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RUFORUM MONTHLY

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

AFRICAN UNIVERSITIES THE KEY TO STOPPING HUNGER

Article by Mary Ann Fitzgerald, Independent Journalist

At the Namulonge Crops Research Institute on the outskirts of Kampala, Luka Atwok Opio ventures forth almost daily to his outdoor laboratory – a stand of maize on a hillside. Even though the plants are well irrigated and carefully tended, they look stunted and discoloured. This delights Mr Opio, who is studying for his MSc in plant breeding at Makerere University. His MSc thesis is on the evaluation of maize germplasm for multiple resistance to Turcicum leaf blight (TLB) and Maize streak virus (MSV).

Africa is the seat of hundreds, possibly thousands, of diseases and pests that have for centuries ravaged farmers' crops. Maize is one of the continent's most important staple food, but harvests are frequently infected with bacteria, viruses and fungi. TLB, with its characteristic cigar-shaped lesions on the leaf, can blight up to 70% of a crop. MSV, which renders leaves spotty and streaked, is even more virulent. It has been known to wipe out entire fields. Both are endemic in Sub-Sahara Africa. Scientists have developed maize varieties resistant to either one or the other disease. Mr Opio, who comes from Southern Sudan, is trying to breed a new maize

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Makerere University Honours H.E Benjamin Mkapa

The Honorary Awards Committee of Makerere University has awarded H. E. Benjamin Mkapa an Honorary Doctorate. Dr. Mkapa is the former president of Tanzania. He trained at the then University of East Africa, current Makerere University in the 1960's. He is accredited with transforming Tanzania from a socialist to an open-market economy. His leadership was characterized by rapid economic progress, increased democratization of governance and confirmation of Pan-African agenda established by his predecessor, late president Julius Nyerere, also a former Makerere University alumni. He satisfied the requirements and passed the evaluation. Dr. While awarding the Honorary Doctorate to H.E. Benjamin Mkapa, the Chancellor, Professor George M. Kagonyera said: "You are the right choice. You have made Makerere University proud. This award is in recognition of your outstanding record of excellence in diplomacy; journalism; administration; governance; regional and global politics. Your Alma Mater is proud of you."

- *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 in the last week of every month* ■

ANNOUNCEMENTS

International Conference on Agro-Biotechnology, Biosafety and Seed System in Developing Countries: AGBIOSEED 2010. Imperial Royale Hotel, Kampala Uganda 8-11 March 2010

RUFORUM strategic Plan Review. Bellagio, Italy, 12-16 April 2010

RUFORUM Annual General Meeting Zimbabwe, 4-6 August 2010

RUFORUM Biennial Conference. 13-17 September,2010

Ministerial Conference on Higher Education in Africa. Speke Hotel Munyonyo–Uganda. 15-19 November, 2010

RUFORUM Deans Meeting, April ,2010

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

RUFORUM Website link now available at www.ruforum.org

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.

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variety that will be resistant to both.

There was a time when high-calibre scientists from national agricultural research institutes and state universities tackled these problems and kept pests and diseases in check. That was in the 1960s and 1970s. Then investment in agricultural research and postgraduate agricultural degrees virtually dried up as the World Bank and other development partners urged African governments to concentrate on education for the masses instead. During the 1990s expenditure on agricultural research and development fell sharply in nearly half the countries in sub-Saharan Africa, at least partially through government disinterest.

The fallout from this neglect was considerable. There were no funds to upgrade agricultural universities or to pay the faculty the salaries they deserved for their experience, expertise and hard work. While the intake of students increased by a factor of 17, the money did not. Auditoriums were packed, but there was no chalk to write on the blackboard. Most importantly, there were no funds for research. Inevitably, standards dropped. Courses were not updated to reflect contemporary circumstances such as biotechnology and climate change. This diluted the quality and relevance of graduate work. The students' enthusiasm dimmed, and they migrated to other disciplines and for those who could afford, to training programmes in foreign universities.

The knock-on effect was felt in national agricultural research institutions where the ranks of scientists with doctoral degrees began to thin. Today, the majority of senior scientists are grey-haired. 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 are already having to manage national research institutions.

Countries and regions emerging from conflict are particularly badly effected. Rwanda has only five scientists who are trained as plant breeders capable of introducing new crop varieties resistant to local diseases. In Southern Sudan, there are none.

