iAGRI Management Team identified priorities for this phase because it believes that they will facilitate greater relevance of projected research to meet the goals of the USAID/Tanzania Mission Feed the Future program.

Four areas have tentatively been identified for research investments. Actual progress in development of these projects has varied by topic. Four potential research proposals are under consideration and are directed to the following topics: (1) maize value chain constraints; (2) climate change and horticulture production/drip irrigation; (3) rice demand; and (4) risk management in agriculture.

**Maize Production Constraints** - Initially iAGRI facilitated interaction between maize researchers at Iowa State University and researchers from MAFC and SUA. This interaction centered on how to address production constraints identified through iAGRI's collaboration with NAFKA, a Feed the Future project in Tanzania. These constraints were stem borer; drought tolerance; and striga. Eventually, they were supplemented with maize lethal necrosis disease which has emerged as another major constraint in Tanzania.<sup>4</sup> Through e-mail and video conferencing between Tanzania and Iowa, a concept note was developed for this research. A visit by the Iowa State researchers to Tanzania was arranged for early September at which time a full proposal was developed by the Iowa State and Tanzanian teams. This was based on interactions at sites to be included in the actual research activity. This project will be initiated at the start of the coming Fiscal Year (FY 2014-2015).<sup>5</sup>

**Climate Change and Horticulture Production/Drip Irrigation** - Horticulture producers being serviced by TAPP, another Feed the Future project in Tanzania, and by the Tanzanian Horticulture Association (TAHA), a grower's association affiliated with SUA, rely heavily on irrigation for crop production. Much of this activity occurs in the northern part of Tanzania. The slopes of Mount Kilimanjaro are being impacted by climate changes, including temperature regimes and access to rain fall. iAGRI has engaged several researchers from the University of Florida, who work on drip irrigation to study this process. Both have been engaged in iAGRI activities through collaborative research and iAGRI-funded graduate students. Recently, an authority in drip irrigation at SUA has been tasked with preparing a concept note on this topic. It will be shared with counterparts at the University of Florida and serve as a basis for developing a research project on these problems. It is anticipated that drip irrigation will be an

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<sup>4</sup> This dialogue was informed by an important study commissioned by iAGRI, namely, Catherine Kuwite, "Maize Research in Tanzania with Focus on Drought Tolerance, Striga, and Stem Borer Control: An Analysis of Current Knowledge, Research Gaps and Recommendations for a Research Agenda."

<sup>5</sup> A copy of this proposal is found in the Annex to this report.

important component of the solution to these climactic changes. Funding of this proposed project will likely initiate over the coming year.

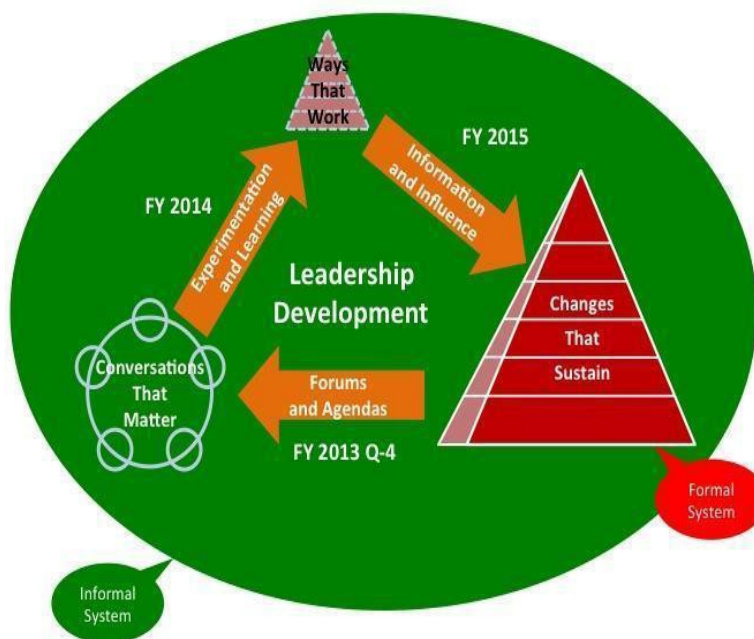
**Rice Marketing and Pricing Policy** - The competition between imported and domestically grown rice and the sensitivity of consumer demand to the price of rice, are factors that have an important impact on the development of the rice sector in Tanzania. iAGRI is working with SERA, another Feed the Future partner, on these issues. Edith Lazaro, a M.Sc. candidate in agricultural economics at Ohio State, is conducting her field research on rice demand. She has been allocated additional funding by iAGRI to undertake field work on the demand for imported versus domestic rice. This study will yield important baseline results about consumer preferences for different rice varieties. Additional research on pricing policies for domestic and imported rice will be developed based on this study. Likely participants in this research will be agricultural economists from Michigan State, Ohio State and SUA. We anticipate that a team of researchers from these institutions will prepare a concept note based on the results of the thesis research mentioned previously.

**Risk Management in Agriculture** - 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. Several agricultural economists at Ohio State have been encouraged to develop a proposal in coordination with counterparts of SUA to address this issue. Specifically, this activity will look into the possibility of establishing a crop insurance program to mitigate the risk associated with production under variable climactic conditions. The OSU researchers have experience in West Africa in conducting a similar project designed to assess the effects of crop insurance on production practices. Based on a recent visit to Tanzania, which included interactions with potential counterparts at SUA, Ministry of Agriculture policy makers, bank sector representatives and PMU staff, they have prepared a concept note which outlines how they can address the research problem. It is currently under review by PMU and ME staff. Based on development of a full blown proposal, we anticipate that the research will be initiated during the first half of the coming year.

### **IR 1.3 SUA Capacity Building**

Based on interactions with SUA leaders and with the USAID/Tanzania Mission, iAGRI has committed to initiating a change management program at SUA. The program relates to SUA's current attempt to implement a restructuring plan. During FY2013-2014 Steve Bosserman of Bosserman & Associates, Inc. continued to provide iAGRI with organization design support in order to strengthen the capacity of SUA to develop and introduce institutional change based on interactions between formal and informal systems at SUA. This model was introduced during the first quarter of the year. Primary emphasis was given to instigating "conversations that matter." During the rest of the year attention was given to increasing the flow of experimentation and learning from these conversations in order to discover additional "ways that work."

## Model for Developing and Introducing Institutional Change



Efforts were then undertaken to package information about these ways that work in order to influence the formal system to make “changes that sustain,” thereby ensuring the system’s long-term viability. Conversations about ways that work centered on “organizational experiments” being conducted by iAGRI, all of which are individually and collectively designed to strengthen SUA’s capacity to manage effectively ongoing operations and needed organizational changes induced by SUA’s political, social and economic environment. Eighteen such experiments were initially identified during PMU staff informal system discussions with SUA staff of areas needing attention. They emerged as priority experiments after subsequent discussions of them with SUA leadership. Most of them have been in the process of implementation during the past year. They are listed in the following table.<sup>6</sup>

### Capacity Development - Teaching Program Infrastructure

**Classroom Services Unit Support** - In response to a SUA administration request, iAGRI has strengthened the 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 purchased furniture and equipment for the QAPB office. It has also

<sup>6</sup> Capacity building activities reported in this section include but are not limited to those designated as organizational experiments. Those not listed as organizational experiments are *italicized*.

provided support for technical staff members who are responsible for undertaking the day-to-day activities of the unit.

#### **Organizational Experiments Conceived and/or Continued during FY 2013/2014**

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Classroom Computer Projector Installation  
Classroom Services Unit Support  
Commercial Horticulture Project  
Convocation (University Alumni Association)  
English Language Program  
Induction Training for New Deans, Directors, and Heads  
Innovation Portfolio  
International Conference on Climate Change  
Investment and Asset Utilization  
Leadership Webinar Series for iAGRI Students  
Mentoring Program  
Quality Management Training Program  
Sokoine National Agricultural Library (LibHub)  
Sokoine University Graduate Entrepreneur's Cooperative (SUGECO)  
Statistical Collaboration Laboratory  
Teaching Assistant Pilot Program  
University Teaching and Learning Improvement Program  
University Website Renovation

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**SUA Website Renovation** - Most SUA website users have indicated that it needs to be updated. Specific attention needs to be given to enhancing overall online presence and building the capacity of the SUA Computer Centre to manage web presence for the University. This implies rebuilding its existing content into a format that is easily navigated, easily updated, contains downloadable documents, and is positioned for further growth and development. Over the past year, iAGRI sponsored a consultant to review the status of the website and to recommend changes to it. Together with SUA and PMU staff she assessed student use of the website, its usability, and suggested improvements to it. Based on report recommendations, a consultant will be contracted to work with SUA's computer center staff to revamp the system over the coming year. Negotiations will continue with SUA regarding the need to identify an individual whose sole responsibility will be website maintenance.

**Classroom Computer Projector Installation** - During the previous quarter, the PMU worked with QAPB leadership in undertaking an assessment of equipment currently being used in classrooms. A result of this activity was the purchase of classroom projectors and projection

screens and their installation on SUA's campuses. Currently, this equipment is being maintained by the technicians at QAPB, and additional equipment installations are expected during the coming year. iAGRI is supporting a person who is supervising all classroom services unit activities. For long term sustainability of this activity, iAGRI has requested the QAPB to recruit the CSU personnel under SUA's policy, in order for the Unit to continue working efficiently once the iAGRI project comes to an end.

### **Capacity Building – Leadership/Change Management**

**Investment and Asset Utilization** - SUA suffers from lack of sufficient resources to effectively manage its portfolio of activity. In an effort to diversify and increase its revenue streams, iAGRI has been working with the SUA leadership on ways to better utilize its resources, including its extensive farm. Several opportunities have recently arisen to rent out portions of its farm and related facilities to private sector investors. They are disposed to pay for their use, improve the assets, and return some of the profits to support related research at SUA and training of its students. However, SUA currently lacks the capacity to evaluate and move on such proposals. SUA's Investment Policy of 2004 called for the creation of an Investment and Resource Mobilization Unit to set the parameters for investment, evaluate proposals, and negotiate with potential investors. Over the past year, iAGRI has begun to assist SUA to create and mobilize such a unit. This effort will continue into the coming year.

**Innovation Portfolio** - iAGRI has developed a portfolio of 15 proposed research projects aimed at attracting external sponsored research funding. The projects in the portfolio complement research that is currently being carried out by iAGRI-funded students and iAGRI-funded collaborative researchers. Projects are selected on the basis of their potential to attract interest and support of sponsors from the private, public and voluntary sectors. The goal of the portfolio is to commercialize the research of iAGRI students and collaborative researchers and to attract new sources of funds for research at SUA. iAGRI has marketed the innovation portfolio to private firms and NGOs in Tanzania and abroad and has received several expressions of interest. A PMU staff person was hired during the latter part of the year to lead this activity.

**Commercial Horticulture Project** - iAGRI stimulated development of an MOU involving TAHA, TAPP, SUA and iAGRI. Based on its content, iAGRI will support the creation of a commercial horticulture facility on the SUA campus. TAPP and TAHA will provide support for producer production activities training, while iAGRI will provide support the hire of individuals to oversee the operation. This support will be limited to one year on the expectation that this facility will generate sufficient income to support these positions in subsequent years.

**Leadership Webinar Series for iAGRI Students** - PMU staff worked with faculty of the OSU Department of Agricultural Communication, Education and Leadership to undertake a leadership webinar offered to iAGRI trainees in late 2013 and early 2014. This webinar series was held for students of Cohorts I and II of the iAGRI Training Program. Participants were very

pleased with the program and several were actively engaged in the conduct of a similar program for high school students in the Morogoro region. iAGRI will offer the revised leadership webinar series over the coming year for students in Cohorts III and IV. The content will also be packaged so that other iAGRI groups may participate in instructor-led leadership training. Preliminary plans were also made for a webinar series focused on organizational leadership (versus individual leadership) in spring 2015.

