

Review Meeting of ongoing RUFORUM Supported Grants at Makerere University

Implementation and Backstopping Support to RUFORUM Supported Projects at Makerere University

REPORT



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1.0 Introduction

Makerere University is a founder member of the Regional Universities Forum for Capacity Building in Agriculture (RUFORUM) and is one of the main beneficiary of the Competitive Grants System. As part of implementation, RUFORUM provides support to member universities to undertake projects that are deemed strategic to generate strategic R&D solutions. In the case of Makerere University, the on-going research projects that are targeted for implementation and backstopping support include the Graduate Research Grants awarded in 2014 and 2015 as well as Institutional Strengthening Grants (ISGs) awarded since 2014 – 2016.

Education and training for a career in scientific research provide a useful illustrative context for examining the overlapping but distinct roles of advisors, mentors and supervisors. At the same time, much of what can be understood about their influence in the ethical development of graduate students in science can be extrapolated to other disciplines and fields, and to other levels from junior to senior professionals

Wider relationships can help students explore a multitude of career choices, and learn how to translate their graduate education into various kinds of professional opportunities. With a modest investment of time, mentors and students can stay abreast of their postgraduate programme thereby equip them to complete in time. Timely completion has been an issue in African universities and it is a key intervention point in RUFORUM supported projects.

A formal engagement of research teams together with their supervisors has in the past-proved effective in terms of generating the urgency for timely completion as well as importance of quality supervision. Through the RUFORUM platform, the research teams are provided with experienced mentors that make time to listen and provide backstopping support and feedback on all aspects for project implementation.



Building Capacity for Prevention and Control of animal diseases for improved livestock production and livelihoods

Objectives

In light of the above, the meeting focused on:

1. Assessing the status of implementation of all RUFORUM supported projects at Makerere University;
2. Providing opportunity for collaboration across projects
3. Emphasizing the importance of timely completion
4. Provided support to graduate students with a view to secure timely completion of their training and research programme

2.0 Participation and approach

A three day meeting was held at the RUFORUM Secretariat starting 20th to 22nd March 2017. Each research team was provided up to 45 minutes to present their project and a maximum of eight research teams were featured per day. A multiplicity of methods were used to allow for free interaction and engagement. The methods used included reflective presentations, plenary/focus sessions, roundtable discussions, brainstorming, nominal groups, flow charting, and buzz-groups and knowledge café. The different sessions were facilitator-led to provide for a structured approach to archive desired outcomes. The RUFORUM Grants Management Unit Staff worked closely with Prof. Patrick Rubaihayo and Dr. Fina Opio to deliver the reflection-meeting program.

3.0 Lessons learned from the projects being implemented

- It was noted that the projects were largely delivering on graduate training and research (supervision, mentoring, self-motivation, peer review and feedback).



Harnessing the high protein and nutrient sequestration potential of bivalves for value addition for enhanced profitability of smallholder aquaculture



- In spite of the projects being university led research, some have attracted several non-university partners
- Some projects have developed useable/useful tools that are due that can be taken to market or handed over to the communities, however, in some cases Intellectual Property Rights (IPR) may need to be taken into account.

- Majority of projects that are field based research needed community engagement to ensure participatory involvement of communities and

An Agricultural Knowledge Sharing Framework between Smallholder farmers and Agricultural Knowledge Experts empowerment for community cooperation and sustainability of the lessons learned during research.



- Both students and PIs found the review meeting useful and requested for more of such meetings during the projects implementation.
- Some of the issues raised included selection of quality students, committed supervision, timing of teaching and synchronization of cross cutting course such as research methods and applied statistics that are key to research implementation
- Proper guidance of students to articulate their thesis research problem, objectives and linkage to the overall picture of the project was noted as key to students' quick grasp of their responsibilities.

While currently, majority of the students get supervisor on defense of their proposals, it was deemed useful to appoint the supervisors on admission of the students so that supervisors can work with the students on the project proposals.