African universities, casualties of the brain drain, are also suffering. The prestigious Makerere University, with more than 85 years of teaching to its name, has only two plant breeders to supervise 40 masters and doctoral students. One of them is Dr Richard Edema, who supervises Mr Opio's research. 'At one stage things were really bad. We had very few PhDs in the entire national agricultural research system. At the same time, due to problems in the university, students were taking about ten years to get their doctorates. Our staff were completely demoralised. Food production was on the decline thanks to climate change and inefficient farming methods. Agriculture was in crisis just when we were losing all our scientists.'

Now there is a renaissance of scientific research thanks to renewed interest and investment in tertiary education in agriculture. One of the organisations in the forefront of this resurgence is the Regional Universities Forum for Capacity Building in Agriculture, or RUFORUM, a consortium of 25 universities in Eastern, Central and Southern Africa. It raises money to develop regional postgraduate programs, offers scholarships to hundreds of postgraduates and upgrades the campuses and training quality where students are taught. One of its main backers is the Bill & Melinda Gates Foundation. RUFORUM's record is impressive. Since its inception five years ago, it has already graduated 350 students with masters degrees and another 250 are currently being trained, many of them women.

'We had lost an entire generation of scientists to inertia,' says Prof Adipala Ekwamu, a plant pathologist with a list of research breakthroughs to his name, who now heads RUFORUM. 'Africa's agricultural sector has to rebuild its human capital quickly or we will lose our place in the global economy just as we lost out on the Green Revolution that swept through Asia.'

The promise of a new generation of intellectually competitive scientists is already being fulfilled. RUFORUM has created centres of leadership at its member universities to create a critical mass of academic experience and expertise in various agricultural disciplines. It offers five doctoral pro-

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grams in subjects such as drylands resource management, agricultural resource economics, soil science, fisheries, soil and water management agricultural economics and plant breeding at universities in Kenya, Tanzania, Malawi, and Uganda. Students get masters degrees in two years while doctorates are achieved in just three years.

The benefits of the training programmes are immense- Five students can be trained at the same cost as one student trained abroad. And they learn about agro-ecology and diseases relevant to their own countries rather than becoming expert in diseases that afflict European and North America crops. The majority of graduates either return to their faculties to train yet more professionals or are absorbed into national research systems. Earlier experience had shown that a lot of graduates from foreign universities remained in foreign countries to escape the immense challenges facing African agricultural research and education.

'We have 16 students at Namulonge who are being trained as plant breeders,' says Dr Edema, who works under the auspices of RUFORUM. 'These are the guys who will lead the battle to stop hunger and make sure that African farmers can grow enough food to provide that vital food safety net.'

Agriculture Research Management, Leadership and Mentoring training organised at by PICO-TEAM at ISAR, Rwanda

The SCARDA-ECA sponsored workshop on "Agricultural Research Management, Leadership and Mentorship" was organised for Research Managers and SCARDA-Funded MSc students from the Institut des Sciences Agronomiques du Rwanda (ISAR). The institute for People, Innovation and Change in Organisations (PICO) Team; the Service Provider procured by ASARECA in collaboration with RUFORUM through a competitive and transparent process facilitated the learning process. The workshop took place in Rubona (Southern Province of Rwanda), from 30th November 2009 to 4th December 2009. A total of 45 research managers attended the workshop (Head of centres, stations, research programs and units, and top administration staff). This workshop is the first of its kind, both at ISAR and in the Agricultural Research System in Rwanda. Participation was very high through the whole week and attendants assured to have learnt a lot during the inception workshop. This approach is learning enabled. Follow-up training and peer learning by participants are being organised

Dr Mugabe, Deputy Director General opening the workshop

Organising such an event required the commitment and support of the Focal Institutions top and middle management, and relied mostly on strong communication – e-mails, telephone calls, direct contact, etc. due to the distance between the participating partners; from trainees, organisers and supervising institutions (ASARECA, RUFORUM, FIs, and Universities). The challenge was getting everything needed and everyone at the venue at the agreed date and time, ready for the training workshop, at the convenience of everyone. During the workshop itself it was also crucial having the right answers to issues cropping up.

ISAR Mangers during training

For more details contact: Mr Laurent Ndiramiye, SCARDA-ECA Focal Person for ISAR, Kigali, Rwanda. Email: ndiramiye@gmail.com

Agricultural Science and Technology Innovations (ASTI) Training of Trainers Workshop

The Technical Centre for Agricultural and Rural Cooperation (CTA) and Regional Universities Forum for Capacity Building in Agriculture (RUFORUM) together with three universities in Ethiopia, namely Addis Ababa University, Haramaya University and Mekelle University, co-organized and ran an Agricultural Science and Technology Innovations (ASTI) Training of Trainers (TOT) workshop in Addis Ababa from 26th to 30th October 2009. This training was another phase in the process of competence building in ACP countries for applying the innovation systems framework to supporting ST&I policy development and implementation.