**Quality Management Training Program (QMTP)** - iAGRI received approval from USAID to move forward with a QMTP. The first step has been completed, namely, a training needs assessment. iAGRI engaged the Eastern and Southern Management Institute (ESAMI) in Arusha to design and implement the assessment. It is now under review and will be used to design and implement subsequent training modules related to project management, asset management, auditing, and procurement in response to a January 2012 Stage II risk assessment report commissioned by USAID Tanzania. Subsequent learning modules will specify behaviors for administration that promote excellence in performance per ISO 9001 standards and establish principles of social responsibility as outlined by ISO 26000.

**Induction Training for New Deans, Directors, and Heads of Department** - Half of the mid-level leadership at SUA changed during the past year. This presents an opportunity to work with this leadership to explore how to better manage respective programs and to innovate in ways that allow for program improvement over time. The PMU has been discussing this training opportunity with SUA staff as well as with the iAGRI change consultant and has programmed training to be provided to these mid-level leaders. Continuation of this training in the form of scheduled meetings to explore specific leadership topics has also been discussed during the last months of the past fiscal year.

### **IR 3 – Increased Investment in Agriculture and Nutrition Activities**

#### **IR 3.1 SUA Capacity Building – Individual Program Strengthening**

**Mentoring Program** - iAGRI has supported development of an active, staff-based mentoring program at SUA. This program is designed to give special attention to mentoring of female staff and students as well as junior lecturers. The project sponsored a three-day mentoring workshop in August which was attended by 10 female students and 13 male students. It was also attended by 14 potential mentors of which four were female and 10 were male. Over the course of the coming months, iAGRI intends to provide additional special training to the mentors who missed this workshop. As part of the organization for the formal launch of the mentoring program, iAGRI will (a) provide mentors and mentees with information about available resources and opportunities for mentoring; (b) present plans for the coming year to the SUA community; (c) share mentoring goals with potential mentees; (d) initiate discussion about how to network mentors and mentees; and (e) identify and share specific roles for the mentoring program coordination unit.

**Sokoine University Graduate Entrepreneurs Cooperative (SUGECO)** - SUGECO is a cooperative organization originated by members of the Department of Agricultural Economics and Agribusiness at SUA. It is designed to provide entrepreneurship training to SUA students and graduates and to stimulate agribusiness activity among its members. SUGECO currently has around 200 members and has developed an impressive program that, among other activities, helps young entrepreneurs obtain loans from CRDB Bank for business development. iAGRI has assisted the cooperative leaders to develop a strategic framework and is currently finalizing a sub-agreement with SUGECO that will fund professional staff for one year to support programmatic and fundraising activities. SUGECO has a huge potential to stimulate agribusiness development in the Morogoro region and beyond. The program is led by Dr. Anna Temu, SUA Senior Lecturer of Agribusiness.

**Sokoine National Agricultural Library (SNAL)** - Access to appropriate scientific literature was identified by many SUA researchers as a major problem related to their ability to publish results in reputable scientific journals. Over the past year, the library completed its training and promotion program to enhance the use of LibHub, an online platform that allows users to search and download up-to-date research publications. This platform was introduced to the library by PMU staff who became aware of it through USAID contact. In total, 389 students and 93 staff were introduced to the platform and downloads increased 10 times over the previous year. Library staff members continue to work with partners at SUA's computer centre and with the makers of LibHub to increase their technical capabilities for managing the system and incorporating new resources. They are also preparing a phase II proposal to iAGRI for training and resources that would continue to enhance access to and use of electronic resources.

**Gender Policy Implementation Committee (GPIC)** - The GPIC was originally formed in 2003 following the formulation of a SUA Gender Policy, consistent with the 2002 SUA strategic plan. The GPIC is mandated to ensure implementation of the policy. The GPIC reports to the SUA Senate through a Coordinating Committee. Its major functions are (1) to monitor all activities that relate to gender within SUA; (2) to work with relevant organizations within SUA to ensure gender disaggregated data are collected, stored, and reported in various documents of the university; (3) to take the lead in coordination of gender-related programs; (4) to take an active role in developing proposals to develop gender-sensitive infrastructure facilities within SUA; and (5) to review gender policy from time to time as necessary. iAGRI has continued to interact with this committee over the year, principally through Carolyn Nombo, the PMU Gender Specialist. OSUC inputs have been provided through the services of an OSUC gender faculty member.

**English Language Program** - During iAGRI's recruitment of degree training candidates from SUA and MAFC, it became apparent that many Tanzanians graduating with Bachelor degrees from Tanzanian universities possess English language skills that are too limited for serious scientific study at the graduate level. Although English is the medium of instruction at secondary schools and universities in Tanzania, most students entering SUA do not possess sufficient English language and communication skills to excel in university-level studies. This situation has

undermined SUA's efforts to provide its graduates with a quality education. iAGRI is working with SUA's Department of Social Sciences, which is mandated to provide English language instruction to students, to improve the curriculum and resources available to students. Virginia Tech has been providing OSUC support through Dr. Elsie Paredes who assessed the current situation at SUA and has provided ongoing advice to the SUA staff responsible for designing the improvement plan.

As part of its institutional capacity-building at SUA, iAGRI funded a study tour for a SUA team to visit two other countries in Sub-Saharan Africa to identify best practices in second-language instruction and to build networks with language programs in other African universities. The team visited English language programs at several universities in South Africa and Ghana. Team members observed how these universities incorporate English language training into their undergraduate degree programs. A report on cutting-edge practices on English language teaching programs, including information about Communicative Language Teaching (CLT) methodologies and related infrastructure/English language teaching facilities was completed during the fourth quarter. Recommendations will be used by the team to prepare a proposal about how to improve the English Language and Communication Skills program at SUA.

**Statistical Collaboration Laboratory** - Conversations with SUA researchers and their graduate students have highlighted the need for SUA to provide effective statistical inputs to the research programs conducted by them. In response to this, iAGRI continues to support development of a statistical support laboratory for researchers at SUA. Technical support and training from the OSUC is being provided by Virginia Tech. iAGRI-funded student, Emmanuel Msemo, has completed his Master's training at Virginia Tech and returned to SUA. Benedict Kazuzuru, SUA staff person, initiated a six month residential program in May with the Virginia Tech statistics laboratory. He will play an important leadership role at SUA in developing its own Center. Another iAGRI-funded student initiated his studies at Virginia Tech in fall, 2014.

**Convocation (University Alumni Association)** - Alumni are a major source of support for universities in the U.S., contributing substantial financial resources and influencing decisions of other support organizations. Discussions at SUA revealed that many faculty and administrators were aware of this and desirous of developing a similar dynamic association. Over the year, AGRI facilitated the development of a plan to address objectives elaborated by the Executive Committee of the Convocation. The Executive Committee is constructing a database containing names and contact information of alumni. The next annual Convocation event is scheduled for November, 2014 and will mark the 30-year anniversary of the first degrees conferred by SUA after it became independent from the University of Dar es Salaam. The Executive Committee wishes to have as many alumni as possible attend this event and collectively celebrate the occasion.<sup>7</sup> The ECC invited Andy Gurd, Chief Operating Officer of the Ohio State University Alumni Association, to visit the SUA campus during the past year. He interviewed current and

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<sup>7</sup> From the beginning of degree-granting on the Morogoro campus in 1972 until 1983, students undertaking studies in agriculture received degrees from the University of Dar es Salaam.



future alumni (students) and met with the Executive Committee to develop and initiate a strategic planning process for building and sustaining mutually-beneficial relationships between SUA and its alumni. A strategic plan has been completed and will form the basis for related activities to be undertaken over the coming fiscal year. PMU staff assisted with its preparation.

**International Climate Change Conferences** - Many SUA researchers are addressing climate change and its impact on agricultural production and the livelihoods of rural residents. Some of this research is being funded by NORAD through programs at SUA. iAGRI supported the realization of a major conference at SUA on climate change, namely, “Climate Change, Sustainable Intensification and Food Security in Sub-Saharan Africa.” It represented an opportunity for SUA researchers and graduate students to present the results of their research on climate change at an international gathering and attracted scientists from numerous other Sub-Saharan nations as well as international agricultural research centers, Norway and the United States. U.S. representation was from OSU Consortium partner institutions. The conference was co-sponsored by SUA and provided an opportunity for the university to highlight its contributions to this significant issue. Financial support for the conference was provided by USAID and NORAD. The conference represented the first time that these development assistance agencies have collaborated in promoting development activities in Tanzania. Presentations made at the conference are posted on the iAGRI website (<http://www.iagri.org/events/climatechange2013>). Many of these papers will soon appear in a publication by Springer.<sup>8</sup> During the year, a Steering Committee was formed to plan for a follow up conference in June, 2015 to deal with climate smart agriculture with a special emphasis on sustainability and resilience to effects of climate change.

**Extension Linkages** - Linkages between SUA and the MAFC extension system have decreased over the years. In the past, SUA provided important technical inputs to extension field workers and to national extension policy makers. These linkages also served to keep SUA staff abreast of major agricultural production and community issues faced by extension workers. In response to this situation, iAGRI arranged for an executive visit by key extension personnel to the U.S.: Anne N. Assenga, Director of Training Institutes, MAFC, Joyce K. Mvuna, Assistant Director Agricultural Extension, MAFC, and Catherine P. Msuya, Department Head of Agricultural Education and Extension (DAEE), Sokoine University of Agriculture, visited the OSU campus in January. The purpose of their visit was to strengthen linkages between MAFC and SUA in order to enhance the quality of extension service delivery in Tanzania. The visitors prepared a report that included a series of recommendations for future action. Among them are (a) curriculum review at the Ministry Agricultural Training Institutes (MATI) and at DAEE; (b) revitalization of the Tanzanian Society of Agricultural Education and Extension in order to strengthen ties between DAEE and various elements of MAFC extension; (c) needs assessment for training of extension workers in the field with service training to be provided by DAEE; (d) creation of advisory committees for extension offices consisting of various stakeholders; (e) strengthening linkages between training, research and extension within MAFC; and (f) review of

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<sup>8</sup> Rattan Lal, Bal Ram Singh, Dismas L. Mwaseba, David Kraybill, David O. Hansen, Lars Olav Eik (eds.), Sustainable Intensification to Advance Food Security and Enhance Resilience in Africa. Amsterdam: Springer, 2014.

application of a Communication for Development program in Tanzania. This report will be used to program additional related activities over the coming year.

**University Teaching and Learning Improvement Program** - Student-centered learning is an important focus for academic programs. At the request of the Deputy Vice-Chancellor-Academic, iAGRI agreed to sponsor workshops on improved pedagogical methods for faculty members at SUA. Plans were developed for this program and a series of on-going workshops were conducted on teaching methods.

**Teaching Assistant Pilot Program** - As class sizes have increased at SUA due to increasing enrollments, lecturers find themselves increasingly involved with student interactions and grading of papers. Graduate teaching assistants relieve this load at U.S. universities. Following up on a SUA plan to engage graduate students in the undergraduate teaching program, iAGRI staff worked with the Office of the Deputy Vice Chancellor-Academic to design a pilot program to train and use teaching assistants to teach classes, advise students, and grade examinations. Academic departments in the Faculty of Agriculture were contacted and asked to allocate office space for the teaching assistants. They also identified a pool of appropriate graduate students to participate in the program. Several departments utilized students as teaching assistants over the past year. Their experiences are being evaluated and will be used to perfect and enlarge the program over the coming year.

### **IR 3.1 SUA Capacity Building – Short-Term Training**

**Short Courses Offered** - Faculty members from OSUC member institutions and professionals from other Tanzanian institutions offered several short-courses to SUA staff and graduate students. They were widely advertised and well attended. Attendees were requested to provide feedback on the content and operation of the courses.