Strategic Weed and Nutrient Management for Increased Finger Millet Production



Incorporating Climate Smart and Fast Growth Traits to Transform the Local Chicken Value Chain

personal commitments)

- There was consensus on the need for remedial course in data analysis/ data interpretation (both for qualitative and quantitative aspects) and scholarly writing
- There was recognition for follow-up activities to refine tools before full utilization by the communities and to be mindful of possible intellectual property rights.
- Challenges beyond project research teams (University strikes, dysfunctional laboratories and infrastructure, timely registration, students disengagement, student personal commitments)
- The issue of lack of medical insurance was raised and it was clear that although \$75 per student per year is provided by RUFORUM, it was very inadequate and in any case unknown apparently to both students and PIs.

- There was evidence that the students and supervisors are engaged and involved in functional mentorship processes leading to mutual benefit from the two parties (getting jobs, publishing- several publications already generated, cohort learning)
- It was noted that there were delays in accessing funds at university level due to university bureaucracy and also at the project level due to delayed accountability of the funds by the PIs.
- It was noted that in some cases some planned activities relating to specific objectives were being dropped by the students' dues to pressure of time and or resources. This clearly would not deliver the projected results of the entire project. The advice to such teams was for the PIs to take up these components to be able to deliver the project in its totality.
- Challenges of supervision of project with students that cut across disciplines. This was largely due to variations in the way different departments handle postgraduate research.
- Students have perceived fears such as "I will not graduate on time" due to limited time allocated by supervisors and mentors and the lengthy, bureaucratic examination of thesis before defense.
- Some social issues were noted including expecting and breasting mothers, getting married while undertaking studies, loss of loved ones, breakup of relationships, and transparency with budget management where the student is in the dark of what is available.
- The students largely don't know where to access relevant literature though it is available in the library and on internet.
- A need was noted to link different projects especially those that are working on similar commodity, value chains or research domains.
- We noted that the Makerere ICT community platform was not working and needs to be ensure that it is firmly established and serving the communities.
- There were good practices that the different projects can learn from e.g. scheduling meetings of research teams (Students, PIs and co-supervisor meeting at least once a month), Projects that have developed websites (<http://caprec-makerere.org/>) these should be promoted; there also projects that have taken initiative to bring in relevant partners that were previous not part of the research team. Feeding research and project implementation experience into curriculum development
- There was a request that RUFORUM should bring different research teams together to learn from each other particularly in experiential lessons from the communities.
- The PIs confessed that supervision was tedious. This is compounded by shortage of staff in some disciplines and failure by the university to pay supervision allowance.
- Some students were not aware of what they were supposed to get as stipend.

Recommendations based on the dialogue at the meeting that:

- RUFORUM should follow-up with a number of projects, which appear to be behind schedule.
- Cohort learning should be promoted
- The strategy to work with undergraduate students to improve data quality and support the masters and PhD students should be encouraged

- There is need for the future research teams from Makerere to consider using community engagement in their implementation so that farmers or communities are fully engaged in their activities. This will help solve the problem of farmers demanding for payments or incentives in order to collaborate with the researchers.

