

RUFORUM MONTHLY

The Monthly Brief of the Regional Universities Forum for Capacity Building in Agriculture

African Universities Can Reverse Agricultural Decline

Forecasts for the harvest of maize, sorghum, cassava and other staple food crops are looking grim this year. In Kenya, wheat has been devastated by a combination of below average rainfall and a deadly virus known as wheat rust. Late rains in Ethiopia have raised the number of people needing food assistance to 12.5 million. In Southern Sudan where soil is fertile and the rainfall patterns have been more generous, crops have not been planted at all. There are no seeds available and no scientists to propagate them.

Africa's agriculture is a brewing crisis that requires immediate attention. Even if the global economy emerges from recession next year, sub-Saharan Africa will still be one of the world's most vulnerable regions. There are more than a billion people suffering from food insecurity worldwide. Half of those who go to bed wondering if they and their children will be lucky enough to eat a meal the next day live right here among us. They are Africans.



Above: A scientist from Rwanda, (Innocent Habarurema) examines rice varieties. Improving crop yields is key to reducing poverty

Last month (July) the African Union heads of States summit in Libya focussed on agricultural investment. As those who attended pointed out, the falling production from our farms and smallholdings has become a hidden emergency. Thanks to chronic food deficits, sub-Saharan Africa's share of food aid has grown from about one third to more than half of the world total over the past decade.

The agricultural sector got \$4 billion in overseas development assistance this year.

That may sound a lot, but it is put into perspective by the nearly \$9 billion that has been pumped into the failing global

- *RUFORUM Monthly* is an e-newsletter providing information on activities of the Regional Universities Forum for Capacity Building in Agriculture.
- This *Monthly Brief* is circulated by the last week of every month ■

INSIDE STORIES

Makerere University honours Prof. Mazrui. Page 3

DeLPHE in Malawi and Kenya. Page 3 & 4

ANNOUNCEMENTS

RUFORUM Annual General Meeting. Mombasa, Kenya. 26th-28th August, 2009

African-European Deans Meeting, Mombasa, Kenya 31st August-2nd September, 2009

IFS East African focal node launch Meeting. 28th September to 2nd October, 2009 Entebbe-Uganda

RUFORUM Biennial Meeting, 12th-17th October, 2010, Entebbe, Uganda

Biotechnology in SSA: Announcing AgbioSafeSeed Conference, 8th-10th March, 2010

More information on RUFORUM activities can be accessed on the RUFORUM BLOG at <http://RUFORUMsecretariat.blogspot.com>

The RUFORUM Website (www.RUFORUM.org) is currently under reconstruction. We apologize for any inconveniences

For more information about the Regional Universities Forum for Capacity Building in Agriculture (RUFORUM), Contact: The **Newsletter Editor**, RUFORUM Secretariat, Plot 151 Garden Hill, Makerere University Main Campus, P.O. Box 7062, Kampala, Uganda. Fax: +256 414 534153; Tel: +256 414 535939; E-mail: secretariat@RUFORUM.org; Website: www.RUFORUM.org.



financial sector since January. According to the Alliance for a Green Revolution in Africa (AGRA), only 4% of aid flows went to agriculture in 2006 compared to 18% in 1980. By the same token, only a few African countries set aside 10% of their budgets for farming, its infrastructure and inputs.

This disinterest in the sector that grows our food is puzzling considering that more than 70% of Africans depend on agriculture as their livelihood. Farming and associated sectors provide work for two out of every three people in the labour force and generate one third of sub-Saharan Africa's GDP expansion. In other words, agriculture not only does the obvious – feeds us to keep us alive. It is critical for levering the continent out of its economic doldrums and its citizens out of poverty.

The need to take action is becoming ever more urgent as we enter the new millennium. Diseases are laying waste to harvests as happened with Kenya's wheat. Rising energy prices have triggered competition with biofuels for arable land. Water and soil will one day be as precious as metals as our population continues its inexorable growth.

Climate change – which for Africa means more frequent droughts of greater severity - must be faced up to as well. The five main threats arising from global warming are droughts, floods, storms, rising sea levels, and greater uncertainty in agriculture. Eastern, Central and Southern Africa will be particularly hard hit. Eight countries in the region are among the dozen countries worldwide at the highest risk of severe and frequent drought cycles. Another five – sometimes the same countries – will suffer huge uncertainty about agricultural production.

One way of making the agricultural sector resilient to all these dangers is through relevant research. Cutting-edge research breeds disease- and drought-resistant crop varieties, animal and fish breeds. It also discovers and examines efficient and intensive growing methods. Until now, farmers have expanded the area under cultivation to meet the demands of more and more hungry stomachs. The luxury to do this no longer exists. According to some projections, cropland may fall 20% short of required needs over the next 40 years.

Now is the time for Africa to start a Green Revolution (as happened in Asia in the 1950 and 60s) to boost staple cereal and animal yields. This cannot happen unless we see to it that there is a renaissance of learning at our universities. During the 1980s and 1990s, there was little

investment in tertiary education and very few agricultural PhDs passed through the system. As a result, we lost a generation of agricultural scientists, the men and women who conduct research and advise governments on policy and development on behalf of the farmers.

So bad is this situation that some organisations may have no senior scientists left in five years' time as they will have all reached retirement age. In some cases, scientists with only a bachelors degree to their name are already having to manage national research institutions. The task falls to universities to reconstitute training and replenishing the human capital in agriculture's public and private sectors and its research and extension institutions.

Traditionally, agricultural curricula have not paid attention to considerations such as climate change and intensive farming methods. In fact, faculty have tended to remain in their ivory towers rather than don a pair of gum boots and walk in the fields with farmers. Today's problems demand that different courses be taught such as the management of border-line ecologies. Agricultural education should be solution-oriented.

RUFORUM – the Regional Universities Forum for Capacity Building in Agriculture – is at the forefront of re-shaping the way agriculture is taught. This consortium of a dozen universities in Southern and Eastern Africa has developed doctoral programmes on a range of subjects from drylands resource management and aquaculture to soil science and plant breeding. It offers scholarships to hundreds of postgraduates so that they can replace the incumbent generation of ageing PhD scientists who are on the brink of retirement.

RUFORUM upgrades the skills of the faculty staff teaching the doctoral programmes. The majority of them achieved their own PhDs through research and had limited idea of how to oversee PhD coursework. They learn about quality assurance, the delivery of lectures and scientific writing as well as contemporaneous issues such as biotechnology and climate change.