**Qualitative Research Methods** - Dr. Gary Straquadine, OSU Department of Agricultural Communication, Education, and Leadership, provided a one-week short course on qualitative research methods in late June. Prior to his arrival in Tanzania he met virtually with SUA instructors who teach qualitative methods to identify specific training needs. The training continued upon his return to the U.S.; he has conducted two virtual follow-up sessions with course participants to emphasize and extend the skills presented. He has also committed to advising academic staff members who teach qualitative research methods on how to further develop their own course materials.

**SPSS Utilization** - Margaret Beaver, MSU, provided a week-long course in May on use of the Statistical Package for the Social Sciences (SPSS) for research faculty and graduate students at SUA. She prepared a tutorial package for the short course prior to her arrival in Tanzania. The course was heavily subscribed and participant evaluations indicated a high level of satisfaction.

The consultant will continue to provide follow up consulting as needed to SUA staff who will teach the course in the future.

**Program Monitoring and Evaluation** - Dr. Graham Cochran, OSU Department of Agricultural Communication, Education, and Leadership, provided a one-week course on evaluation research methods in June. He introduced participants to the basics of evaluation research and then assigned them 1) to design an evaluation plan for a project they plan to propose or 2) to produce a course enhancement plan for an academic course they teach. This activity supported self-directed learning during the week of the short course and later through collaboration with peers and follow-up webinars with Ohio State University faculty. Dr. Cochran has already advised course participants on evaluation research projects they are conducting during two online follow-up sessions. These sessions took place in July and August, 2014.

**Gender and Agriculture** - Cathy Rakowski, gender specialist at OSU, conducted a short course on alternative gender analysis frameworks for graduate students and interested academic staff in July. It was attended by 46 individuals, half of whom were men. Rakowski continues to follow up with course participants on the application of these frameworks to their specific research activities.

**Policy Brief Preparation** - David Nyangi, MSU, and Anne Nyamu, Regional Strategic Analysis and Knowledge Support System (ReSAKSS), delivered a three-day short course to SUA researchers on how to communicate research findings to policy makers. 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.

**Seminars Presented at SUA by OSUC Staff** - Most OSUC visitors to SUA under the iAGRI program presented seminars to interested faculty and graduate students in their areas of competency. Seminars were arranged by the iAGRI Training Committee. They were well attended and beneficial to the respective audiences as evidenced by evaluation follow ups.

### **Short Term Training of SUA Staff in the U.S.**

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

**Flavianus Magayane** - Dr. Magayane met with members of the Department of Agricultural Communication, Education and Leadership at OSU to follow-up on the visit of three Tanzanian extension administrators to OSU during the previous quarter. Options for collaboration with SUA's Department of Agricultural Education and Extension were discussed. He also advised several OSU faculty members on short courses that they were scheduled to provide at SUA in late June and early July. Dr. Magayane also updated his knowledge on research methodology, including data measurement options.

## Seminar Presentations by OSUC Faculty at SUA

OSUC Presenter	University	Title
Robert Agunga	Ohio State	Communication for Development from a Systems Perspective
Adelia Bovell-Benjamin	Tuskegee	Mineral Content, Rheological and Thermal Properties of an Isomerized Sweet Potato Starch Syrup
Norma Dawkins,	Tuskegee	Cheomopreventive Implications of Portluca Oleracea
Mywish Maredia	Michigan State	Can Animated Educational Materials Induce Learning and Adoption among Low-Literate Farmers?
Kumar Mallikarajunan	Virginia Tech	Mycotoxin Management in Peanuts
Robert Martin	Iowa State	The New Extension – A Model for Applying Educational Process Competencies
Mario Miranda	Ohio State	Using Weather Index Insurance to Promote the Efficiency of Agricultural Credit Markets in Developing Countries
Abdoul Sam	Ohio State	The Role of Gender on Fertilizer Adoption in Uganda
John Schueller,	Florida,	Spatially-Variable Control of Crop Production
Karla Shelnutt,	Florida	The Role of Folates in Health Pregnancy
Amy Simonne,	Florida,	Integrated Food Safety and Quality Research Program: What does it take to make a difference?
Brian Slater	Ohio State	Enhanced Legacy Soil Maps Using Digital Soil Mapping Technology
Cathy Rakowski	Ohio State	Evaluating Analytical Gender Frameworks in Research, Planning and Development Programs
Prof. Clay Sneller	Ohio State	Genomic Selection in Plant Breeding
Thomas Lubberstedt	Iowa State	Isolation and functional characterisation of Scmv1 and Scmv2: Two major genes controlling potyvirus resistance in maize

**Bernard Chove** - Prof. Chove met with members of OSU's Department of Food Science and Technology, including Department Chair Dr. Sheryl Barringer. They discussed progress being made by iAGRI student Rita Mirondo in her Ph.D. program and possible future interactions between the departments. Prof. Chove also met with members of the Ohio Food Industries Center and reviewed the Ohio Food Industries Program, paying special attention to its interactions with the food processing sector in Ohio. This review focused on short-courses being offered to companies in this sector and interactions related to product development, with a special focus on the OSU pilot plant. SUA is in the process of setting up its own pilot plant.

**Benedicto Kazuzuru** - Dr. Kazuzuru initiated a six month visitation period at Virginia Tech University during the quarter. He is being hosted by Dr. Eric Vance and his Laboratory for Interdisciplinary Statistical Analysis (LISA). Dr. Kazuzuru's visit is part of efforts to establish a similar laboratory at SUA, designed to provide statistical analysis assistance to researchers from all agriculturally related disciplines. Upon his return to SUA, Dr. Kazuzuru will be expected to create the laboratory and train others to do the same. This laboratory will be the first of its kind in Tanzania. It will facilitate research design and data analysis, thereby increasing the quality of research outputs in the agricultural sciences. Preliminary support has been pledged by the leadership of SUA for the creation of this laboratory.

**Susan Nchimbi-Msola** - Prof. Susan Nchimbi-Msola is Deputy Director for Research at SUA. While on the OSU campus, she interacted with leaders and staff administering the agricultural research program. She also visited the Ohio Agricultural Research and Development Center, meeting its director and staff who administer its programs, such as the Ohio Seed Grants program and USDA-funded Hatch grants. She also learned about the Center's interaction with federal funding sources, principally through USDA/NIFA, the state of Ohio, and the private sector. While on the main campus, Nchimbi-Msola met with administrators of the Office of Sponsored Programs about how they administer externally funded research grants, and with the OSU Office of Research, which is responsible for campus wide research. In addition to providing Prof. Nchimbi-Msola with an overview of how research priorities are defined and externally-funded grants are obtained and administered, the visit also introduced her to how the iAGRI project is administered at OSU and field reporting requirements associated with it.

## **IR 8 – Enabling Policy Environment for Agriculture and Nutrition**

### **IR 8.1 Agricultural Policy Seminar Series**

Support for agricultural policy research, initiated during the previous Fiscal Year, continued through FY 2013-2014. Funded research projects were led by researchers at SUA and MAFC.

1. Abubakar Malinza and Emmanuel Chingonikaya, “Institutional Analysis of Agricultural Input Service Delivery in Tanzania: The Case of the National Agricultural Input Voucher System.”
2. John Msuya, Peter Mamiro and, Joyce Kinabo, “Is the 1000 Days Focus Policy Option for Improving Child Nutrition Sufficient for Preventing Low Birth Weights among Poor Communities?”
3. Justin Urassa, Anna Sikira, Benedicto Kazuzuru and Ntengua Mdoe, “Smallholder Commercialization of Maize Production and Food Security Following Liberalization of the Crops Market: A Case Study of Rukwa Region.”
4. Adam M. Akyoo and Zena Mpenda, “Policy Imperatives of Market Failure in the Cashew Nut Industry Value Chain.”

As part of a seminar series, they were invited to present their preliminary results to SUA personnel and PMU staff. A concluding workshop was also held at which final results, conclusions, and recommendations were presented to representatives from SUA, MAFC, REPOA, ESRF, and other organizations. The PMU continued to follow up with these teams, encouraging them to develop their findings into policy briefs to be used by appropriate government personnel. Discussions were also held with SERA about the commissioning of a second series of policy research projects.

## **IR 8.2 Policy Briefs Short Course**

David Nyangi, MSU, and Anne Nyamu, Regional Strategic Analysis and Knowledge Support System (ReSAKSS), delivered a three-day short course on how to communicate research findings to policy makers to researchers from SUA. 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) continues to update data for the M&E Plan. Its staff worked closely with The Mitchell Group (TMG) to review the data being collected to ensure that they meet the reporting needs for the project

and for the overall Feed the Future USAID Mission portfolio. Staff will continue to work closely with competent USAID/Tanzania personnel in the future. Data on intermediate results achieved during the past year are found in the Annex to this report.

- ii. **Collaboration with FtF Partners in Tanzania** –iAGRI continues to work with SERA on agricultural policy issues in support of the Agricultural Policy Seminar Series described previously. SERA has expressed an interest in taking the lead in funding additional policy research during the coming year. Additionally, iAGRI will be on board regarding the technical implementation of the project. A second collaboration involves placement of several iAGRI degree trainees with partner institutions. This occurred after joint identification of research topics germane to these partners and iAGRI in FY 2013. Several iAGRI students began conducting their thesis or 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 occurred as iAGRI worked with TAHA to bring a horticultural extension specialist to Tanzania in the next fiscal year to work with TAHA and SUA to identify ways to strengthen public-private linkages between the university and the horticulture industry. It was strengthened by the development of an MOU involving these institutions.
- 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.<sup>9</sup>
- iv. **FtF Partners Meeting in Tanzania** - The PMU, in particular the 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, including the identification of opportunities for future collaboration. The focus of iAGRI on degree training and agricultural research complements the focus of most of these other programs, thereby giving iAGRI opportunities to provide unique inputs to other projects.
- v. **Success Stories Highlights** – In an effort to disseminate the results of iAGRI, a special website feature was introduced during the year, namely, success stories highlights

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<sup>9</sup> See Annex for copies of these updates.

featuring training and research impacts in Tanzania (<http://stories.iagri.org/>.) This section features the work of students trained under iAGRI.

- vi. **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 conferences to discuss project planning and implementation. These meetings have improved project management efficiency.

## **Activities Implemented in Zanzibar**

iAGRI project activities related to strengthening agricultural human and institutional capacity in Zanzibar have focused on training of existing and future staff for the Ministry of Agriculture and the private sector.

### **PhD Degree Training**

iAGRI placed a Ph.D. candidate from Zanzibar at SUA as part of Cohort II. He continued his studies at SUA during the past year. Omari Haji Ali worked on a draft proposal for his dissertation which is currently being assessed by appropriate committees at SUA. Once approved, he will be formally admitted to the Ph.D. program.

### **M.Sc. Degree Training**

At the request of USAID/Tanzania, iAGRI selected a student from Zanzibar for training as part of Cohort I. Asma Gharib graduated from the University of Florida in December, 2013.

### **Undergraduate Degree Training**

iAGRI converted two graduate degree training slots into 10 undergraduate degree slots at SUA for students from Zanzibar. Most of them have struggled with their studies due to their weak pre-university training. Three of them continued their studies during the past year. The PMU continues to monitor their progress and to support their programs. Graduates of this cohort may be considered for eventual additional graduate degree training upon completion of their SUA programs.



## iAGRI Highlights

### Cohort IV iAGRI Students Placed in Graduate Degree Training Programs

On Thursday, July 17 the United States Embassy hosted a farewell program for 46 iAGRI Cohort IV students. They initiated their studies at universities in Tanzania and abroad. In all, twenty-two students were placed at OSUC member institutions, 11 were placed by RUFORUM at its member institutions under a sub-agreement with it; 4 were placed at the Punjab Agricultural University; and 9 were placed at Sokoine University of Agriculture. . Representatives from Sokoine University of Agriculture and the Ministry of Agriculture attended the event held at the U.S. Embassy in Tanzania.