4.0 Project by project reporting

Table 1: Report on the students and grants projects progress

No.	Student name	Student thesis titles	Observations	Recommendations
Dr. Phinehas Tukamuhabwa: Rice brown sheath rot (<i>Pseudomonas fuscovaginae</i>) disease in Burundi: an assessment of occurrence, germplasm reaction, seed health status and disinfection approaches.				
1	Michael Kanaabi	Reaction of Rice Genotypes to Bacterial Leaf Streak Disease in Uganda	This project was initially supposed to train students from Burundi through a twinning programme with Makerere university. There was a challenge identifying students from Burundi who are interested in plant breeding and pathological studied on rice. The team has identified Ugandan students and modified the project title. This has resulted into delays and will need a no cost extension to stay on course to completion There is evidence of scholarship with draft manuscripts.	PI to follow-up the work done by the students to ensure delivery of the totality of the project as approved even when the objective three for each student thesis proposals are being dropped. Student's request for internship at BECA may not be accommodated in the project budget but resources can be solicited from elsewhere.
2	Jodan Lougm Andaku	Occurrence, Genetic Diversity and Pathogenicity of <i>Xanthomonas oryzae</i> pv <i>oryzicola</i> Population in Uganda		
Dr. Herbert Talwana Improving Mungbean productivity for nutritional diversification, income and food security in Uganda [Phase II]				
3	Ogwang Silver	Identification of widely adapted Mungbean varieties in different agro-ecological environments in eastern Uganda: Elite Accessions from AVRDC: Indonesia	The students are on course to complete their thesis research and write-up. The PI raised issues with collaboration with NARO and student disengagement. Ajo Florence had a baby and this slowed down progress. Ogwang Silver has effectively engaged farmers but there has been a challenge for demand for incentives. There was an issue of these study being agronomic based	The agronomic aspects of the study should be focused in the write-up taking into consideration details such as switching of varieties from one season to another The project should compare thesis objectives with project objectives and ensure that the scope of work for the two students is sufficient for MSC award
4	Ajo Florence	Adaptation of Mungbean (<i>Vigna radiata</i> (L.) Wilczek) for Intensive Cereal-Based Cropping Systems In Uganda		
Dr. Charles Masembe Genome characteristics and transmission dynamics of African swine fever, at the livestock-wildlife interface: pathways to the control of Transboundary animal diseases				
5	Mayega Johnson Francis	Determination of the Extent of False Positive Results In African Swine Fever PCR Diagnostic Methods In An Endemic Setting	The project has explored synergies and worked with existing projects The first student (Ogweng Peter) has already graduated and there is slow progress on part of the second student (Mayega Johnson) The project has generated a several publications There has been a challenge of delay of release of funds at college level.	PI to fast track second student completion
6	Ogweng Peter	The Role of the Bush-pig In The Epidemiology Of African Swine Fever At The Wildlife-Livestock Interface In Uganda.		
Prof. Jacob Godfrey Agea Unlocking the potential of indigenous fruit trees for increased food security, nutritional health, cash income, farm diversity and environmental resilience in Uganda				



7	Ogwali Hudson		The team did not attend (PI, students and co-supervisors?)	Selected as candidate for field visits
8	Napio Ruth			
	Dr. Vincent B. Muwanika	Enhancing productivity of traditional goat varieties among small holder farmers of Uganda		
9	Nsubuga David	Effectiveness of browse species to eliminate nutritional deficiency of goats in pastoral Karamoja	Project on course The students need support in statistical data analysis Project has potential for effectively engaging communities A negative attitude by farmers was noted.	PI and co supervisors to encourage cohort learning with other postgraduate students. This will help with data analysis. Students to work with supervisor to revisit and rephrase objectives
10	Acaitum Moses	Phenotypic characterization and perception of smallholder farmers on local goats and cross breeds in north-eastern -Uganda		
Dr. Bernard B. Obaa Increasing production and marketability of improved cowpea varieties in semi-arid regions of northwestern Uganda				
11	Tereka Eva	Participatory farmer evaluation and profitability of local and improved cowpea varieties in Arua, Northwestern Uganda	The project is on course. There were challenges with drought and supervision for one of the students.	PI and team to use institution process and guide supervisor student relationship PI and co supervisors to pick up all data including that which is not feeding into student thesis
12	Nyamaizi Sylvia	Phosphorus Requirements and Potential Biological Nitrogen Fixation for Agondire and Secow 2W Cowpea Varieties	There is lots of data particularly from Tereka Eva that may not link to the thesis objectives.	
Dr. Zziwa Ahamada Development of a Low-Cost Pineapple Drier and Utilization of Agricultural Waste to Enhance Income Security among Small-holder Farmers in Kayunga District				
13	Ahumuza Alfred	Simulation of a solar Biomass Cooker-Dryer for Pineapple fruits	There is evidence of adequate mentorship. Student and supervisor are very engaged. Both students have secured jobs through project intervention connections and hope to complete by May 2017.	Student to focus on hybrid solar fabrication aspects and drop the agronomic studies that were not sufficiently designed.
14	Miito Gilbert	Assessment of Pineapple Waste for Vermicomposting to Enhance Soil Fertility (Adding Value to Waste)	Miito Gilbert has issues with the design of his study which mixes with engineering protocols and agronomic practices. There was interest from farmers to receive feedback	PI and co-supervisors to pick up on areas of interest in line with the project focus. Interest from farmers can be addressed through FAPA.
Dr. Margaret Najjingo Mangheni Enhancing the capacity of Uganda's agricultural extension system to impact food and nutrition security of rural farming households				
15	Sitenda Tonney	Factors influencing household dietary practices of communities targeted by agriculture-nutrition extension interventions in South western Uganda	The project is addressing a critical challenge in agriculture, nutrition and extension nexus. Student disengagement and Irregular meeting with PI particularly for Fred.	Consensus with students to fast-track project implementation as well as profile project activities Students will strive to minimize social disruption and focus to complete
16	Shimali Fred	Competences Needed by Agricultural Extension Workers to Influence Farmers' Nutrition Behavior in Uganda	Fred had social disruptions The project may not complete on time.	