Just as important, RUFORUM graduates are equipped to solve the problems of a changing world. They will be at the forefront of Africa's Green Revolution, revamping agricultural research institutions and advising governments on policies best suited to increase crop yields.

Contribution by Professor Adipala Ekwamu, a Plant Pathologist by training and the Chief Executive of RUFORUM. He can be contacted at e.adipala@ruforum.org



Makerere University honours its very own, Prof. Ali A. Mazrui, Africa's illustrious scholar and one of the top 100 global intellectuals

Makerere University launched on August 11, 2009 a campaign of recognition in perpetuity of the legendary Prof. Ali A. Mazrui. The Makerere Mazruiana is an initiative of the Makerere University Private Sector Forum (MUPSF). It is the first of five pioneering innovations of the first-ever Professorial Chairs and scholarship endowments conceived and to be developed locally by Makerere University.

Proposed is a US\$5 million Ali A. Mazrui Chair and scholarship endowment and a US\$10 million East African Ali A. Mazrui Center for Global Studies at Makerere University constituting the Makerere Mazruiana Project.

By recognizing Prof. Mazrui, one of Africa's oldest universities has embarked on a renaissance that will see Makerere reclaim her past glory. Professor Ali Mazrui, a Kenyan-born academic, trained in Makerere in the early 1960's. He is a world renowned political scientist currently based at Institute of Global Cultural Studies, Binghamton State University of New York .

Above: Prof. Ali A. Mazrui

DeLPHE SUPPORTS UNIVERSITY OF MALAWI STAFF



Meya Kalindakafe: University of Malawi Staff

A Development Partnership in Higher Education (DeLPHE) Fish Project is currently supporting some of its members in the University of Malawi (UNIMA) including Meya Kalindakafe and Dalitso Kafumbata in their Doctorial programs.

Meya is a Senior Lecturer of Ecology in the Department of Biology at Chancellor College. She teaches

General Ecology, Environmental Impact Assessment, Applied Ecology and Natural Resource Management. She holds a Masters in Ecology Degree from the University of Wales, Bangor (UK). Currently she is studying for her PhD with the University of Malawi/University of Wales (Bangor). Her research topic is *Assessment of the Ecological link between Fish and Aquatic Macrophytes (vegetation) of the Littoral Areas of Lake Malawi as Nursery Areas for Juvenile Fish*. Her research is partially being supported with funds from DELPHE to carter for miscellaneous equipment and consumables, and field work. The Chambo (*Oreochromis* spp.) fishery has experienced a sharp decline,

contributing about 50% of total fish production from Lake Malawi in 1980s to just 7% production today. This decline is attributed to a number of factors including habitat degradation through removal of aquatic vegetation.

Dalitso Kafumbata is a lecturer of genetics in the Department of Biology at Chancellor College. He is currently on leave for doctorate study in Conservation Genetics at the University of Hull. His study is on *Phylogeography and Population Genetics of Oreochromis species in Malawi*. The study aims at utilizing molecular techniques to conservation and management questions concerning the *Oreochromis* species as a contribution towards a national restoration program for the fishery industry in Malawi.

The main collaborators of the DeLPHE project are Prof. George Turner and Prof. Emmanuel Kaunda, Head of the School of Biological Sciences at Bangor University and Vice Principal of Bunda College, respectively.



Prof. George Turner: DeLPHE Fish Collaborator-Bangor University of Wales

Strengthening Human and Institutional Capacity in Eastern and Central Africa Countries Emerging from Conflict

The Project entitled 'Inter-University Collaboration to Strengthen Human and Institutional Capacity in Eastern and Central Africa Countries Emerging from Conflict' is financed through the Development Partners



Above: Prof. Eucharia Kenya, Project Coordinator, Kenyatta University

in Higher Education (DelPHE) initiative of DfID, United Kingdom. The three year project with total budget of £ 105,000 is aimed at strengthening a Higher Learning Institutions (HEIs) capacity for training in research and development in Eastern and Central African countries emerging from conflicts. The target universities for capacity strengthening are Kordofan University (Sudan) and National University of Rwanda (Rwanda).

The Project partners are Kenyatta University (Lead Part-

ner Institution), National University of Rwanda, Makerere University, University of Kordofan, Sokoine University of Agriculture, and the Regional Universities Forum for Capacity Building in Agriculture (RUFORUM). Achievements to date include:

1. An inception workshop was held at Kenyatta University in 2008 to chart project road map.
2. Resource persons to guide curricula review and short course module development in target universities have been identified and engaged.
3. The project website is up and running and accessible at www.delphe290-kenya.com. It is interactive and is linked to all partner institutions and the British Council.
4. Twelve (12) M.sc students have been admitted from target universities for training at Makerere University (4); Sokoine University of Agriculture (3) and Kenyatta University (5).

Tapping Agro-Biotechnology Potential for Improved Seed Production and Utilisation: The AGBIOSAFSEED Conference for SSA

Among developing countries, capacity issues, remain the largest constraint to both improving the debate on GM crops, and on adoption of this technology as a tool in meeting MDG goals. As a result, most of the players in the Genetically Modified arena remain the private firms. In Sub-Saharan Africa (SSA), most funds spent on biotechnology, particularly in the area of capacity building is from the public sector (90% of expenditures). A number of crops including GM cotton, maize, sweet-potato and cassava, among others, are at different stages of development and testing within SSA and regulatory frameworks are at different stages of developments. There have been attempts to harmonise the various frameworks.

The Agbiosafeseed Conference for SSA will take place **8-10 March, 2010 at the Imperial Resort Beach Hotel in Entebbe, Uganda**. The overall aim of the conference will be to highlight and discuss challenges and opportunities for safe biotechnology applications in SSA, particularly in the midst of the current changing global context of climate change and other emerging issues.

The conference will be co-hosted by the Science Foundations for Livelihoods and Development (Scifode) and RUFORUM.

For further information, please contact: makaraathur@yahoo.co.uk or m.osiru@RUFORUM.org.

RUFORUM BIENNIAL CONFERENCE, 12-17 OCTOBER, 2010 ENTEBBE, UGANDA Theme: Building Capacity for Food Security

In Africa in particular, researchers at various stages in their career face the challenge of communicating their findings in peer reviewed journals and to the wider stakeholder communities, more so the graduate student taking part in training programmes. The RUFORUM Biennial Conference provides an opportunity for young and older scientists to network and lesson learn towards increasing problem solving on the African continent. The conference exposes young researchers to professional gatherings and provides avenue for strengthening publications. It provides an opportunity to the old scientists to mentor and guide the younger scientists through discussions and deliberations and to ensure their work is relevant to target communities. The ultimate benefit of such networking is mentoring, information sharing, and resource sharing and mobilization for further research.