United States Ambassador Mark Childress (3rd from right front row standing in black suit) in a group photo with 47 students who will pursue Master's and PhD degrees in agricultural sciences.



Glory Mhalu (left) and Kadege Fugere, who studied in the United States for their Master's degrees in agricultural related sciences share their experiences with the current cohort of training. In his remarks to the students and Tanzanian officials, U.S. Ambassador Mark Childress stressed the importance of agriculture in Tanzania and the impact that these students will make in the sector.

### **Climate Change Conference Series**

iAGRI partnered with SUA and with two Norwegian projects at SUA to hold a major climate change conference in November. The Conference title was "Climate Change, Sustainable Intensification and Food Security in Sub-Saharan Africa." It represented an opportunity for SUA researchers and graduate students to present the results of their research on climate change at an international gathering and attracted scientists from numerous other Sub-Saharan nations as well as international agricultural research centers, Norway and the United States. Several U.S. scientists from OSU Consortium partner institutions participated in the conference. Financial support was provided by USAID and NORAD. The conference represented the first time that these development assistance agencies have collaborated in promoting development activities in Tanzania. Several important presentations made at the conference were posted on the iAGRI website (<http://www.iagri.org/events/climatechange2013>). The majority of these papers will soon appear in a publication by Springer. During the year, a Steering Committee was formed to plan for a follow up conference in June, 2015 to deal with climate smart agriculture with a special emphasis on sustainability and resilience to effects of climate change.



*Participants at the Climate Change Conference held in November, 2013 at SUA.*

### **Creation of Innovation Portfolio**

iAGRI has created a website which features innovative ideas from SUA researchers and iAGRI partners in the United States (<http://innovation.iagri.org/proposals>). The Innovation Portfolio team also helps companies and organizations create custom proposals to address issues they have identified to support their goals. This is an important platform that aims to increase the responsiveness of SUA to private and public sector needs through research conducted by its faculty, graduate students and partners. It has the potential to generate significant additional sources of income for the university. Fifteen preliminary statements of work have been posted on this website. Some of them build on research being undertaken by SUA and MAFC research staff and graduate students within the iAGRI program, while other projects are developed in response to stated interests and concerns of external funders. The portfolio is designed to commercialize the research of iAGRI students and collaborative researchers and is now being marketed to private firms and NGOs in Tanzania and abroad. The portfolio has been vetted with SAGCOT in an effort to strengthen SUA's participation in the SAGCOT initiative. iAGRI has hired a full-time staff person to build the portfolio and market it to appropriate audiences.

### **Leadership Webinar for iAGRI Fellows**

An iAGRI Leadership Fellows Seminar Series was offered to students from Cohort I and II who are located in the U.S. and in Africa. The course was developed by the Department of

Agricultural Communication, Education and Leadership at Ohio State University. Twenty-four students enrolled and 19 of them received a certificate at the end of the webinar series, having all of its requirements.



It focused on the *Seven Habits of Highly Effective People*, by author Stephen Covey. The webinar was delivered online by four OSU faculty members. The course represented an opportunity for members of these Cohorts to develop stronger interpersonal ties that will persist into their future careers. Several participants subsequently offered a similar program in leadership training for high school students in the Morogoro region. Plans are underway for the course to be offered again next year to students of more recent Cohorts. Additional webinar courses related to leadership are also being considered for iAGRI students.

### **Candidate Completion of Studies**

All students from Cohort I completed their training and received their degrees as of the end of this year. Several M.Sc. students from Cohort II also graduated and remaining students will complete their degrees by December, 2014. Several PhD students from Cohort II initiated their dissertation field research in Tanzania. M.Sc. students from Cohort III returned to Tanzania to work on their thesis field research. All of the students performed well in taking the required course work related to their respective degrees. While doing coursework in the U.S. or Africa, they worked with their program advisors at their host universities and co-supervisors in Tanzania on the identification of thesis topics and preparation of research proposals. It is anticipated that the advisors from the host universities in the U.S. and Africa will continue to hold visits with their advisees while doing their field research over the coming year, by working with the local co-advisor and the student on the conduct of their research.

## **Collaboration with SUA Agribusiness Innovation Program**

iAGRI has been collaborating with Sokoine University of Agriculture Graduate Entrepreneurs Cooperative Organization (SUGECO) which has over 200 members. PMU staff worked with SUGECO leaders to develop a strategic framework for SUGECO activities and to clarify the interface of SUGECO with SUA. iAGRI is providing one year of support for the Director of SUGECO and two administrative staff positions. SUGECO has tremendous potential to link SUA with the private sector. Indeed, the Prime Minister and other government officials in Dar es Salaam have recently recognized the potential for SUGECO to assist them in stimulating private sector development, particularly in rural areas.

## **M.Sc. Student Placements in India**

Four M.Sc. students were admitted and initiated their studies at Punjab Agricultural University in India. They are studying soil science, nutrition and food technology. They initiated their programs in July. This brings the total number of students placed at PAU to 6. It is anticipated that this effort will result in increased collaboration between SUA and PAU, and more specifically, between staff from the two institutions. The students will serve as a bridge between them. PAU is an Indian state agricultural university, similar to the U.S. land-grant university. It has strong programs of research and outreach to the agricultural sector of Punjab State and was originally created with major assistance from OSU.

## **SUA Leadership Change Management Initiative**

A program of leadership development for top administration, deans, directors, and department heads at SUA continued during the past year. This program has been linked to a decision by SUA administration to implement its strategic plan to restructure the university. Recent changes in mid-level management at SUA provide an entry point to work with leaders at this level to promote change and to take more advantage of innovations that have emerged from the informal sector of the institution. These innovations have become integral to the capacity building dimension of iAGRI as highlighted in this report. These efforts are designed to facilitate SUA leadership in positioning the institution as a 21<sup>st</sup> century African university.

## **Problems/Challenges**

Over the past year iAGRI has continued to face several major implementation challenges. Some are inherent to Tanzania and cannot be solved by the project, though in some cases their effects can be mitigated through careful planning and implementation. Indeed the severity of these problems/challenges has been mitigated in part over the last year by iAGRI interventions designed to ameliorate them.



**Access of SUA Staff for iAGRI Collaborative Activities** - Top administrators and members of the academic staff at SUA are extremely busy people. They juggle multiple roles and responsibilities apart from their research and teaching responsibilities. This presents huge challenges in planning and implementing collaborative activities. To alleviate time pressures of SUA personnel, iAGRI promotes wise usage of time by keeping meetings with top administrators short (e.g., one hour) and by keeping training workshops shorter than the norm at SUA.

**Implementation Challenges at SUA** - iAGRI is committed to building sustainable capacity at SUA and works to ensure that SUA is provided support for on-going and new areas. Special effort is made to ensure that activities are SUA-owned, led and driven. This commitment brings challenges. Frequently, implementation of agreed-upon activities is poor in large part due to the structure and performance of the various layers of administration and management at SUA and a lack of monitoring of performance of those assigned to carry out tasks. SUA's management structure is hierarchical with control and authority vested at the apex. Middle-management authority is weak. Most capacity building activities routinely require the giving of orders or the signing off of documents by top level administrators or senior professors who are extremely busy. If these individuals are tied up in meetings or are traveling, delays and inefficiencies trickle down to the lowest level of activity. iAGRI will continue to address some of these issues through its capacity building activities at SUA.

**Congestion and Traffic Hazards on the Morogoro-Dar es Salaam Road** - This highway has become increasingly congested and hazardous over the past two years. Road construction has tended to slow traffic in both directions. Thus, trips to and from Dar can take up to five hours in one direction. Problems such as deep corrugation of the road surface in many places, irresponsible driving, and poor maintenance of many vehicles on the road, make the Morogoro-Dar and Dar-Morogoro journeys a serious health hazard. iAGRI now has a great deal of experience with video conferencing and is working with others to adopt it in order to reduce travel time wastage and roadway travel risks. It has also availed itself of a private airline in Tanzania that provides transportation for the general public between Dar and Morogoro. iAGRI is hopeful that this airline will continue to provide the service between Morogoro and Dar.

**M&E Reporting** - The online Feed the Future Monitoring System (FTFMS) continues to be complicated and requires a considerable amount of staff time. iAGRI worked well with the Mitchell Group until its departure. It hopes to develop strong systematic linkages with USAID/Tanzania as it takes greater responsibility for this system. Directives about how to use the system are often cryptic and hard to understand. PMU staff members have been able to work through most of these problems through communication with appropriate staff persons in Dar es Salaam.

**Female Student Retention** - Although we had initially targeted a 50:50 female-to-male ratio for iAGRI graduate student training, we have not been able to reach this target. Female candidates continue to drop out during the advanced stages of the recruitment process. Several wrote to us indicating that they were unable to continue with the program for social reasons. We have

attempted to address these problems by agreeing to delay the start of their training, by extending special privileges such as extra plane tickets for women studying in the U.S. to return to Tanzania to visit their children, and by providing them with opportunities to study in Tanzania should that be their preference. Selection of students for Cohort IV gave special emphasis to recruitment of women and has helped to bring the total balance of iAGRI fellows close to the 50:50 ratio. iAGRI is considering giving attention to selective recruitment of women for M.Sc. programs to be initiated in 2015 in order to reach gender parity.

**Student GRE and TOEFL Exam Performance and Placement at OSUC Institutions** - Low scores obtained by candidates on these exams continued to be a major hurdle for Cohort IV. These scores occurred despite the training provided to candidates prior to their taking the tests. The greatest GRE and TOEFL testing barrier for Tanzanians is their poor English language competency. Some OSUC universities have rigid GRE and TOEFL requirements. Low test scores are seen by graduate program administrators as a risk factor, and gaining admission for risky candidates requires extra work on the part of iAGRI and the host universities. Our experience has been that all students have performed well once they have been placed at OSUC institutions. Thus, lack of familiarity with how to take timed computer based tests also seems to be a major impediment for them.

**Internet Outages** - iAGRI uses videoconferencing to connect trainees with their U.S. advisors while the trainees are back in Tanzania conducting their field research, for final oral examinations (thesis defenses) so that students do not need to return to the U.S., for weekly planning meetings of the PMU in Tanzania and the ME at OSU, for bringing Tanzanian and American members of the collaborative research teams together for planning, and for virtual workshops joined by persons in both Tanzania and the U.S. The PMU has found internet services provided by a single provider to be inadequate. For this reason, three independent internet connections at the PMU have been installed. This ensures a reliable backup is always available should a particular service fail. In addition, the greater amount of bandwidth available through multiple providers allows load balancing for increased speed delivered to end users.

**Working Space for Visiting Scholars and Graduate Students** - iAGRI was fortunate to secure a building on the SUA campus during the first year of the project. The space provided by this building was initially sufficient. However, as the dimensions and volume of activity of iAGRI have increased, more space has been required. The building of a second floor for the iAGRI complex was initiated in summer, 2014 and will be completed in fall, 2014.

## **Special Issues**

### **SERA Collaboration**

iAGRI will continue to work with SERA to nurture excellent agricultural, nutrition and related environmental policy research over the coming year. We anticipate that iAGRI will take the lead on identifying appropriate topics and investigators while SERA will fund the studies as per

agreement at the beginning. Over the coming year iAGRI will work on building capacity for this research in SUA's Department of Agricultural Economics and Agribusiness.

#### Borlaug Fellows Program

Several iAGRI students placed at OSUC member institutions have won Borlaug fellowships for their thesis and dissertation research. This has added measurably to the quality of the research being undertaken by linking the research to that of members of the CGIAR system involved in East Africa. However, it has also created additional management complications since the use of these funds is essentially independent of the use of iAGRI funds. The ME and PMU have been working with students and their advisors to ensure that Borlaug-funded activities are consistent with the iAGRI programmed degree training and they are effectively administered by the PMU in Tanzania.