	Assoc. Prof. Johnny Mugisha Enhancing Competitiveness of Potato Production in Lowland Areas of Uganda			
17	Kyanjo Lule Joseph	Land and Labour demand for potato in lowland areas of Uganda	PI was not available but delegated to co PI at the meeting. The students demonstrated good understanding of project scope.	There will be need for the PI to guide the students on the study methods otherwise the research may not be publishable beyond student thesis
18	Kemigisha Shine Sharon	?Allocative Efficiency in Potato Production in lowland areas of southern Uganda	There is need for in-depth literature review to provide relevant background to the specific studies.	
	Robinson Odong Harnessing the high protein and nutrient sequestration potential of bivalves for value addition for enhanced profitability of smallholder aquaculture in Uganda			
19	Natseba Silver	Nutritional Characteristics of Bivalves and their Potential Use in Aquafeeds	The project is on course except for anticipated delays arising from timely acquisition of reagents.	Project team not to drop product development PI and co-supervisor to guide student with design of studies
20	Nantege Diana	Ecology of Bivalves in the Crescent of Lake Victoria, Uganda	There is demonstrated evidence of partnerships beyond the project partners. Product development objective very important to the project	
	Grace Nakabonge Novel technologies to enhance cassava germplasm conservation and sustainable utilization in Uganda			
21	Kalimunjaye Samuel	Evaluation of traditional conservation and management practices of cassava germplasm in three agro ecological zones of Uganda	PI took decision to replace a student. This was handled formally with knowledge of RUFORUM There were issues with scope of study for the newly recruited student	PI and co supervisor to assist Nangonzi Rosettee to broaden study scope to measure to a master's study. For Samuel to deal with agro-ecological zones
22	Nangonzi Rosettee	Optimisation of Thermo-therapy and Meristem Shoot Tip Culture Techniques for Efficient Elimination of Cassava Mosaic Viruses and Cassava Brown Streak Viruses	Both student need to ground their literature utilization Research team working closely with Namulonge National Cassava Research Programme	
	John Tenywa Strategic weed, nutrient and water management of increased finger millet production in eastern Uganda			
23	Nabirye Lilian Deborah	Increasing productivity of finger millet through optimum nitrogen management in Eastern Uganda	There graduate students are handling different components all relevant. Project to demonstrate linkages with the different objectives	PI to strengthen multidisciplinary collaboration for effective student supervision
24	Aguttu Goreti	Cowpea varieties influence on <i>Striga</i> soil seed bank in finger millet (<i>Eleusine coracana</i> (L.) Gaertn) fields in Pallisa District, Eastern Uganda	There has been effort to make the project team multidisciplinary CAES working with CONAS and even within they CAES college	