The October 2010 conference will provide opportunity for Networking and linking universities research to Policy. Both oral and poster sessions will be organized, including side-events for interested groups. For more information, please contact; osiru@ruforum.org

NEWS & EVENTS

SADC REGIONAL MSc PROGRAMME IN DAIRY SCIENCE AND TECHNOLOGY KICKS OFF



SADC staff visit University of Zimbabwe

The Faculties of Agriculture and Veterinary Science at the University of Zimbabwe have received €340,000 from ICART (SADC EU Project) to

develop and launch a regional MSc program and short training courses in Dairy Science and Technology. The Masters program commenced in November 2008 and 11 students have been enrolled. The students are now completing their first academic year and will begin their second year in September 2009.

Three 2-week short training courses in Artificial Insemination, Dairy Cattle Health and Dairy Cattle Feed Formulation, are going to be run between September and November 2009. In each training course, 10 participants from the SADC countries will be fully funded to attend the training in Harare, Zimbabwe. Adverts for the training courses will be posted on the SADC and RUFORUM websites. Dr. C. Mutisi, the Dean Faculty of Agriculture is the Team Leader for this project can be contacted at mutisi@agric.uz.ac.zw

PROF. SAMUEL KYAMANYWA, DEAN, FACULTY OF AGRICULTURE, MAKERERE UNIVERSITY

Prof. Samuel Kyamanywa obtained his B.Sc. and Ph.D (Agricultural Entomology) degrees from Makerere University. He is currently a Professor of Pest Management with 26 years expertise in Agricultural Entomology and Integrated Pest Management (IPM). He has successfully supervised over 50 M. Sc. & 5 Ph.D students in the fields of IPM, Biological control, storage pest management and use of molecular techniques for managing pests of the above crops.



He has been Principal Investigator of 11 research projects and coordinator for three regional research programs; i) Towards Sustainable Cassava and Sweet potato Production in East Africa under the BIOEARN Programme, ii) The East Africa Regional Integrated Pest Management Project under the Integrated Pest management Collaborative Research Support Programme (IPM CRSP), iii) Seed Health Improvement Programme under DANIDA. These Programmes involve scientists from the three East African countries. He has published 50 papers in international refereed journals, and 69 conference proceedings. He has travelled widely and has tremendous experience in International Pest management issues. He is the chairman of the Agricultural Chemicals Board of the Ministry of Agriculture and Animal Fisheries. He is also an external member of the Technical Committee of the IPM/CRSP, which is a USAID funded programme managed by Virginia Tech. His contact is; skyamanywa@agric.mak.ac.ug

MEETING ANNOUNCEMENT: CLIMATE CHANGE AND TRANSBOUNDARY ANIMAL DISEASES, 13-17 OCTOBER, 2009, ENTEBBE, UGANDA

Due to the strong reliance of African agriculture on rainfed production, climate change (CC) and variability remains one of the biggest threats to humankind ever, particularly for the poor farmers living below the poverty line in sub-Saharan Africa. Some of the related challenges such as epidemics are associated with climate change and variability and nomadic movement of some communities, resulting in trans-boundary diseases (TADs) outbreaks that not only affect livestock but also humans. There has been limited capacity in African universities to competently play a significant role in addressing issues related to climate change adaptation and responding to emerging epidemics such as Transboundary animal diseases. For academic staff and researchers, this limited capacity is partly attributed to the absence for platforms for sharing experiences. Similarly, shared knowledge needs to be translated to policy frameworks in order to sustainably respond to the challenges. There is thus need to share, document and channel research findings and initiatives related to Climate Change and Transboundary Animal diseases by universities and other stakeholders towards engaging policy processes on climate change adaptation. The Climate Change and Transboundary Animal Diseases meeting will focus on attainment of five outputs:

1. A common vision for undertaking climate change and TADs research for development in SSA developed;
2. A collaboration strategy for networking and building capacity in climate change and TADs research developed;
3. Strategies for enhanced participation of university lecturers, postgraduate students and research in local, national and international research in CC and TADs enhanced;
4. Linkages created with policy makers and other stakeholders;
5. A community of practice for strengthening collaboration among Higher Learning institutions and other partners in the field of climatic change and TADs research for development (R4D) formed for the SSA region.

Interested scientists and stakeholders are invited to submit papers, 5-7 pages, including summary abstracts of not more than 300 words. Deadline for receipt of papers is 15 September, 2009. Please send abstracts to secretariat@ruforum.org

Egerton University launches MSc Programme in Agricultural Information and Communication Management

Egerton University launched the regional MSc programme in Agricultural Information and Communication Management (AICM) programme in October, 2008 with 14 students drawn from eastern and southern Africa region. The Programme, which was designed by Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA) in partnership with universities, research institutions and several experts, is being coordinated by RUFORUM. The AICM is a two year programme, first year is for course work and year two is for research. Lecturers are drawn from the different faculties in Egerton, RUFORUM universities and the private sector. The students have completed course work, and have embarked on developing research project proposals under the supervision of Egerton University faculty staff and some academic staff from the home institutions. As much as possible, the research is linked to priorities of the home institutions. The programme has generated wide interest with several organisations offering to sponsor their staff. Based on demand, short tailor made courses on specific aspects of AICM are planned for 2010.

Implementing the AICM programme has posed a number of challenges to Egerton University as an institution. Running a regional programme requires adequate preparation in logistics, administration, student welfare, financial arrangements and facilities and retooling of the staff to be involved. Regular consultations between the hosting university and RUFORUM Secretariat are necessary to address some of the teething problems, including ensuring regional participation and quality. Regional programmes also have greater demand in logistics which can

not be implemented successfully on the administrative model of business as usual; a paradigm shift in management approaches is necessary to ensure international competitiveness of the programmes and students completing their studies on time. At Egerton itself, we have had to deal with institutional issues of coordinating the programme, and ensuring course harmonization amongst different units involved in teaching delivery. Some of these challenges have helped Egerton to review some of its approaches, and highlighted the need for greater rationalization of programmes and curriculum reforms. We continue promoting the programme widely within national and regional institutional forums and we are attracting more candidates from diverse backgrounds. The next intake has attracted several applicants for which fellowship support will be necessary for some. Continued support in fellowship, infrastructures and teaching materials is greatly desired to build African technical capacity in integrating ICT in communicating agricultural knowledge, technologies and new developments needed to realize the impacts of agricultural research that can improve food and nutritional security and incomes of the region.