#### Lethargy in Gender Policy Implementation Committee (GPIC) at SUA

iAGRI committed itself early in the project to address gender issues on the SUA campus and at MAFC research institutes. On the SUA campus, it decided to work with the GPIC which was already established. iAGRI's Gender Specialist met numerous times with GPIC members and together they developed a proposal consisting of five distinct gender-related activities. iAGRI released funds in support of it, but GPIC has been very slow in implementing activities, preparing reports, and accounting for cash advances. iAGRI staff have met numerous times with GPIC but the delays continue. To address this problem, special attention is now being given to working with informal committees under the GPIC. They consist of individuals interested in addressing special on-campus gender issues. For example, iAGRI has collaborated with the International Livestock Research Institute (ILRI) gender unit in creating a gender-based community of practice group at SUA.

## 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 2014-2015.

**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, 2014, 128 students have been placed in degree programs. We will endeavor to place at least 7 additional students over the coming year in order to meet this target. Some will be students who deferred their admissions for personal reasons. We will also attempt to be selective of female students in order to meet the 50% female target. We will also monitor the progress of students who have been placed in degree programs and anticipate that all M.Sc. students in Cohorts II and III will complete their degree programs and graduate. We also anticipate that several of the Cohort II



PhD students will graduate by the end of the year. Special attention will be given to monitoring inputs by OSUC advisors for M.Sc. and Ph.D. students and appropriate interactions with Co-Supervisors at SUA. By the end of the year, we anticipate that all students placed in the different cohorts will have at least initiated their degree-related field research.

**Research** - We anticipate that most of the research teams funded under Phase I of the iAGRI Collaborative Research Program will have completed their field research and initiated reports of their findings. We are planning a second workshop for January, 2015 at which they will report on their activities and their plans for the following six months. This workshop will involve scientists associated with the project from SUA, MAFC and OSUC member institutions. In collaboration with SERA, iAGRI will define and provide support for additional agricultural and nutrition policy research projects. We also anticipate supporting additional research projects focused on identified Feed the Future-related problems. These will include the maize value chain project focused on Striga, Drought Tolerance and Maize Lethal Necrosis Disease being led by the Mikocheni Agricultural Research Institute and Iowa State University. We anticipate development of additional targeted research projects dealing with agricultural risk management, rice demand study marketing and horticultural crop production with a special emphasis on appropriate irrigation support systems.

**SUA Capacity-Building** - During the coming year we will continue to provide support for infrastructure improvements at SUA. We will also 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. We will also work with the SUA leadership on a program of change management, which is designed to facilitate adaptation of SUA to challenges it faces, including increased competition from other institutions, demands to provide training to greater numbers of students, increased needs to identify non-traditional revenue streams, and infrastructure improvements. Much of this capacity building activity will be organized around organizational experiments that have been described in a previous section of this report.

## **Cross-Cutting Issues**

### **Improved Enabling Policy Environment for both Agriculture and Nutrition**

**Climate Change Conferences** - The conference on agricultural intensification and food security held in November, 2013 and the conference on climate change and agricultural, economic, social and institutional sustainability programmed for June, 2015 were designed to strengthen climate change programs at SUA. These have been collaborative efforts focused on SUA, OSUC and Norwegian participation. Funding has been provided by both USAID and NORAD. Scientists from the U.S., Norway and Tanzania and numerous nations of Sub-Saharan Africa have been invited to make presentations at the conferences. The conferences have proven to be an excellent opportunity for SUA and MAFC scientists engaged in climate change research to present their findings, and many SUA scientists have conducted research with support from

NORAD and USAID. Major papers presented at the 2013 Conference will soon be published in a book published by Springer. This has been an excellent outlet for them to present their research findings. A similar publication is being planned for the 2015 Conference.

### **Increased Capacity of Women to Participate in Agriculture and Nutrition**

**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 past year, we paid special attention to the needs of women trainees. Several of them requested that their admission to graduate degree programs at OSUC member institutions be deferred for a year due to personal reasons. We have supported these requests. They are programmed to initiate their programs in August, 2015. In recruiting for Cohort IV, preference was given to recruitment of women candidates and approximately two women were placed in the U.S. for every male candidate. Many of the women students sent for graduate degree training have focused on human nutrition. Their programs and related outreach activities have been highlighted on the *Stories* section of the iAGRI website. These students have used their field research as an opportunity to reach out to rural families with information about how to improve diets and nutrition regimes, particularly for children.

### **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). The accumulated expenditure from project inception to the end of the current reporting period (September 30, 2014) is \$11,952,039. The total expenditure for Fiscal Year 10/1/2013 – 9/30/2014 is \$4,101,879. The planned annual expenditures for the next Fiscal Year (10/1/2014 – 9/30/2015) is \$7,002,072.

## **ANNEXES**

## Annex I: PMP INDICATORS

indicator Data / Disaggregation	Baseline Value	2014 Target	Achieved to date	Q1	Q2	Q3	Q4	LOP - Life Of Project	Units
A: FTF INDICATORS									
<b>IR 1: Improved Agricultural Productivity / Sub IR 1.1: Enhanced human and institutional capacity development for increased sustainable agriculture sector productivity</b>									
4.5.2-6: Number of individuals who have received USG supported long-term agricultural sector productivity or food security training	0	31	53			53		129	Number
Male	0	16	16			16			
Female	0	15	37			37			
4.5.2-7: Number of individuals who have received USG supported short-term agricultural sector productivity or food security training	0	150	188		52	79	57	450	Number
Type of individual	0	150	0		0	0			
Producers									
People in government									
People in private sector firms									
People in civil society	0	150	188		52	79	57		
Sex	0	150	188		52	79	57		
Male	0	75	119		28	51	40		
Female	0	75	69		24	28	17		
<b>IR 1: Improved Agricultural Productivity / Sub IR 1.2: Enhanced Technology Development, Dissemination, Management and Innovation</b>									
4.5.2-39: Number of technologies or management practices in one of the following phases of development:	0	13						40	Number
Phase I: under research as a result of USG assistance	0	7	27	27	0	0	0	23	
Phase II: under field testing as a result of USG assistance	0	6	4	0	0	3	1	17	
Phase III: made available for transfer as a result of USG assistance									
<b>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</b>									
4.5.2.-12: Number of public-private partnerships formed as a result of FTF assistance	0	2	2	0	0	0	2	8	Number
Agricultural production	0	1	0	0	0	0	0		
Agricultural post harvest transformation	0	1	2	0	0	0	2		
Nutrition									
Other									
Multi-focus									

B: iAGRI CUSTOM INDICATORS									
indicator Data / Disaggregation	Baseline Value	2014 Target	Achieved to date	Q1	Q2	Q3	Q4	LOP - Life Of Project	Units
<b>IR 1: Improved Agricultural Productivity / Sub IR 1.1: Enhanced human and institutional capacity development for increased sustainable agriculture sector productivity</b>									
OSU 1.1.1 Number of students assessed for Graduate level English competency	0	25	29	0	29			85	Number
Male	0	13	14	0	14				
Female	0	12	15	0	15				
OSU 1.1.2 Number of students making use of improved ICT in classroom instruction	0	1,565	0	0				6,250	Number
Male	0	1,045	0	0					
Female	0	520	0	0					
OSU 1.1.3 Number of researchers trained on Randomized Control Trials (RCTs)	0	25	0	0				85	
Male	0	13	0	0					
Female	0	12	0	0					
OSU 1.1.4 Number of research projects conducted which specifically focus on gender	0	2	0	0		0	0	9	Number
<b>IR 1: Improved Agricultural Productivity / Sub IR 1.2: Enhanced Technology Development, Dissemination, Management and Innovation</b>									
OSU 1.2.1 Number of research projects that address issues of climate change	0	5	6	6		0		14	Number
<b>IR 3: Increased investment in agriculture and nutrition related activities / Sub IR 3.2: Increased Capacity of Women to Participate in Agriculture and Nutrition</b>									
OSU 3.2.1. Number of young female students provided with women-to-women mentorship program	0	123	23	23				1,250	Number
OSU 3.2.2. Number of high school girls provided with career guidance and counselling program	0	2,000	2,595	0		0	2,595	4,150	Number
<b>IR 3: Increased investment in agriculture and nutrition related activities / Sub IR 3.2: Increased Capacity of Women to Participate in Agriculture and Nutrition</b>									
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	3	0		1	2	20	Number

## **Annex II: ENGLISH TOUR CONCLUSIONS**

### **SOKOINE UNIVERSITY OF AGRICULTURE**



### **A REPORT ON STUDY VISIT COMPONENT OF THE PROPOSAL FOR IMPROVING THE TEACHING OF ENGLISH LANGUAGE AND COMMUNICATION SKILLS COURSES TO SUPPORT THE PROVISION OF QUALITY EDUCATION AT SUA**

**Submitted to**

**iAGRI Project**

**AUGUST 2014**

**Prepared by  
Social Sciences Department**

## CONCLUSIONS/IMPLICATIONS FOR SUA

- None of the universities visited used a placement examination in the way SUA does. Those that did so in the past have discarded these assessments as impractical and mix students of varied abilities in classes.
- Instead of attempting to group students by learning levels, the trend observed is to group them by discipline and customize course material for relevance to the given discipline. Most universities attempt to have instructors specialize in a particular discipline, although of course labour turn over (staff shifting jobs) has been a problem.
- All the universities visited, and most particularly the University of Pretoria expressed an interest in improving collaboration and sharing of best practices among African universities in the area of English language and communications skills. The University of Ghana was also very interested in collaboration, particularly in research and staff exchanges.
- Although many universities provide their students access to online, self-driven learning tools, the trend seems to be moving away from these systems (like English Word Power). Though useful, the current emphasis is on reducing class sizes, improving teaching methodology, customizing content based on discipline, and providing more individualized support, such as that offered by Writing Centres.
- SUA could adopt the writing centre model, but integrate writing services in a larger language resource centre instead of having a stand alone writing centre. This would help minimise running costs and administrative load. The language resource centre could also assume some of the roles that centres of academic excellence play at UL and TUT.
- All universities visited require students to complete two semesters of English language curriculum. This requirement is taken seriously and students are not allowed to continue registering for courses if they do not pass these classes. SUA could work towards making Communications Skills 1 a mandatory course, where all students must take and pass.
- Almost all the universities visited struggle with large class sizes. Obtaining the necessary number of permanent staff positions is often problematic, so the universities rely heavily on part-time staff. This reliance makes it difficult to recruit and retain instructors of the highest quality.
- The departments providing English language services at the visited universities reported that central administration generally provided necessary resources for the department. In Ghana, the departments are expected to generate their own revenue, and are able to do so by offering custom English courses to groups and individuals. Additional funding sources for particular projects include alumni fundraising and private sector sponsorship. Of particular relevance to SUA is the custom English course model because there is a huge market for these services in Tanzania, particularly Morogoro. Perhaps the starting point should be a needs analysis to see what would the market require in terms English Proficiency Programs.

- Most universities visited internally develop customized learning materials for their students, such as language guides and workbooks. This enables them to use material that is directly relevant to their students, and target the materials by discipline. Small student fees are commonly collected to fund basic course materials. This is another approach which the department of Social Sciences at SUA could adopt.
- Other universities, in general, provided more opportunities for staff to improve their knowledge of teaching strategies and share solutions to common challenges. Many have workshops for all staff before each semester to address these needs. This is another useful input gained and that it could easily be integrated into the model of operations at the Department of Social Sciences.
- The staff at all the language departments visited were very collaborative. Most departments hold seminars or workshops before each semester to provide both training in teaching skills and methodologies and an opportunity for instructors to share challenges and best practices. This model would be very helpful to instructors at SUA.
- Out of all the universities visited, only the University of Cape Coast has been able to integrate assessment of English language into other academic disciplines. Strategies that have helped them achieve this goal include:
  - Academic staff from all disciplines take into account language proficiency in the grading of assignments. This requires both interest and proficiency on the part of instructors, but results in students being more motivated to improve their English language and communications skills.
  - Instructors from other disciplines engage instructors from the language unit to assist in grading assignments for language when necessary.