25	Muyingo Emma	Development of a farmer friendly ox-drawn finger millet seeder for reduced sowing drudgery		
Justine Namaalwa Jjumba The potential of camel production in resilience building to climate change in Karamoja, Uganda (CAPREC)				
26	Asiimwe Robert	The role of Camel Production in household resilience to weather shocks	Innovative implementation of the project with project website.	PI to strive and recruit student immediately in order to ensure that project components are addressed. Project website to be populated and popularized. Research team to link with other knowledge networks on drylands
27	Biira Jenipher Salamula	Camel rearing in the pastoral communities of Karamoja Sub-region, Uganda	One of the students is already completed and submitted their thesis. Project implementation derailed by a student that dropped out (Enuru)	
28	Enuru Thomas	Dropped out		
Fiona Tulinayo Enhancing University-Small holder farming community engagement through innovative ICT Tools				
29	Mwesigwa Ezra	An Agricultural Knowledge Sharing Framework between Smallholder farmers and Agricultural Knowledge Experts	Student from CoSIS has made good progress but the CAES has struggling with articulation of research problem. The project brings a unique mix of multidisciplinary research team	There is urgent need to engage the supervision team at CAES to guide the student RUFORUM will bring this group together with other teams working on web platforms for outreach and extension.
30	Drapari Bernard	Effectiveness of Brochures and Animations for Smallholder Farmers' Information Access		
Donald Kugonza Incorporating climate smart and fast growth traits to transform the local chicken value chain in Uganda (SMATCH)				
31	Lubandi Charles	Evaluation of Ducks as Kuroiler Egg Incubators and growth performance of resultant chicks raised under intensive and semi-intensive systems	The project has effectively engaged community and has provided opportunity for students to engage on development components in the project design. Four BSc students were innovatively incorporated on the project	Scope of work for Fabrice be modified as appropriate to fit MSc studies Projects to consider purchase of motion sensor camera for monitoring incubation behavior
32	Semahoro Fabrice	Effect of Combining Fast Growth and Adaptive Traits on Performance of Chickens	Project team very enthusiastic with their work. PI not available but represented by co-investigator. There is evidence of partnerships	
Anne Akol Enhancing production and incomes in the Honey value chain by addressing the challenge of pests and parasites of Honeybees in Uganda				
33	Namayanja Diana	Prevalence and control of <i>Varroa destructor</i> Anderson & Trueman (Arachnida: Acari: Varroidae)	Diana is making good progress, Agaba's proposal not yet cleared	PI to support and guidance to Agaba to streamline research and get proposal



		infestations among honey bee colonies in Uganda	The project team has clear direction of research and has effectively engaged communities –including MAAIF, district extension officers	approved. Otherwise there will be delay on completion.
34	Agaba Aggrey	Prevalence and Control of Small Hive Beetle <i>Aethina tumida</i> (Coleoptera: Nitidulidae) in Selected Districts of Uganda	Frist year (1 st installment) disbursement not accounted for.	Compliance to grant award letter especially in terms of providing audited accountabilities
Jacqueline W. Bonabana Socioeconomic and bio-physical drivers of ecosystem services provision and productivity of Arabica coffee in the Mt. Elgon region of Uganda				
35	Ssengabi Moses	Analysis of land use intensification among Arabica coffee farmers in Mt. Elgon region of Uganda	There is evidence of PI engagement with students but challenges with problem analysis and streamlining research implementation i.e. moving project development objectives into thesis objective analysis.	PI to engage co-supervisors to support students to articulate research problem
36	Cherukut Scola	Drivers of Biocontrol and Nutrient Cycling Under Arabica Coffee Production In Mountainous Ecosystems	There is also issue of delayed accountability for first installment which has affected the release of year two funds.	PI to process and submit audited financial report
Noble Banadda Pyrolysis of agricultural waste for bioethanol production and market development				
37	Munu Nicholas	Pyrolysis of Maize Stover For Biofuel and Biochar Production	PI not available but students demonstrated clear understanding of the project scope. There has been challenges with lack of equipment but this has been handled through collaboration with the university of Kentucky	PI and co-supervisors to review scope of research and advise the students.
38	Kizza Ronald	Pyrolysis of Pine and Eucalyptus forestry woods' residues for Production of Biofuels	The team, observed that the scope of Research may not be adequate for masters research	
Thomas Odong Lapaka Conservation of local crop genetic diversity- Unraveling the dynamics and challenges at smallholder farm level: A case study of sorghum and cowpea				
39	Businge Martha	Contribution of Cowpea and Sorghum Farmer Choices And Practices to the Varietal Availability Status in Uganda	Peter has made more progress than Martha. The project has made effective use of undergraduate students and has linked project interventions with existing projects in the community.	Research team to work with the undergraduate students to generate publications
40	Apunyo Peter Charles	Phenotypic Diversity of Sorghum on farmers' fields in Northern and Eastern Uganda	Specific request by the students on qualitative aspects of research. Project has potential to explore aspects of community engagement The student working on genetic aspects may consider undertaking molecular work instead of focusing on morphological differences	PI requested to finalize accountability of year one funds