The author, Prof Lenah Nakhone, is a Soil Scientist, and Director, Crop Management Research and Training Project (CMRT) at Egerton University. She can be contacted at: Crop Management Research Training Project, Egerton University, P.O. Box 677, Njoro, 20107. Email: cmrt@africaonline.co.ke.

9th AFRICAN CROP SCIENCE SOCIETY CONFERENCE

CONFERENCE THEME: SCIENCE AND TECHNOLOGY SUPPORTING FOOD SECURITY IN AFRICA

28 SEPTEMBER TO 1 OCTOBER 2009, CAPE TOWN, SOUTH AFRICA

On behalf of the Board of the ACSS and the local organizing committee of South Africa we cordially invite you to attend the next conference. The conference will open on Monday 28 September 2009 and the closing ceremony will take place on the 1 st October 2009. There will be plenary sessions, with plenary speakers as well as key note speakers on specific fields. Three to four sessions will run concurrently. Poster sessions will also be included. The theme of the conference will be "Science and Technology Supporting Food Security in Africa". The registration fee will be \$300 (US) for early registration and \$320 (US) for late registration. The registration fee for the conference will include a conference bag, luncheons, teas, field trips, the gala dinner and transport (to and from the airport). More information on the programme, accommodation, excursions and guidelines for abstracts, etc. will be posted on this web page as it become available.

For more information contact: Dr. G.D. Joubert

Vice- President, ACSS Council, **Chairman LOC, South Africa.** (Crop Scientist Consultant, P.O. Box 236, Robertson, 6705 South Africa Tel & Fax: + 27 23 6266354, joub@absamail.co.za, Mobile: + 27 83 458 0706)

NEWS & EVENTS

Dr. Irene Annor-Frempong appointed FARA Director for Capacity Strengthen-



Irene Annor Frempong is a Ghanaian by birth. She holds a PhD from the University of Bristol in the United Kingdom, an M.Sc. in Animal Production from Wageningen

University in the Netherlands, a B.Sc. in Agriculture and a Diploma in Education, both from the University of Cape Coast in Ghana and obtained Professional training in Biometry on Applied Research from the International Livestock Centre for Africa (now ILRI).

She has extensive experience in conducting, supervising and coordinating Research. Between 1989 to 2008, she lectured in the areas of Animal Science, Livestock Production Systems and Research Methodology in different tertiary institutions including University of Cape Coast, Ghana, National University of Lesotho, and from 1983 to 1985 in the College of Education, Benue State, Nigeria. She worked at Animal Research Institute in Zeist, the Netherlands in 1988 and at the FAP-Rekenholz Research Station in Zurich, Switzerland in 1982. Her scientific publications and editorial and consultancy

work are in the areas of animal science, livestock and rural livelihood systems.

In September 2008, Dr. Irene Annor Frempong joined the Forum for Agricultural Research in Africa (FARA) as Capacity Strengthening Program Officer for the program on 'Strengthening Capacity for Agricultural Research and Development in Africa' (SCARDA).

She is currently the Director of Capacity Strengthening for FARA, a position she assumed on August 1st, 2009.

Dr. Irene Annor-Frempong is married with three children.

Irene is a member of RUFORUM's Technical Advisory Committee. *She can be contacted at; ifrempong@fara-africa.org*



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The Regional Universities Forum for Capacity Building in Agriculture (RUFORUM), in collaboration with the International Foundation for Science (IFS) and the Technical Centre for Agricultural and Rural Cooperation (CTA) announces a Regional Workshop entitled "Developing Africa through Science and Technology Innovation in Agriculture- Women as the key drivers". The Workshop will take place 28 September to 2 October 2009 at the Imperial Resort Beach Hotel, Entebbe Uganda. Objectives of the Workshop are to a) Officially launch the IFS hub for Eastern Africa; b) build capacity of selected young NARS women scientists in data management and leadership through courses as identified in earlier women training workshops; c) identify priority capacity enhancing needs of the Eastern Africa region, especially of young women scientist.

Call for Papers

Papers (5-7 pages with summary of not more than 300 words) are invited on any of the following themes to be submitted electronically to the address below. The papers should provide adequate background on the key issue being addressed and provide policy recommendations. Papers can be submitted either in English or French. Posters will be welcomed.

Theme 1: Emerging Global Challenges to Development

Theme 2: ST&I for Sustainable Development and Management of Biological and Water Resources

Theme 3: Gender issues in S&T Innovations

Theme 4: Capacity Development for ST&I: Institutional networking and collaborating opportunities

Theme 5: ST&I and Policy: Options for enhancing women participation

The full papers should be received by 15th September 2009 by the Secretariat, Regional Universities Forum for Capacity Building in Agriculture (RUFORUM), Plot 151 Garden Hill, Makerere University Main Campus P. O. Box 7062 Kampala - Uganda Tel: +256- 414 - 535939 Fax: +256 - 414 - 534153. Email: secretariat@RUFORUM.org with copy to m.osiru@RUFORUM.org and c.ntwali@RUFORUM.org.

Recent Publications from RUFORUM Supported Research

Gasura E, Mashingaidze A.B and Mukasa S.B 2008; **Genetic variability for tuber yield, quality, and virus disease complex traits in Uganda sweetpotato germplasm. African crop science journal 16 147-160**

Sweetpotato (*Ipomoea batatas*) is an important root crop in Uganda, where yield potential and quality attributes have not been fully exploited due to limited breeding efforts and poor knowledge on the inheritance of some of its agronomic traits. A study was carried out at Makerere University to phenotypically characterise selected sweetpotato cultivars with special reference to sweetpotato virus disease (SPVD) resistance, growth habit, flowering and seed set ability, tuber yield and shape, tuber skin and flesh colour, dry matter, starch, sugar and b- carotene content. Twenty cultivars were selected for use in the assessment of their breeding potential and for improvement of yield and quality attributes. Cultivar Munyeera displayed the highest level of SPVD resistance followed by New Kawogo and Polyster as exhibited by relative area under disease progress curves following natural field infection and graft inoculation with SPVD causing viruses, *Sweet potato chlorotic stunt virus* and *Sweet potato feathery mottle virus*. Flowering ability was low in some cultivars and few did not flower at all. Some cultivars eg Munyeera, New Kawogo, Silk and Sowola which showed flowering ability failed to fertilise and set seed when crossed to specific cultivars. Preliminary

genetic analysis for yield and quality following crossing elite 7 female and 6 male cultivars in a North Carolina 2 mating designing showed wide genetic variability in the F1s for the important traits, and heterosis was observed for more traits such as tuber size and number of tubers per plant. Up to five genes may be involved in b- carotene synthesis and probably in combination with other genes in different genetic backgrounds can modify flesh colour from white to purple. The results demonstrate the possibility to improve sweetpotato for yield and quality using available germplasm. *Contact details: gasurae@yahoo.com*