SUA could consider staff development initiatives for English language proficiency that would help create a similar learning environment.



## **Annex III: NEEDS ASSESSMENT REPORT**

### **Chapter Three**

#### **Conclusions and Recommendations**

##### **3.1 Introduction**

This chapter provides the conclusions and recommendations. It is organized in tables that point out training and non-training interventions for each of the five performance areas at the University namely quality management, asset management, project management, procurement and finance and audit. At the end of the chapter the Consulting Team provides a way forward in form of specific training to be offered and the target groups for the various categories of training as identified in this report.

##### **3.2 Conclusions**

This study has confirmed the findings as captured in the Deloitte report (2012) on areas of functional and institutional deficiencies at Sokoine University of Agriculture in areas of asset management, project management, procurement and finance and audit. The study also examined the whole concept of quality management as it is experienced at the University. However, this report has uncovered the root causes of these deficiencies to include:

- Staff not being adequately training in their areas of jurisdictions;
- Prevailing civil service mind set and lack of accountability among managers and staff at the University;
- Ineffective leadership and management capacity among members of the top management teams including deans, and heads of departments;
- Presence of rules and regulations that contribute to the inefficiency in the delivery of services in the areas of concern;
- Poor relationship between service providers and service users; and
- Inefficient processes in the delivery of services.

On the strengths of these findings, the Consulting Team makes the following recommendations to cover training and non-training responses in dealing with the various deficiencies. Much of the training advocated in this report will be in the form of collective training as opposed to individual training as the TNA did not cover individuals. SUA management will have the liberty to choose the kind of training that should be conduct in the immediate future and that which may be considered for the medium and long term. At the end of this chapter, the Consulting Team has made further recommendation for the kind of training that should take place immediately as part of this project.

<p>equipment;</p> <ul style="list-style-type: none"> <li>• Innovative means for delivering of quality services</li> <li>• Education awareness on facilities utilization;</li> <li>• Staff capacity building in the delivery of quality services across the board;</li> <li>• Management in leadership and management training for Top management;</li> <li>• Train top level managers and deans and heads of department in academic and support departments in management, team building and team working;</li> <li>• Train teaching staff in project supervision;</li> <li>• Public Procurement Act requirements;</li> <li>• Assets disposal procedures;</li> <li>• Train technical staff who deal with the four areas identified in the Deloitte report;</li> </ul>	<ul style="list-style-type: none"> <li>• Lobby for additional funds for research;</li> <li>• Improve supply of Learning materials</li> <li>• Improve Students/supervisors relationships</li> <li>• Institutionalize training to provide for HR capacity for the planned decentralized units;</li> <li>• Improve Teaching and learning processes and make them performance oriented;</li> <li>• Develop and implement an efficient results processing system to shorten completion time;</li> <li>• Develop a policy on online thesis supervision;</li> <li>• Improve communication between:</li> <li>• Students and supervisors;</li> <li>• Postgraduate and external supervisors;</li> <li>• Classrooms should be well equipped</li> <li>• Construction of lecture theatres for postgraduate students</li> <li>• Tuition fees should be paid by instalments;</li> <li>• Lecturers should follow time tables;</li> <li>• Assignments to be given on time;</li> <li>• The library should be well equipped with the latest reference materials;</li> <li>• The computer laboratory needs to be supplied with enough computers;</li> <li>• Improvement of logistics management in order to eliminate delays that perpetuate late graduation of students;</li> <li>• Mainstream a culture of training at the university both on the job as well as off the job and hands on;</li> <li>• Work towards coming up with sustainable income generating projects;</li> <li>• Improve on teaching facilities;</li> <li>• Equip the finance department with the necessary HR capacity;</li> <li>• The University should appropriately stagger the approval levels</li> </ul>
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	<ul style="list-style-type: none"> <li>• Streamline the project approval process to allow for a more efficient implementation of projects in line with Government and Donor agencies expectations;</li> <li>• Improve communication and coordination</li> <li>• Develop and implement an asset disposal policy;</li> <li>• Develop and implement ICT based accounting and financial management systems;</li> <li>• Provide support for accountants to obtain certification;</li> </ul>
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	<p>community eg. Auditing needs;</p> <ul style="list-style-type: none"> <li>• Renovate building facilities</li> <li>• Provision of reliable internet services;</li> <li>• Replacement of old computers in the library;</li> </ul>
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**Table 2 (c) – Recommendations on Project Management**

Training related	Non-training related
<p>Need for Project Management Training for staff in the following areas:</p> <ul style="list-style-type: none"> <li>• Project planning, implementation and monitoring;</li> <li>• Project management training for PMU staff.</li> <li>• Project Management and monitoring training for members of works inspection committees.</li> <li>• Project management for donor funded projects.</li> <li>• Project monitoring and evaluation;</li> <li>• Project Management training for lecturers and other non-finance people.</li> <li>• Project Management training for various subcommittees involved in project decision making process.</li> <li>• Project financial management for finance staff;</li> <li>• Build capacity in fundraising by training relevant staff in the relevant skills.</li> <li>• Training on sellable proposals, report writing and record keeping;</li> </ul>	<ul style="list-style-type: none"> <li>• Senior administrative personnel need to be involved in project planning;</li> <li>• Streamline procurement process and make it more efficient.</li> <li>• Streamline funds flow process.</li> <li>• Development a monitoring framework.</li> <li>• Contracting of project management.</li> <li>• Seek financing for the planned projects.</li> <li>• Improve flow of funds for funded projects.</li> <li>• University should prioritize areas for funding research projects (outside development partners funding);</li> <li>• Need of harmonization and formulation of umbrella policy/systems;</li> </ul>

Table 2(d) - Recommendations on Procurement Management

Training related	Non-training related
<p>Staff require management training on procurement management in the following areas:</p> <ul style="list-style-type: none"> <li>• Procurement processes, regulations and procedures;</li> <li>• Procurement and Payment processes;</li> <li>• Procurement Management training for Finance and planning staff.</li> <li>• Procurement procedures for donor funded projects.</li> <li>• Disbursement procedures for donor and government funded project;</li> <li>• Training on procurement skills for planning and finance staff.</li> <li>• PPA 2011 Awareness training.</li> <li>• Financial management of donor funded projects.</li> <li>• Eradicate bureaucracy through appropriate training in customer care, interpersonal relations and negotiation skills.</li> </ul>	<ul style="list-style-type: none"> <li>• Streamline service delivery process to reduce bureaucracy;</li> <li>• Service providers to act promptly in the provision of services;</li> <li>• Address challenges in scheduling.</li> <li>• Develop capacity to network and lobby at government level to speed release of funds for projects.</li> <li>• Streamline the payment process and monitoring;</li> <li>• Restructure procurement-maybe decentralize.</li> <li>• Align financial regulations to PPA 2011.</li> <li>• Establish separate procurement unit.</li> <li>• Streamline payment process for suppliers to motivate them improve supply of goods and services.</li> <li>• Revise the procurement policy to address the challenges;</li> <li>• The procurement policy should be implemented effectively;</li> <li>• Recruit/assign trustworthy persons to this portfolio;</li> <li>• There should be availability of current and relevant books in the Library;</li> <li>• Internet services should be upgraded and made available constantly;</li> <li>• There should be enough budget allocation;</li> </ul>

Table 2 (e) - Recommendations of Finance and Auditing

<sup>1</sup> Training related	Non-training related
<p>Staff in the Finance and Auditing function need adequate short and long term training in the following areas;</p> <ul style="list-style-type: none"> <li>• Budget preparation and prioritization</li> <li>• Customer Care and Interpersonal relations</li> <li>• Cash Flow Management</li> <li>• Financial Management of Donor funds</li> <li>• Computerized Financial System</li> <li>• Auditing Computer based Financial Management Systems</li> <li>• Audit Software package (s)</li> <li>• Information System Audit</li> <li>• Wider scope of training for audit staff to suit the diverse nature of SUA business;</li> <li>• Training in modern construction technologies;</li> <li>• Training in advanced Financial Management;</li> <li>• Project management as a requirement for easy auditing exercise.</li> <li>• Quality Services Delivery</li> </ul>	<ul style="list-style-type: none"> <li>• Re-engineer service delivery process to provide seamless services;</li> <li>• Create and manage an effective decentralized system;</li> <li>• There is need for a Client Service Charter;</li> <li>• Improve on time management;</li> <li>• Using modern software to improve financial management services;</li> <li>• Decentralize the accounts department;</li> <li>• Students should graduate on time;</li> <li>• Supervisors should be cooperative and help students in what (topic) they choose to learn;</li> </ul>

## Annex IV: iAGRI NEWS UPDATE

September  
2014



MICHIGAN STATE  
UNIVERSITY



UF UNIVERSITY of  
FLORIDA

VirginiaTech

IOWA STATE  
UNIVERSITY



International Programs  
in Agriculture  
113 Agric. Admin.  
2120 Fyffe Rd.  
Columbus, OH 43210

Phone:  
(614) 292-7252



*July and August have witnessed a steady volume of activity, much of it being focused on the placement of Cohort IV students at OSUC partners and Eastern and Southern African institutions through RUFORUM, at Punjab Agricultural University and at SUA. Attention was also given to capacity building and research. Phase I research projects continue to progress and Phase II collaborative research projects were further defined. Strides were also made in regard to major capacity building activities including pedagogic improvements, short-term training and organizational change and management leadership activities, including increased linkages between SUA and the private sector. Several major events are discussed below. We appreciate the support which you have given to iAGRI. It has been essential for continued development and implementation of our activities.*

### *Update on Activities July-August, 2014*

**Long Term Training** – Forty-nine Cohort IV students are now placed at their respective institutions of study. The Management Entity place twenty-three students were placed at OSUC member institutions. Several requested deferments until fall, 2015 due to personal reasons and will be placed at that time. Additionally, RUFORUM placed 12 students at its member institutions, ten students were placed at SUA including a PhD sandwich degree candidate, and four students were placed at Punjab Agricultural University. The total number of graduate degree students placed in degree programs through iAGRI now sums to 129. We anticipate working closely with student advisors over the coming months to ensure that they understand the dimensions of this training program and the responsibilities of U.S. and SUA co-advisors. We will also continue to advise directly the students regarding their responsibilities and anticipated evolution of their programs.

All Cohort III MS students based at OSUC institutions have now returned to Tanzania to initiate their field research. All successfully completed courses taken over the past semester. Over the coming months we anticipate that their advisors will visit them in the field and work with them and their Tanzanian co-advisors on the conduct of their field research. OSUC campus representatives will continue to play an important role in this process.

Cohort II students continue in their respective programs. Several of the MS students were able to complete and defend their theses and have graduated from their respective institutions. Others anticipate completing their degrees and graduating by the end of fall semester. iAGRI support for them will not be provided beyond the fall term. Most Cohort II PhD candidates were in Tanzania during the past two months conducting field research. Some of them were also visited by the OSUC advisors. Those requiring additional course work have since returned to their respective campuses to complete it.



**USAID**  
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AGRI Collaborative Research Program – Pis for the 8 funded Phase I Collaborative Research Projects submitted annual reports to the PMU in July. They were reviewed by two noted Tanzanian scientists and recommendations were provided to them regarding how to improve their research over the coming six months. All of the projects continue to make satisfactory progress and we anticipate that OSUC Co-Pis will continue to collaborate closely with their counterparts in Tanzania.

