

## Panel 5

### **Communication of Science and Technology from Higher Educational Institutions: Engagements with Society through Community Outreach**

Panel Members:

- Chairperson: Dr Mark Collins, Director, Commonwealth Foundation
- Speaker: Prof Frederick I.B. Kayanja, Vice-Chancellor Mbarara University of Science and Technology, Chairman National Council for Higher Education and Chairman Council of the National Agricultural Research Association.
- Panelist 1: Prof Paul Mugambi, President Uganda National Academy of Sciences, Prof of Mathematics (ret'd) Makerere University
- Panelist 2: Prof Dr Jean Ndimubandi, Head of Dept of Agricultural Economics, University of Burundi
- Discussant: Prof Eli Katunguka Rwakishaya, Executive Director, School of Postgraduate Studies, Makerere University, Member of World Animal Health Organisation Special Committee on Aquatic Animal Health.

Dr Collins, Chairperson, recalled the assertion by many speakers that scientific and technological innovation through research and development should lie at the heart of a development strategy for Africa. Equally, several had said that such innovation needed to be focused on the needs of the poor and of rural and agricultural communities as much as on high technology. Some speakers had presented theoretical models explaining how to achieve such grass-roots relevance, but in this session first hand experiences would be presented to illustrate the matter.

The Speaker, Prof Kayanja, Vice-Chancellor of MUST, said that universities should not be ivory towers in a sea of backwardness. Students needed to engage directly with communities. ICT, he explained, did not reach into rural areas as yet and “in a sea of backwardness, ICT cannot swim”. At MUST a model approach involved core values that include 5-week training for students in rural areas.

Prof Kayanja summarised six MUST projects successfully demonstrating this approach, including the Health Child Uganda Project; a public health course; an HIV, AIDS and malaria project; the Bwindi Forest Conservation Project; a Community Peace Programme from the Faculty of Development Studies; and an African Knowledge Transfer Programme designed to capture indigenous knowledge in rural communities. These projects had attracted support from a wide range of donors.

Panelist Prof Paul Mugambi noted that almost all African countries have weak capacity for science and poor laboratories requiring much greater investment. He said there was a need for “scientisation”, with mandatory science at school level and greater engagement of teachers. The focus on UPE had led to a regrettably limited focus on secondary and tertiary education.

Prof Mugambi advocated Inquiry Based Science Education (IBS) which deployed real world examples to produce practical and motivated scientists and innovators in touch with communities and their needs. IBS helps promote new hypotheses and encourages students to advance through enquiry and collaboration with the intended beneficiaries

of their work. He recommended that there should be research on best practices in science teaching; with implementation linked to quality assurance and the formulation of favourable policies through lobbying of MPs and governments.

Prof Jean Ndimubandi explained that since 2006, when the Burundi Government was reconciled with dissident groups and economic recovery had commenced, one of the priorities had been to support small-scale agriculture through assistance with micro-credit and marketing. Ninety percent of Burundians are in agriculture, with an average of only 0.7 ha per smallholding.

The Agricultural Research for Development scheme responds to the needs of institutions, extension agencies, NGOs, farmers' organisations and farmers themselves. The methodology is well-defined with targeted research. The "Concepts for Soil Conservation" programme includes extensive dialogue with farmers and is a good example of the way in which agricultural and extension services in Burundi are focusing directly on the needs of farmers at the grass roots.

Prof Eli Katunguka Rwakishaya summarised the presentations of the Speaker and Panelists and added that at Makerere the students of veterinary science work with farmers for several weeks to obtain first hand experience, including in different language zones. This helped to overcome innate bad attitudes to rural work and cross-cultural situations.

Prof Katunguka Rwakishaya went on to advocate better funding for an infrastructure of national and international centres of excellence. The centre for biotechnology at Makerere, for example, needed top quality equipment. Moreover, the research culture and levels of remuneration needed to be improved if science professionals were to be expected to devote themselves full time to their work. He called for all researchers to publish at least one publication per year, and for every university to have a budget of at least 5% for research.

The rapporteur's report of Panel 5 questions and answers will be added separately in due course.