Purchase T. and Jamu D 2009; **Determination of lead levels in farm-raised fish (*Oreochromis shiranus*) in Zomba District, Malawi. Malawi J.Aquac.Fish,1:2-5**

Concentration of lead was measured in muscle tissue of *Oreochromis shiranus* from six artificial ponds in Zomba district, Malawi. Samples taken from ponds close to a high-traffic road were compared to a control site which was 1000 m away. The mean concentration of lead in muscle tissue of fish samples in this experiment was $0.68 \pm 0.3 \text{ mg/kg}$. Two farms showed significantly greater lead concentrations than the control farm. There was no significant linear relationship between the lead concentration and the distance of the pond from the road. A significant linear relationship and a negative correlation did exist between the level of lead and mass of the fish sample. *Contact details: d.jamu@cgiar.org*



Robert Mulebeke is a Ugandan national born in Pallisa District, Eastern Uganda. He is currently an Assistant Lecturer at the Department of Agriculture, Faculty of Vocational Studies, Kyambogo University, Uganda. He trained as a teacher of Agriculture from Institute of Teacher Education Kyambogo (obtained a Diploma in Education, 1991). He graduated with a BSc. Agriculture, (1996) and MSc. Soil Science, (2004) from Makerere University. He also has a postgraduate Diploma in Groundwater Exploration, Water Resources Exploitation and Conservation (2007) from the Hebrew University of Jerusalem, Israel. He has taken various trainings related to Soil-Water relationships like the College of Soil Physics, 2005 (ICTP), Italy, and the International Course on Land Drainage, 2006, Wageningen, Netherlands. Apart from the teaching assignments, he has been involved in curriculum review, development of new undergraduate programmes, as well as managing examination records at the department. He has made several scientific presentations

and notably won an award during the Fifth regional meeting of the Forum on Agricultural Resource Husbandry (FORUM), supported by Rockefeller Foundation. He has acquired skills in ICT, M&E, and participated in monitoring and evaluation of Rural Development Projects. He is now a candidate on the Regional PhD programme in Drylands Resource Management at the Department of Land Resource Management and Agricultural Technology, University of Nairobi, Kenya. Robert can be contacted at rmulebeke@yahoo.co.uk, Cell phone: +256-772-517024.



Strengthening Participatory Plant Breeding and Seed Systems to Improve Productivity and Incomes of Smallholder Farmers in the SADC Region: University of Zambia

The University of Zambia has been hosting an MSc course in Plant Breeding and Seed systems since 2007. The Project is a joint initiative with Africa University (Zimbabwe), the Zambia National Farmers' Union (a local farmers' association), HODI (a local NGO) and RUFORUM (as a consortium of Universities). The overall objective of the project is to strengthen human resource capacities in plant breeding and seed systems to support improved productivity and incomes of smallholder farmers in the SADC region. The Project is funded by EU through the SADC ICART Programme

Twelve students (3 females and 9 males) sponsored through ICART and 2 (one female and one male) sponsored by RUFORUM enrolled into the course in 2008. The studentship covered SADC countries (Malawi, Tanzania, Zimbabwe and Zambia) only. These students have gone through their course work and are currently doing their research in a wide range of crops (maize, beans, cowpeas, sweet potato, rice, sorghum and finger millet) addressing different topics (development of selection index, characterization, inheritance and others). The students are expected to finish their studies by March 2010.

Input from other stakeholders into the project has come through teaching of a course (Dr. Patrick Okori, University of Makerere: Molecular Genetics and Biotechnology; Dr. Fransisco Miti, Seed Certification and Control Institute: Seed Systems), Seminar talks (Mr. Marx Mbunji, Business Manager SeedCo Zambia; Dr. Bholu Nath Verma, Breeder Zamseed company and others) and, research guidance/supervision (CIMMYT-Zimbabwe, CIAT-Malawi/CIAT-Bolivia, GART-Zambia and others).

The Project enjoys the guidance provided by the ICART Programme, the technical backstopping through the RUFORUM and, the support from the University of Zambia management.

For more details about the programme, contact Dr. Mick Mwala at; mmwala@yahoo.com



Professor Mário Paulo Pereira da Silva Falcão is the new Dean of the Faculty of Agronomy and Forestry Engineering at Eduardo Mondlane University, Maputo, Mozambique. He obtained his "Licenciatura" at Eduardo Mondlane University in 1994, and Bachelors of Science in Forestry in 1997, M.sc in Forestry Finance and Projects Evaluation in 1998 and PhD in Forestry Management and Economics in 2005 obtaining all the three degrees at Stellenbosch University, South Africa.

He has served as a lecturer at the Department of Forest Engineering at Eduardo Mondlane University since 1994, rising to the present position in 2008. His interest is in the area of economics and policy issues related to natural resource management. *He can be contacted at mariopaulofalcao@hotmail.com*



Prof. Emmanuel Kaunda: The Regional Technical Fish Node Coordinator

PROGRESS ON NEPAD SANBIO FISH NODE AT BUNDA COLLEGE, UNIVERSITY OF MALAWI

A Southern Africa Network for Biosciences (SANBIO) is one of the four regional networks of NEPAD (New Partnership in Africa's Development), Science and Technology Division.

Following the designation of Bunda College as the Regional Fish Node in June 2006, the Fish Node will shortly be implementing the Fish Biodiversity studies of inland rivers including Kafue in Zambia, Linthipe and other rivers in Malawi and Bengo river in Angola. Funding of up to EURO 360,000.00 has been sourced from the Government of Finland and South Africa under a bilateral programme called BIOFISA. The funds will support RUFORUM'S initiatives which support Regional PhD program in Aquaculture and Fisheries at Bunda College. Nodal activities are being coordinated by Professor Emmanuel Kaunda who is the current Regional Technical Coordinator of the Fish Node.