			<p>The concept of replications in different environments should be reexamined</p> <p>There is also issue of delayed accountability for first installment which has affected the release of year two funds.</p>	
Prof. John Kabaasa Development of appropriate financing models for smallholder holder agricultural enterprises prioritization of summative entrepreneurship models through participatory action research				
41	Lubega, Karlvon David	Development of Appropriate Financing Models for Smallholder Agricultural Enterprises Prioritization of Summative Entrepreneurship Models through Participatory Action Research	<p>The MSc students have completed One PhD student support and on going</p> <p>Two undergraduate students innovatively engaged to support project through internship</p> <p>Mobile phone application (Open Data Kit (ODK)) linked to server has been developed. The team would like to scale this up.</p> <p>Research and project implementation experience feeding into curriculum and modules have been development</p> <p>There is still room for refinement of the measurement of the borrowers credibility tool</p> <p>The issue of patent to be considered in the near future</p>	<p>Measuring borrower credibility and business viability is a topical issue given the global interest in cooperatives and SACCOS</p>
42	Dr. Kasiime Michael	Did not attend the meeting		
43	Tweheyo Agbas	Did not attend the meeting		
Dr. Sylvia Angubua Baluka Building capacity for prevention and control of animal diseases for improved livestock production and livelihoods in Uganda				
44	Isabel Mweheire	Socio-economic factors influencing the adoption of Livestock insurance among dairy farmers in the agro-pastoral districts of Ibanda and Kiruhuura	<p>The project has just started but students making very good progress</p> <p>The students have clear research objectives and research problem well-articulated</p> <p>It was observed that to transformative research agenda will necessitate a geographical focus. Nonetheless, this was not possible in the case of this project.</p> <p>Some of the studies can be more structured to ensure desired academic rigor</p>	<p>With five students, PI has an opportunity has an opportunity to bring together a pool of researchers (Students and co-supervisors) and through implementation, one would hope that the project would emerge with ideas that would lead to a transformative agenda as part of pushing this project to the next agenda</p> <p>Through the college librarian, the students can be helped to access relevant literature</p>
45	Kabwiso Esau	Occurrence of Enteric Organisms' Antimicrobial Resistance Crossover at Domestic-Wildlife Interface in Pastoral Communities Around Lake Mburo National Park		
46	Arinaitwe Brian	Extension services as antecedents to increased Milk production among dairy farmer cooperatives in South- central Uganda		
47	Obukui Emmanuel	Predictive patterns of Fasciolosis outbreaks in cattle grazing in and around the wetlands of Soroti, Uganda		

48	Agaba Joseph	Did not attend the meeting		
Ass. Prof. Mugisha Reinforcing efforts towards establishing postgraduate programmes at The University of Burundi				
49	Ndikuryayo Cyprian	Screening of New Genotypes and GXE Studies For Resistance to Rice Yellow Mottle Virus in Uganda	The students reported late on second semester but they have been supported to settle in but making steady progress. Egide has successfully defended his proposal Reeverien and Cyprian are scheduled to defend soon. Desire is still trying to find his feet to a research topic.	REFUORM to engage PI and fast-track Desires progress Also follow-up with National Programmme Scientist at Namulonge and seek opportunity for support to students
50	Ntimpirangeza Reverien	Quality and Value Chain Analysis Of Coffee in Kirimiro Region in Burundi		
51	Nsengimana Egide	Orange Fleshed Sweet Potato As An Alternative Colorant In Yellow Bread		
52	Nimubona Desire	Did not attend the meeting		



Conclusion

The meeting achieved the following:

- 1) Enhanced collaboration between RUFORUM supported research projects at Makerere University
- 2) Increased comprehension of expectations of RUFORUM interventions;
- 3) Strengthened and streamlined graduate students research