Above: Some of the participants who attended the ASTI workshop

There were 33 participants from Sudan (11), Tanzania (2), Kenya (1), Zimbabwe (1), and Ethiopia (18). These participants were from different (regional) agricultural research centres of the Agricultural Research & Technology Corporation (ARC) in Sudan, and the Ethiopian Agricultural Research Organisation in Ethiopia; University of Kordofan, University of Gezira, Addis Ababa University, Haramaya University, Mekele University, Ministry of Science and Technology in Ethiopia, Moi University, Sokoine University of Agriculture, the National Artificial Insemination Centre (NAIC) of the Ministry of Livestock Development and Fisheries in Tanzania, and Africa University.

CTA provided the content of most of the modules of TOT, the required financial support for the workshop, and also identified the regional experts. RUFORUM provided the coordination of the logistics for the workshop. Two RUFORUM staff, Dr. Washington Ochola and Mrs Agnes Akwang Obua-Ogwal provided support to the organisation of the workshop together with two senior staff from Addis Ababa University, namely, Ato. Getachew Jemaneh, and Dr. Gashaw Kebede; two staff from Haramaya University (HU) namely Mr. Amare Hagos and Dr. Kinde Tesfaye; and Dr. Girmay Tesfay from Mekele University (MU).

The workshop was very well facilitated by a team of competent experts in their respective disciplines, including: Dr. Roger Day and Dr. Rose Njeru from Kenya; Dr. Irene S. Egyir from Ghana; Ms. Judith Ann Francis from CTA; Dr. Washington O. Ochola from RUFORUM, and some other five persons from Ethiopia: Dr. Tesfaye Awas, Dr. Woldeyesus Sinebo, Ato. Demeke Nigussie, Dr. Adane Abraham , and Dr. Gashaw Kebede.

The workshop was opened on Monday morning by Prof. Tsige Begre-Mariam, the Vice President for Graduate Studies and Research, Addis Ababa University. During the opening session, Dr. W. Ochola gave the keynote address on "Learning to make change: Enhancing relevance of ST&I for development".

The training workshop included a series of lectures (17 modules), work group sessions and presentations. Participants deliberated on case

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studies using data collected from earlier country studies on agricultural innovation systems in the ACP region. During the training, emphasis was placed on key concepts as follows:

1. International context of agriculture and knowledge – Focus on emerging issues to include policy and trade related issues and emerging technologies
2. Science, technology and innovation for social and economic development
3. Innovation as a process of continuous learning and application of knowledge for product and process improvement
4. Innovation systems approach: variety of actors (societal, individual, organisational and institutional) who all have knowledge, and whose ability to innovate are affected by behaviour, habits and practices that influence learning, linkages and investment
5. Relevance of innovation systems approach to agriculture and rural development in the ACP region
6. Farmer experimentation, demand led research, information systems, policy processes and influencing policy change, as strategies for strengthening innovation systems
7. Facilitating and training others in ASTI system processes

Above: Participants who attended the ASTI workshop in Ethiopia

Each day begun with a reiteration of the previous day's work and ended with an evaluation. By the end of the five days, the participants' knowledge and skills were improved to:

1. Lead training workshops on innovation systems;
2. Facilitate multi-stakeholder workshops on agricultural, science, technology and innovation systems;
3. Lead multi-disciplinary research teams on the analysis of ASTI systems; and
4. Facilitate interactive learning processes *to strengthen the ASTI system* in particular; enhance information and knowledge flows, influence policy, facilitate demand-led research – priority setting, identify, evaluate and integrate farmer experimentation and innovation.

Above: Judith Ann Francis

Ms. Judith Ann Francis, the Senior Programme Coordinator, Science & Technology Strategies in CTA, closed workshop on Friday afternoon, after the final evaluation of the workshop. The evaluations showed that 85% of the participants had developed their skills to train others and facilitate ASTI system processes with respect to improving the interface between all actors in the ASTI system, influencing policy, and improving information flows and shared learning processes. It was noted that there is a need to conduct the additional training two or three times to create critical mass of TOT's in each country. Finally, the participants from Ethiopia formed a team to design a national ASTI case study to be implemented in 2010.