The mystery of the Personal mastery and Soft skills course



Whereas I realized and appreciated the unique strength of RUFORUM's PhD program in Plant Breeding and Biotechnology since I joined it almost a year ago and her other regional programs, when I received the invitation to participate in the Personal mastery and Soft skills Training work-

shop organized by her management at Egerton University from 13th to 23rd July, 2009, I was not excited at all. I expected nothing new and in fact told my colleagues that I was going there just to relax. After all I was going to meet fellow scientists and academicians. To my dismay things turned different right at the time I was told to introduce myself to the participants. I was required to tell the participants my social background, the thing that most excited me in life, things that make me proud of myself and the bad things I know about myself. I found it hard to say those things I was not proud of implying that if I had ever thought to reflect on them earlier, then I would have got rid of them. This was the first thing to interest me in this training course besides interacting with interesting colleagues from the other universities. It seems obvious but it isn't. For sure if we had the power to reflect on our actions that potentially hurt others or kill our own talents then we would be in position to avoid them and live in universal harmony. So the first experience I gained from this course was the ability to realistically assess myself or understand my emotions and actions and their likely effect on others which is very important for me as an aspiring leader in my future place of service.

When the facilitators skillfully read the course objectives and content I just became anxious to follow and understand all the concepts. I indeed ended participating actively with a lot of enthusiasm. The content of the course and its presentation was both exciting and inspiring. Apart from gaining knowledge and skills it made me to realize my full potential, change my attitude and look at myself differently. It is difficult to exactly explain the magic power of this course to make one develop an immeasurable self-confidence and courage "I can do attitude". It is just like a plane mirror which gives an exact image of oneself by just a simple reflection. I simply found myself feeling differently the first day attended it. I had to regret for not having had the opportunity to attend it much earlier in my youthful life. I believe if I had

attended it earlier I would be a much greater person than I am now. Nevertheless it removed all the clouds that were surrounding me and thus holding me behind which had accumulated mainly from a traumatizing childhood life. I am now convinced if God blesses me with more life, I can still work harder and become among the greatest fifty people in my country in the next 15 years.

The course does not raise empty ambitions that often cause people to fight for positions or displace each other. This is because all its concepts clearly recognize and appreciate co-existence and thus emphasize things like team work, collaboration, partnership, networking, equitable sharing of resources and managing relationships. It recognizes the fact that even for established systems to flourish they have to interdependent on each other. Thus it harnesses ones emotional intelligence or ability to manage his/her emotions and those of others besides enriching him/her with communication, facilitation and other social skills which are key for one to easily get adapted and accepted in any community or institution. It also emphasizes effective communication through active listening and giving feed back to each other. Indeed it was interesting to practice giving each other feedback on the last day of the training.

The course also prepares one to be a change agent who does not impose change on people or institutions but facilitate them to accept change. It makes you look at everything positive. That is it instills skills that enable you to tolerate problems and even turn them into opportunity. And thus it does not only emphasize commitment but recommitment in ones endeavors because in any move one takes there must be some hill somewhere to climb which calls for fresh energy.

From the above none exhaustive attributes of this course, I absolutely commend the management of RUFORUM for exposing me to it and for its innovative PhD program at large. This course has the potential to improve our quality as graduates of Agriculture and consequently accelerate the rate of Agricultural development in this region. Therefore it is a challenge to the management of RUFORUM as usual to use its esteemed position to influence all our universities in the region to tailor it into both our undergraduate and graduate programs. Truly this innovation towards producing scientists with effective management skills is an invaluable strategy for coping with the ever changing business environment being driven by climatic change, globalization and population explosion especially in the Sub-Saharan Africa.

For more details, Sadik kassim can be contacted at sdkas-sim@yahoo.com

Agricultural and Rural Innovations Studies (ARIS)

A joint pilot Regional PhD Programme by 3 RUFORUM Universities

The phenomenon of agricultural or rural development in Africa is complex and many initiatives have not been successful in changing the wellbeing of small-holder farmers. Low uptake of agricultural technology in Africa points to challenges in the interaction of socio-cultural and technical dimensions. Universities which train professionals who generate and disseminate agricultural knowledge and technologies are central to this dilemma. The universities are criticised for producing graduates who lack the competencies to deal with complex and multi-dimensional challenges related to poverty and sustainability. Innovation systems approaches are more promising in addressing such challenges but their contextual conceptualisation today and operationalisation are still problematic. There is a critical shortage of professionals with interdisciplinary orientation and possessing professional skills to support innovation systems that transcend technological and socio-political landscapes.



Above: Participants at the ARIS National Stakeholders Consultative Workshop- Entebbe, Uganda

The ARIS project, funded through the EU-EDULINK, seeks to develop a regional PhD programme in Agricultural and Rural Innovation Studies to enhance application of science and technology in improving rural livelihood and economic growth of countries in the Eastern, Central and Southern Africa (ECSA) region. Specifically, the project will strengthen the capacity of universities in the ECSA region namely, Makerere University in Uganda, Egerton University in Kenya and Sokoine University of Agriculture in Tanzania to train competent and relevant professionals for research and development of the rural sector.

Progress to-date

A Steering Committee comprising of six persons representing of each of the partner universities, one from RUFORUM, the Project Coordinator and the Assistant Project Coordinator has been constituted. A Secretariat to coordinate the project activities has been established at Makerere University, in the Department of Food Science and Technology.

On the 10th-11th August 2009, Uganda held its National Consultative Stakeholders Workshop in Entebbe, Uganda. Tanzania will hold hers 27th- 28th August 2009 while Kenya 31st August-1st September 2009. The findings from these workshops will be presented to the regional stakeholders workshop in Kampala, Uganda is scheduled for 12th -14th October 2009 in Kampala, Uganda. This will be the platform where more stakeholders will be engaged in development of the programme. Efforts are also underway to mobilize resources to bring more stakeholders on board.

Anticipated Project Impact

- Successful implementation of the ARIS will yield the following impacts that will be disseminated among the intended beneficiaries namely universities, communities, employers, and targeted candidates;
- Strategic partnerships and solidarity among the consortium of universities in the ECSA region and with European universities. The partnerships provide mechanisms for sharing capacities and resources to train relevant high calibre professionals to influence agricultural and rural development.
- Increased capacity of the ECSA universities to engage with the communities and other development actors to better contribute to development while maintaining their academic roles. This brings universities into the mainstream of the national development agendas, where training and research directly contribute to solving real-life problems now and in the future.
- Integration of disciplines and building change management skills. This is critical for professionals who will work with multiple stakeholders to solve complex multi-dimensional problems.
- Improved programme design and service delivery for agricultural and rural innovation through the graduates of the programme and those they influence.
- Higher employability of graduates and enhanced contribution to global knowledge systems and practices. The multi-skills of the graduates and their intellectual capabilities will enhance their opportunities for positions of high standing.