Progress continues to be made with regard to the identification and organization of research teams for Phase II research projects. Topics which iAGRI has identified for additional research are (1) the maize value chain; (2) drip irrigation and horticultural production; (3) rice marketing; and (4) climate change and agricultural risk management. A team of researchers from Iowa State University visited Tanzania in August to work with a counterpart team consisting of MAFC and SUA researchers to develop a full proposal to address major maize production constraints initially identified by NAFKA, another USAID project in Tanzania. Constraints include striga, stem borer, drought tolerance, and maize lethal necrosis disease. The full team has prepared a full research proposal which will be initiated during the coming quarter of activity. The rice demand activity has centered on an MS. thesis being pursued by an AGRI fellow. It focuses on varietal consumer preferences and market differentiation. An OSU staff person was recently in Tanzania to discuss rice technical marketing and policy related issues with staff at SUA. This topic is of interest to USAD-funded SERA project.

Continued funding for this research is anticipated based on this study and expansion of activity to include issues related to international markets. The drip irrigation activity expects to meet the needs of horticultural producers currently being served by TAHA and TAPP, another USAID Feed the Future project in Tanzania. AGRI has invited an agricultural engineer at SUA to prepare a related concept note focused on problems encountered by producers with this technology. Research on agricultural risk management will focus on the economic feasibility of providing crop insurance to Tanzanian farmers. A concept note has been prepared by a team of OSU researchers in collaboration with SUA researchers.

Staff Changes – Maria Mullei has been contracted through Virginia Tech to work on development of the Innovation Portfolio. Maria has experience working as a former USAID staff person in Kenya and more recently as the field representative of Virginia Tech for a major institution building project in South Sudan. AGRI is most pleased with this addition. Samantha Alvis, Leland Congressional Hunger Fellow, departed for the U.S. in late August, having completed her year with AGRI. She will be joining APLU in Washington, D.C. for the second year of her Fellowship. We anticipate continued inputs from Samantha involving the Leadership webinar series as well as follow up on some of the programmatic activity in which she has been involved while stationed with the AGRI Project Management Unit in Morogoro.

Short-Term Training for SUA Staff and Graduate Students – Priority areas for training are identified by a training committee of the PMU through consultation with SUA staff and students. Several OSUC staff provided short courses at SUA during the past two months. They included:

Gary Straquadine, Ohio State University -Qualitative Research Methods  
Margaret Beaver, Michigan State University – SPSS Utilization  
Graham Cochran, Ohio State University - Project Monitoring and Evaluation

South/South Linkages through RUFORUM -AGRI field leaders attended the RUFORUM conference in Maputo. iAGRI also sponsored participation by three SUA staff members. Three conference presentations featured joint activities involving staff from SUA and OSUC member institutions. Eric Vance, Virginia Tech, presented his program of university statistical support laboratories for research staff. RUFORUM has 43 university members in sub-Saharan Africa and is an important contributor to higher agricultural education in Eastern and Southern Africa.

Public-Private Sector Linkages and SUA – Efforts to expand SUA linkages with the private sector continued in July and August. These involved further development and outreach related to the (1) innovation portfolio; (2) the commercial horticulture unit; (3) SUGECO; and (4) the SUA alumni association. Innovation portfolio activities focus on matching private sector input needs with research being conducted by SUA faculty and graduate students. iAGRI is brokering related dialogues between 6 companies and SUA researchers. The Sokoine University Graduate Entrepreneurs Cooperative (SUGECO) trains young entrepreneurs, places interns in businesses, links entrepreneurs with credit providers, conducts entrepreneurship workshops, and advocates improved business policies in Tanzania. iAGRI continues to provide technical assistance to SUGECO related to developing a strategy for organizational sustainability. iAGRI is providing 6 months of



funding for a Coordinator and Farm Manager for the commercial horticultural unit that brings together SUA, TAPP and TAHA to serve the commercial horticulture industry. iAGRI is also working with SUA to develop a new communication strategy for SUA's alumni association. The Executive Director of OSU's University Alumni Association recently collaborated with counterparts at SUA in this regard.

**English language Program at SUA** – SUA has a program designed to strengthen the English Language capacity of its students. A staff person from Virginia Tech has provided important inputs to this program and recently accompanied staff from SUA on an iAGRI-financed study tour to South Africa and Ghana designed to review similar operations at major institutions in these nations. Based on this tour a report was prepared and presented to iAGRI. Recommendations found in this report will be used by the Director of this program at SUA and his counterparts to prepare a proposal to revamp the SUA program.

**iAGRI Annual Review** – Mark Erbaugh and David Hansen, OSU Management Entity, traveled to Tanzania to participate in the iAGRI third annual review with David Kraybill, Project Director, and Isaac Minde, Project Assistant Director. Project activities undertaken during the past year were discussed and plans developed for the coming fiscal year. David Charles, USAID/Tanzania Agreement Officer's Representative, and Asia Barnabas, USADI/Tanzania Assistant Agreement Officer's Representative, also participated in this exercise. The Annual Work Plan for FY 2014-2015 will be submitted to USAID in September. It will reflect continuity in the training, research and capacity building activities undertaken this past year.

**Graduate Student Awards** – Elias Balimponya, M.S. student at Ohio State, was recently awarded a Borlaug LEAP Fellowship. Congratulations to Elias and to his Advisor, Dr. Clay Sneller.

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*@ This Update includes data provided by various members of the iAGRI team. We look forward to receiving feedback from you, its readers.*

## Annex V: iAGRI PROJECT UPDATE



### Feed the Future iAGRI Project Update April-September 2014



iAGRI operates in Tanzania 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 National Agricultural Research System of the Ministry of Agriculture, Food Security, and Cooperatives. For more details see [www.iagri.org](http://www.iagri.org).

**Delivering Degree Training.** iAGRI now has 130 post-graduate students in training or already graduated. Many are staff persons from SUA and MAFC, while others are from local governments, NGOs, and the private sector. Cohort 1: the last of the 6 MSc students in this cohort has now completed his degree. Cohort 2: the 29 MSc students in this cohort are now finishing their thesis writing and some have already defended; the 19 PhD students in this cohort are at various stages of coursework, data gathering, and analysis in the US and Tanzania. Cohort 3: the 26 MSc students in this cohort are now finishing course work, and those studying outside Tanzania are preparing to return for fieldwork. Cohort 4: the 59 students in this cohort are about to begin studies; 26 are studying at iAGRI Consortium universities in the US, 10 at African universities outside Tanzania, 9 at SUA, and 4 in India (Punjab Agricultural University).

**Sponsoring Collaborative Research.** 8 iAGRI-funded collaborative research projects involving teams of researchers from SUA, MAFC, and iAGRI Consortium universities have delivered their 2nd progress report and have reached the halfway mark. Topics include rice productivity, crop nutritive content, conservation agriculture, tomato productivity, drip irrigation, and maize extension. iAGRI has recently commissioned new collaborative research projects on rice marketing and maize productivity and is in the process of developing a project on agricultural risk management.

**Building Institutional Capacity.** iAGRI builds institutional capacity at SUA through collaborative "organizational experiments" that engage partners throughout the university. These collaborative learning activities provide SUA personnel at all levels opportunities to adaptively seek and implement "new ways that work" in the production and delivery of educational and research services. Hands-on experience with organizational innovations paves the way for changes in formal processes and structures to help SUA become a more effective incubator of economic growth in Tanzania. Below is a description of 4 "organizational experiments" (out of a total of 16) underway at SUA:

- **Innovation Portfolio.** iAGRI's Innovation Portfolio aims to match "research demand" with "research supply" by coaching researchers at SUA and the Ohio State University Consortium on how to engage with the private sector to conduct research commissioned and funded by businesses. Currently, iAGRI is brokering dialogue between 6 companies and SUA researchers on research projects designed to address knowledge needs of these companies.
- **Sokoine University Graduate Entrepreneurs Cooperative.** SUGECO was begun by SUA staff as a cooperative in 2011 to train young entrepreneurs, place interns in businesses, link entrepreneurs with credit providers, conduct entrepreneurship workshops, and advocate for improved business policies in Tanzania. iAGRI has provided technical assistance to SUGECO to develop a strategy for organizational sustainability. For the next year, iAGRI has agreed to provide funds to SUGECO for two professional staff persons, an Executive Director and Operations Manager. These staff persons will help SUGECO develop and implement entrepreneurship programs that generate revenue so that SUGECO can self-sufficiently cover the costs of staff and operations.
- **Commercial Horticulture Unit** – SUA, iAGRI, TAPP (another USAID Feed the Future project), and Tanzania Horticulture Association (TAHA) have joined together to create a Commercial Horticulture Facility within the Horticulture Section of the Department of Crop Science and Production at SUA for practical demonstration and training for the commercial horticulture industry. iAGRI is providing funding for a Coordinator and Farm Manager for the first 6 months, after which the Facility will be sustained by revenues from commercial sale of horticultural produce.
- **Convocation** – with iAGRI's assistance, SUA Convocation is implementing a new strategy of communication with its alumni throughout Tanzania and the world. The Chief Operating Officer of the Ohio State University Alumni Association visited SUA for a week to help the Executive Council of Convocation develop the strategy.

**Strengthening Tanzania's International Linkages.** iAGRI sponsored 3 SUA staff members, two of whom are SUA administrators, to attend the biennial conference in Maputo, Mozambique of Regional Universities Forum for Capacity Building in Agriculture (RUFORUM). RUFORUM, headquartered in Kampala, Uganda, has 43 university members in Eastern and Southern Africa and has become an important mobilizer of initiatives and funding for agricultural higher education in Africa. Three presentations at the conference featured joint activities of iAGRI and SUA.

**Facilitating Outreach.** iAGRI was an exhibitor at Morogoro Nane Nane Agricultural Show, where iAGRI student trainees and collaborative researchers demonstrated technologies or methods developed in their research on soil moisture and water control in drip irrigation, tomato grafting for drought tolerance and disease resistance, weaning foods fortified with orange-flesh sweet potato, and improved grain storage. iAGRI staff persons also visited Nane Nane show locations in Dodoma and Arusha to market the Innovation Portfolio to companies with applied research needs.

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iAGRI is located at Sokoine University of Agriculture, Morogoro, Tanzania. Phone: 255-232600743. Email: [admin@iagri.org](mailto:admin@iagri.org). Web: [www.iagri.org](http://www.iagri.org).

*This update is made possible by the support of the American people through the United States Agency for International Development (USAID).  
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## **Sokoine University of Agriculture Analysis of Website Needs**

Prepared by: Emily Buck, Ph.D.

## **Executive Summary**

The current Sokoine University of Agriculture (SUA) website is a large repository of information related to all doings of the university. With close to 1,000 pages, the site is designed to be a resource for faculty, staff and students. However, as with any good website, there comes a time when inventory needs taken and changes made to continue to meet audience needs. Thus, this project set out to analyze the current website and provide input into its future. After a survey of students, multiple usability tests, and focus groups on campus, it became evident that there are a few large things to be addressed with a new website, as well as a few issues with functionality of the content and management of the site. From the need for more manpower to keep the site going to the need for more updated and dynamic content, it was evident that the site, while recently improved, still has a way to go.

It was found that one of the main audiences, students, is not being served through the site. Many do not use it, as they find no information for them on the site. They do not see themselves in it. Changes need to be made to make sure the site is a face for the university that not only encourages research, but academics and outreach as well. Being the only agricultural university currently in Tanzania positions the university to play on this fact and show through images, branding, and content that they are the best source for information. There is great need for more depth of content and more living content that is updated regularly. Such changes will increase users' opinions and usage of the site. Other recommendations are made in terms of course management abilities, organization, and layout.

## **Introduction<sup>10</sup>**

### **Project Background**

In today's technology age a university can be made or broken by their presence online. From research funding agencies to prospective students, the face of the university online is essential in attracting audiences. Internet users are very particular and if they don't find what they need on their visits they are very likely to not return. If a site is outdated or unattractive a user can find it to be not credible and thus portray a negative opinion of the university.