For more information, Please contact; ARIS SECRETARIAT, Makerere University. P.O. Box 7062, Kampala, Uganda. Email: aris@agric.mak.ac.ug or RUFORUM Secretariat@ruforum.org

Tel: +256 712566952/+256 782 205214

Towards promoting networks of specialized research and higher education institutions: The NEPAD-Universities dialogue, 2009



The New partnership for Africa's Development (NEPAD) is a vision and strategic framework for Africa's renewal. NEPAD is designed to address the current challenges facing the African continent. Issues such as the escalating poverty levels, underdevelopment and the continued marginalization of Africa needed a new radical intervention, spearheaded by African leaders, to develop a new vision that would guarantee Africa's Renewal. Although NEPAD focuses on regional capacity building to develop research and training capacity, the reality is that most tertiary education institutions in Africa are not wholly cognizant of NEPAD's programmes.

To address this gap, NEPAD, in collaboration with the African Network for Agriculture, Agro-forestry and Natural Resources Education (ANAFAE), the Regional Forum for Agricultural Capacity building (RUFORUM), the African Technology Policy Studies (ATPS), the Forum for Agricultural Research in Africa (FARA), the University of Ghana, the Maseno University of Kenya, the University of Malawi and CTA organized a dialogue platform workshop at the FARA Secretariat in Ghana from 28th – 30th July 2009.

This meeting was to the NEPAD-SADC Regional Stakeholder workshop held in Johannesburg (4-5

December 2008), which recommended the need for a "Road Map" to outline the interaction and collaboration between NEPAD and African Centres of Knowledge.

It was agreed during the Ghana meeting that the dialogue between NEPAD and tertiary institutions be intensified and taken up at policy making level. As a quick win NEPAD was invited to sensitize University Senior Managers during RUFORUM's Annual General Meeting scheduled for 26th-29th August 2009. Box 1 gives the key messages from the Ghana meeting. Dialogue continues

Box 1: NEPAD-Tertiary Institutions Dialogue: some key messages

1. ***We are friends of NEPAD: NEPAD is our friend***
2. ***NEPAD has to engage actively with various stakeholders***
3. ***NEPAD activities are not competing with national programmes***
4. ***There is opportunity for universities to support CAADP in analytical work***
5. ***There is need to strengthen inter-university collaboration***
6. ***Universities and research institutions need to be proactive in seeking space and audience to engage CAADP and other NEPAD agenda***

This article is a contribution from Prof. Adipala Ekwamu, RUFORUM Regional Coordinator

For more details; Please contact; Email: e.adipala@ruforum.org and secretariat@ruforum.org

Business unusual: Transforming graduate training in the ECSA Region



Dr. Wellington N. Ekaya

In Africa, the livelihoods of over 80% of the population are dependent on agriculture. About 70% of full time employment, one third of total GDP and 40% of total export earning come from the sector. However, agricultural productivity remains low and non competitive in the global market.

Higher education in agriculture has a direct impact on agricultural performance and productivity, through stimulation of knowledge driven economic growth strategies and poverty reduction. In Africa today, the scarcity of appropriate human capital to produce added value, make use of technology and attract investments remains the key constraint to poverty reduction, rather than the lack of natural resources and/ or geographical marginality.

The Regional Universities Forum for Capacity Building in Agriculture (RUFORUM), a network of 25 universities in Eastern, Central and Southern Africa (ECSA) has the mandate to oversee graduate training in the COMESA region. Since transforming from Forum in 2004, RUFORUM has embarked on a *business unusual* path to transform graduate training, both at MSc. and PhD levels.

The process has been informed by over ten years of MSc. training. Through rigorous institutional analysis and stakeholder engagement, while at the same time recognizing the challenges of member universities, RUFORUM designed a strategy for building capacity in Africa for Africa, optimally using resources within the network members and mobilizing extra resources from partners. In 2008, RUFORUM launched two regional PhD programmes; PhD in Dryland Resources Management hosted by University of Nairobi and PhD in Plant Breeding and Biotechnology hosted by Makerere University. Both programmes with one year coursework component are running on a regional platform. The programmes bring together students from across the ECSA region. Likewise, teaching, su-

What makes RUFORUM's programmes regional?

- Addressing issues of regional importance
- Consultative development of curricula (national regional international level)
- One University with comparative advantage hosts and coordinates the programme, with other universities, knowledge centres and experts participating in teaching, supervision, mentoring and other responsibilities
- Joint ownership by universities and porosity of institutional bureaucracies
- Flexibility by participating institutions in running the programmes
- They are all guided by an MoU signed by Vice Chancellors in 2005

supervision and mentoring is provided by experts and knowledge centres from all over the ECSA region and beyond. RUFORUM's approach has literally broken the institutional egos and walls that have for a long time locked the potential of our universities to improve the livelihoods of agricultural communities in Africa.

RUFORUM's Regional PhD programmes aim at producing graduates who are fit for purpose. *"We must aim at producing researchers and professors who are practitioners; those that can milk a cow while having a flowing conversation with the farmer, to eventually improve the farmers' livelihoods."*



Maize breeding work: Mr. Atwok from Sudan, a graduate student at Makerere explains finer details to visitors



'Fountain of Knowledge' at University of Nairobi

In 2009/10, RUFORUM will be launching another four niche-based regional PhD programmes. These are Soil and Water Management (Sokoine University of Agriculture), Aquaculture and Fisheries and Agricultural and Resource Economics (University of Malawi) and Agricultural and Rural Innovations (Makerere University).

The commencement of the PhD programmes has been staggered to facilitate lesson learning and to nurture regional and international partnerships crucial for quality and success of the programmes. By pooling efforts and resources, RUFORUM universities have realised economies of scale and scope in graduate training. The implementation of coursework-based PhD Programmes within its network universities demonstrates the immense potential of African universities, which must be innovatively harnessed. The regional programmes have an inbuilt component of continuous self assessment and skill enhancement / retooling courses for both staff and students. Strategically, such courses include emerging issues e.g. climate change and climate change adaptation, and transforming universities through use of ICTs. *"The University must become a primary tool for Africa's development in the new century"* (Kofi Annan, 2000).