It has been noted by current student and staff that the existing website for SUA is not presenting the university as the exceptional institution that it is. It currently does not meet the technological and usability needs of SUA students and staff. The site is currently ranked number 90 in the current ranking of university websites at: [http://www.webometrics.info/en/Ranking\\_africa](http://www.webometrics.info/en/Ranking_africa). A search for "Tanzania" and "agriculture" on the popular search engine Google shows that SUA is not listed until page 4 of the search. If you add "research" to the search SUA is again not found until page 4. When searching "Tanzanian Agriculture Degrees" SUA does then appear on page one in an ideal location. However, once the site is found, is it presenting the right information?

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<sup>10</sup> *Introduction modified from original iAgri RFP*

Thus an initiative through a partnership with iAGRI was deployed to determine the website usability and functions. SUA and iAGRI understand the importance of first conducting a comprehensive website needs assessment to determine the content, functionality, navigation, and design that the administration, academic staff and students desire in a future website before launching into a redesign.

### **Current Website Information**

The current number of pages is approximately 1,000. The number of visitors was 1,217,095 from April 2013 to March 2014.

The current Computer Centre staff have a number of responsibilities in addition to the SUA website, resulting in one staff member spending approximately 60% of his time on the website and another staff member dedicating a quarter of his time. Students are not currently utilized as interns or student workers, but the Computer Centre is interested in exploring these opportunities.

### **Popular areas of the website**

Pages	Hits
<a href="#">Admission Information</a>	37754
<a href="#">Information for Staff</a>	33539
<a href="#">Programmes Offered at SUA</a>	31259
<a href="#">Teaching timetable</a>	29781
<a href="#">EXAMINATION TIMETABLE</a>	28415
<a href="#">University Contact Addresses</a>	26065
<a href="#">Entry Requirement</a>	25106
<a href="#">University Profile</a>	23991
<a href="#">Announcements and advertisements</a>	23455
<a href="#">Current Students</a>	22803

### **Audiences they serve include, but are not limited to:**

Current Students  
Potential Students  
Former Students (Alumni)  
Academic Staff  
Administrative Staff  
Ministry Officials  
Funders  
Research and Teaching Partners  
Other African Universities

### **Website Technology Background**

The website is hosted internally, running on Ubuntu 12.04 LTS servers.

It was initially developed using normal editors (Dreamweaver- HTML, JavaScript and PHP)  
It was later moved to Content Management System JOOMLA version 1.5 in 2009.  
It is currently in the process of migrating to JOOMLA 2.5.  
Utilizes a number of free Joomla plug-ins for additional functionality

### **Additional Third-Party Solutions Currently in Use**

SUASIS, a student portal linked to the SUA website, uses PHP source code.

### **Use of Social Media**

SUA currently maintains a Facebook page at:

<https://www.facebook.com/SokoineUniversityOfAgriculture>

SUA currently maintains a LinkedIn page at:

<http://www.linkedin.com/company/sokoine-university-of-agriculture>

### **Methodology**

This study was conducted in three phases: 1) Online Student Survey, 2) Usability Tests, and 3) Focus Groups. The online survey consisted of 33 questions on a Google form. A link to the survey was sent to all SUA students by the Dean of Students and was also placed on the homepage of the SUA site. Collection of survey responses occurred from May 30, 2014 to July 1, 2014, and yielded a total of 116 responses. The survey was reviewed for validity by a panel of experts at The Ohio State University as well as staff in the Computer Center at SUA and with iAGRI staff.

In phase 2, usability testing was conducted. Prior to arrival on campus a total of 36 usability tests were planned with audiences including students, administrative staff, administrators, and academic staff. Using Morae software (<http://www.techsmith.com/morae.html>) a set of eight tasks was developed. The tasks were selected to be general tasks that any user might do on a given day, and all were approved by the computer center staff for clarity. The tasks included:

- Please find the phone number for the Dean's office in the faculties of Veterinary Medicine
- Please find the courses needed to get an MBA in Agribusiness
- Please find an application to apply to be a student at SUA
- Find the teaching timetable for a second year BSc in Wildlife Management
- Find the specific entry requirements for a Bachelors of Veterinary Medicine at SUA
- What day is the resumption of teaching after Christmas break 2014
- Find the policy on intellectual property rights.
- Find the new health policy for staff of SUA

Following the methodology for usability testing outlined by Krug (2006), participants were paired with one of two researchers on a laptop and guided through the software, which

recorded their every click as they completed (or attempted to complete) the tasks. Everyone was encouraged to think out loud so their thought process could be noted in the findings. At the completion of the tasks, participants answered 10 questions related to the website and their experience working on the site that day. A total of 17 usability tests were completed at the end of the two days. Students, academic staff, and administrative staff were represented.

Lastly, a series of focus groups were planned to get further understanding of needs and opinions of the site's user base. A total of 12 focus groups were planned with students, faculties, centers' academic staff, library staff, administrative staff, and research project and programs staff. A focus group protocol was set up based on Kruger's (1998) focus group methodology. Questions covered in the focus group included:

- Who do you think a university website should serve?
- What are the main reasons you typically visit the SUA website?
- Does it successfully meet these needs? Why? Why not?
- On a typical visit to the site do you find what you are looking for? Why? Why not?
- What areas of the website do you find to be most useful in your everyday tasks related to the university? Why?
- Thinking of your past experiences on the site, what instances have you had where you were frustrated using the site? Please explain?
- Are there features or content you would like to have on the site that are currently not there? Please explain
- Are there any components or information on the site that you can think of that you feel is not needed or outdated? Please Explain
- What could be included on the site that would make your job/role at the university easier? Please Explain

A total of five focus groups were held with 28 individuals representing students, academic staff, and administrative staff. Prior to the beginning of the focus groups, a short demographic survey was handed out. All focus groups were audio recorded for later transcription and analysis. Two individuals, besides the moderator, sat in the room to take field notes. These steps allowed for triangulation of the data to ensure validity and reliability of the study. Each focus group lasted no more than an hour. Focus group 1 included 5 administrative staff from DSI; group 2 included 6 administrative staff, group 3 included 3 staff from convocation and the library; group 4 included 2 academic staff; and group 5 included 8 students. A final impromptu focus group was held with staff from iAGRI. These comments are also integrated into the findings below.

## **Findings**

Prior to the start of data collection the following items were identified by the Computer Center Staff as concerns of the current website. Inconsistent and confusing navigation

- Unstable power supply
- Outdated content
- Search function errors and inconsistencies
- Not designed to work with mobile browsers and devices
- Limited use of photos and video to promote the university

- Does not adhere to web accessibility guidelines
- The existing website presents many challenges to SUA Computer Centre staff, specifically
- Time-consuming web updates
- Difficult content management system
- Content preparation and collection
- Staffing-one employee dedicated 60% of time to website, one employee 25%
- Limited in-house staff dedicated to the development of new website content
- Outdated content governance policies (last revised in 2012)
- Lack of organizational and web branding identity

### **Conclusions and Recommendations**

A university's website is not only a component of their brand, but it serves as the face of university to the world. This requires careful planning on what is included, as well as how it is presented on the site. Clear understanding of the organization's goals, audiences and messages must come out throughout the site. Based on the survey, usability testing and focus groups conducted at SUA during summer of 2014, it is clear that site has made recent improvements, but is ready to be taken up to the next level. On the surface we learned from our interviews that people were ok with the site, but as we probed deeper, many issues came out. A world-class institution and resource for Tanzania, such as SUA, must be putting out a dynamic and engaging piece of communication. To do this, the following things need to be taken into deeper consideration.

### **Audiences**

Who truly is the audience of the website? According to the faculty, staff and students, potential and current students should be the number one audience. The website should first address the needs of potential and current students, from enrolling to classes to social activities. However, there are other important audiences that can't be ignored. There needs to be space for the needs of the academic staff, administrative staff and alumni of the university as well. It is also highly recommended that two new audiences be focused on as well as the new site is developed: consumers/farmers and the media. It was clear from the findings that a focus of the university website needs to be on the outside world and the farmers and consumers who need the information produced at SUA. It is also important that in this media driven world that resources be provided to act as a public relations tool for the university.

### **Content**

To be successful a website must be a living, breathing entity that is continually being updated and adjusted. It is clear from the interviewed audiences that this is a place where the website is falling short. Efforts need to be made to ensure that the content on the website is continually audited and updated. While an audit is currently underway, this is something that will need to be done yearly, if not more regularly. Doing such an activity will also address the issues with repetition within the site.



It is important to also note that in many cases there is information that is more than five years old, including student academic calendars and tuition information. There needs to be a system set in place that also allows faculty and staff to update their profile information, CVs and current research. This will not only show the quality of the university, but it will also help in finding research partners in and outside Tanzania. Students should also be able to submit to the site to advertise events going on on-campus. Something as simple as a campus calendar can be added that allows students and staff to see what is going on, and allows them to share their activities.

People are going to the site to find news about the university. They are disappointed when it is not current. It is recommended that the public relations staff work with the website staff to offer feeds on the home page of news. Possibly even through social media feeds such as Twitter or Facebook.

Currently there is a culture within the site that the computer center staff focus on the backend of the site and the content portion gets ignored. Depth of content is lacking throughout the site. Many pages within the Faculties are blank or only have a few lines of text. More information on courses, research, instructors, degrees, and campus are needed to keep audiences coming back to the site as a resource. Images will also become extremely important in the future site. It is recommended that actions be taken to use quality images that highlight not only agriculture, but also the students and their activities. A concern was voiced many times that the students cannot see themselves in the current site. This can be fixed through imagery.

Once content is delivered it is also important that there is a logical flow to the information. The linking structure must be thoroughly thought out, and future testing should be done for usability. Attached in Appendix A are three examples of peer institutions that have developed linking structures that contain the many features we heard from our study that are needed and desired. Lastly, there must be a system put in place to check the quality of the content. Many factual and grammatical errors are scattered across the site. This is unacceptable for a top tier university of educators and researchers.

### **Staffing**

It is very clear that the staff of the computer center is doing the best they can with the time and equipment they have. However, the needs of the university have outgrown what a few staff can do while working on teaching and other IT related services. It is highly recommended that one person be designated to work on the website full time and have no other responsibilities. This person could work with the public relations office for the university and the Dean of Students to ensure a clear, branded message is getting out along with updated news and materials. This person could also be responsible for working with faculties to develop and update websites. To aid in this process, a template for all programs could be developed in which faculties only have to post their content. This would ease the need for technical skills of such individuals and could make it a student or clerical staff job for each faculty. One of the biggest issues we heard multiple times was the lack of up-to-date information and student presence on the site. Such a step to identify someone to solely be in charge of the site would greatly increase the success of

the site. It is also encouraged to use the knowledge of the computer science students by having an intern help this appointed individual with the website.

### **Content Management System**

Currently the site is being managed through Joomla. It was discovered through focus group comments that some centers like the library are using different versions of Joomla adding more issues to its successful use. Joomla is a very code heavy software application in which one must be very versed in its language to add content or develop new pages or applications. It is suggested that investments be made into using a more friendly CMS system for the new site.

Systems like Drupal or Wordpress allow users to have templates they can use that require minimal technology skills, but also have the functionality on the backend to be advanced.

It was made clear after talking with students and academic staff that a course management system is desired to allow instructors to post materials as well as grades for students. We learned after the focus groups that the SUASIS system is integrated with Moodle to currently offer such features for users. However, it is obvious that the users are unaware of the capabilities in course management that the software they use can offer them. It is imperative

that training be held with academic staff and students to ensure they are aware of and fully utilizing these tools in the academic setting.

While several findings such as lack of internet in offices and unstable connections cannot necessarily be addressed easily, most of the findings presented are things that can easily be accomplished with some creative thinking and a little time.