Dr. W. Ekaya is RUFORUM's Program Manager, Training & Quality Assurance. Email contact: ekaya@africaonline.co.ke and w.ekaya@ruforum.org

Climate Change Adaptation in Africa: bridging the research and policy divide in agriculture and natural resources management

Climate change is one of the most serious threats to current and future sustainable socio economic development in Africa. Adverse impacts are already being observed on the environment, human health, food security, economic activity, natural resources and physical infrastructure. Observational evidence from all continents and most oceans show that many natural systems are being affected by regional climate changes. Africa is most susceptible to climate change due to the fact that it contains some of the world's poorest nations. Without appropriate responses, climate change will constrain economic development.

There is often limited knowledge and understanding of climate change adaptation concepts and local level implication. It is a rather new phenomenon with potential risks but limited reaction of policy makers. The capacities for adaptive planning, informed policy development and climate proof programming remain weak. The research-policy divide remains wide.

Through an innovative partnership between Wageningen University and research centre (Wageningen International, Alterra and PRI), the Regional Universities Fo-



Workshop participants go through plenary presentations from invited resource persons: Dr. Ekaya from RUFORUM delivering his presentation

rum for Capacity Building in Agriculture (RUFORUM), the Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA) and the International Union for Conservation of Nature (IUCN), a 10-day training course was developed. The course is the outcome of a process of needs assessment and dialogue between the partners on how to respond to Climate Change challenges in East Africa. Through a regional scoping workshop and deliberations in 2008 a

support programme for climate change adaptation in East Africa was proposed, as one way of strengthening the capacities in the region, through established local structures.

The course aims at giving participants a full understanding of climate change adaptation concepts, such that they are able to effectively and meaningfully contribute to debates on climate change adaptation, either in the policy process and or in providing knowledge to the policy process.

The first training course which attracted 25 participants was held in Ethiopia, hosted by the Horn of Africa Environmental Centre and Network (HoA-REC/N) at Addis

Ababa University, from 15th-25th June 2009. Participants were drawn from Ethiopia, Kenya, Tanzania and Uganda. The course was facilitated by Geene van Jouwert and Catharien van Terwisscha from Wageningen University. Four resource persons came from ASARECA, RUFORUM, IUCN and the Dutch Ministry of Agriculture. The climax of the training course was a one-day dialogue between practitioners, researchers and policy makers to exchange ideas about the link between research and policy in climate change adaptation.

The second training course is scheduled for March 2010. For more information, visit: portals.wi.wur.nl/climatechange. RUFORUM contact person; Dr. W Ekaya at ekaya@africaonline.co.ke and w.ekaya@ruforum.org

Catalysing Change in African Universities through Strengthening Leadership, Management and Cross-cutting Professional Skills



Above: Scoping visit team pose for a group photo with SUA top management

RUFORUM recognizes that, a number of challenges prevent universities in the Africa from effectively contributing towards the continent's development agenda, and overall achievement of the Millennium Development Goals (MDGs). Key among these are: a) limited capacity for planning and managing the institutions; b) weak physical, financial and social capital (human resource) base and development systems; c) limited competencies for resource mobilisation and management; d) limited capacities for managing research, training and outreach programmes, e) weak capacity for advocacy,

networking and linking with other stakeholders; and f) limited capacity to cope with global changes and shifts in development paradigms.

Through a grant from the European Union ACP-EDULINK programme, RUFORUM is coordinating a project aimed at repositioning African universities to respond to these challenges. The main thrust of the project is to develop leadership, management and cross-cutting professional competencies of university managers, lecturers and postgraduate students. The project specifically aims at: Strengthening leadership and management competencies of university senior managers;

1. Building cross-cutting professional skills, focusing on personal mastery/soft skills (PM/SS) for postgraduate students, lecturers and junior university staff;
2. Identifying and piloting international good practice approaches for efficient management of university programmes; and
3. Enhancing partnerships for effective networking and institutional change management.

The partners in the project include Makerere University (Uganda), University of Malawi (Malawi), Sokoine University of Agriculture (Tanzania) and Natural Resources Institute (NRI) of the University of Greenwich (UK). The associate partners are the



A meeting with University of Malawi Vice Chancellor and other senior managers to scope for the project implementation

Forum for Agricultural Research in Africa (FARA), Association of African Universities (AAU), Inter-University Council of East Africa (IUCEA) and Technical Centre for Agriculture and Rural Cooperation - (CTA).

As part of the 3 – year project, a scoping visit has been undertaken to all partner universities with the aim of developing shared understanding with senior university management and the wider university community on the project; identifying strategic university objectives and modalities for integration in the project; identifying initial institutional and leadership and management priorities for the universities; and exploring the best ways in which the project can assist the universities to improve leadership and management for enhanced performance. Several activities have already begun with the main one targeting Personal Mastery and Soft Skills training of postgraduate students and lecturers. (*continued from page 14*)

Makerere University Soybean Variety Boosts Soybean Production in Africa

Soybean variety MAKSOY IN (TGX 1835-10E) developed by Makerere University has now been widely adapted in Uganda and is now recommended by the International Institute of Tropical Agriculture (IITA) for the whole of Africa for controlling the devastating soybean rust disease. This is a great contribution by Makerere University to the broader African community for enhancement of food and nutrition security.

MAKSOY IN was released for commercial production in Uganda in 2004 following a devastating rust epidemic which started in 1996 that basically wiped out soybean production in Uganda and other countries in the region. In response to this epidemic Makerere

University through Dr. Phenehas Tukamuhabwa approached the Rockefeller Foundation FORUM Program for financial support to develop resistant varieties to the disease. A collection of germplasm was obtained from the Asian Vegetable Research and Development Center (AVRDC) in Taiwan and IITA in Nigeria. These materials, including local collections, were evaluated and TGX1835-10E was identified to be resistant to rust. Through mass selection TGX1835-10E was constituted into MAKSOY IN and released in Uganda.

This is one of the several examples where African universities in partnership with National and International partners such as IITA have responded effectively to the Region's development challenges. Makerere University and RUFORUM acknowledges IITA for the source material used to develop MAYSOY IN and for the continued collaboration in research and training.

For more information on MAKSOY IN, please contact Dr. Tukamuhabwa at ptukamuhabwa@agric.mak.ac.ug



Left: TGX 1835-10E Resistant Healthy Soy Bean Right: Diseased Soy Bean