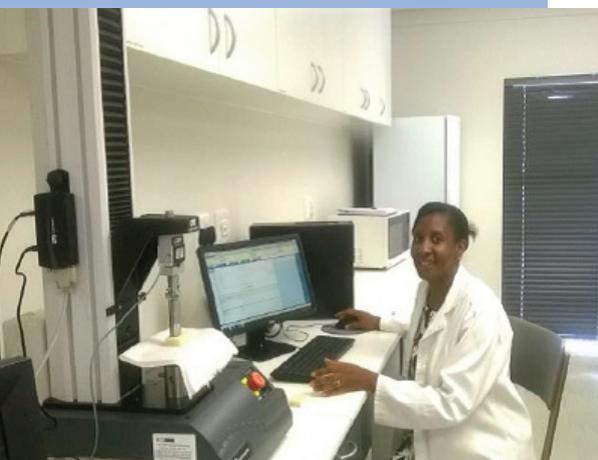


PASUFONS – Partnerships to Strengthen University Food and Nutrition Sciences Training and Research in Eastern and Southern Africa



Dr. Julia Kigozi (Makerere University) with texture analysis equipment at Stellenbosch University, South Africa,

PROJECT IMPLEMENTATION PERIOD
November 2013 – November 2017

CONSORTIUM

- Makerere University, Uganda
- Stellenbosch University, South Africa
- Jomo Kenyatta University of Agriculture and Technology, Kenya

Associated partners:

- Regional Forum for Capacity Building in Agriculture (RUFORUM), Uganda
- South African Association for Food Science and Technology (SAAFoST), South Africa

PROJECT CONTACT

Prof. John H. Muyonga
School of Food Technology, Nutrition and Bio-Engineering, P.O. Box 7062
Kampala
Uganda
Tel: +256 414 533676
E-mail: hmuyonga@yahoo.com
muyongaj@agric.mak.ac.ug

PROJECT WEBSITE
www.pasufons.org

SUMMARY OF RESULTS

The curricula for 6 food and nutrition science related programmes were reviewed, and input from stakeholders and recommendations for university-industry engagement were developed and disseminated. The reviewed curricula incorporated activities aimed at developing enhanced research and practical skills among graduates. A total of 16 academic and 16 technical staff were trained to enhance their capacity to instil practical and research skills. Joint training, supervision and examination of graduate students enabled the partner universities to leverage human resources in the network. Joint teaching was further supported by installation of telematics teaching equipment and through use of an e-teaching platform. Furthermore, the strengthened collaboration among academics at the partner universities resulted in 2 joint research projects and joint publications.

BACKGROUND

The food production sector in eastern and southern Africa is faced with high post-harvest losses, poor quality of supply, limited value addition, limited diversity and low farm gate prices. Agricultural communities require interventions that provide improved post-harvest systems and value addition. High levels of malnutrition, specifically deficiencies of specific micronutrients are also prevalent and are exacerbated amongst vulnerable groups.

Universities can address the challenges through relevant research and knowledge transfer. The potential, however, has not yet been adequately exploited. Indications are that graduates lack the required skills and research does not result in application. Strengthening interactions with the food and nutrition sector will focus training and research to enhance capacities to contribute to improved food and nutrition security. By strengthening the capacity of the 3 participating Higher Education Institutions (HEIs) to provide practical training and research in food and nutrition sciences, graduates will be better prepared to engage with these sector challenges. Acting in isolation, however, universities will lack the critical training and research infrastructure. PASUFONS sought to promote collaboration between the participating HEIs and strengthen the links with the private sector and public institutions to facilitate exchange of information and the sharing of training and research resources

METHODOLOGY

Participatory implementation

Consultations amongst the partners and stakeholders informed the desire to improve service delivery. Postgraduate curricula were reviewed to identify opportunities for enhancing practical and research skills. The review also considered curricula of other HEIs and recommendations by professional organisations.

Curriculum development committee

A committee consisting of representatives of the food science departments revised curricula to be reviewed by peers and external experts. Recommendations were submitted for consideration and approval to the relevant hierarchies and accreditation bodies. Curricula delivery followed institutional arrangements, including mechanisms for obtaining credits at partner universities.

Skills development training

Training needs were determined and training programmes designed. Academic staff training included tailor-made and existing courses in andragogy, research methods and supervision of research students. Skills development included staff apprenticeships with senior colleagues. Technicians' training covered analytical methods, laboratory management and practical teaching methods.

Networking platform and virtual learning and communication

A collaborative research and training platform is used to exchange information and engage in activities, including joint supervision, teaching and joint publication development. Utilisation of virtual learning platforms including telematic and e-learning facilities can help ensure collaborative use of available expertise and resources in participating institutions.

RESULTS

→ Outputs

Capacity building

- Academic programmes reviewed and updated in consultation with 167 stakeholders. The programmes have so far been piloted on 27 students.
- Institutional framework for identifying and responding to stakeholders' research and training needs established within the 3 partner universities with at least 230 stakeholders involved in its development.
- 16 technicians and 16 academic staff trained in specialised laboratory analysis techniques, research methods and statistics, and specialised food processing techniques.

Platforms

- A platform for research and training collaboration for HEIs in Eastern and Southern Africa.

Collaborative research projects

- Adaptation and promotion of refractance window drying technology for production of high quality bioproducts (BioInnovate Africa Call 2017) funded by Sida.
- INSBIZ: INsect-based agriBIZiness for sustainable grasshopper and cricket production and processing for food in Kenya and Uganda (2017-2020). SIDA/Bioinnovate Africa, Phase II.

Publications

- Muyonga J.H. *et al.*, 2018. Nutritional and Nutraceutical Properties of Traditional African Foods. In Public Health, Disease and Development in Africa (Eds. Kalipeni E. *et al.*), CRC Press.
- Muyonga J.H. *et al.*, 2017. Traditional African foods and their potential to contribute to health and nutrition. In Exploring the Nutrition and Health Benefits of Functional Foods. (Eds. Shekhar, H.U., Howlander, Z.H. & Kabir, Y.). Medical Information Science Reference, Hershey, PA. Chapter 15.

↑ Outcomes

- HEIs have the capacity to deliver practical training and research in food and nutrition sciences.
- HEIs and non-university food science and nutrition stakeholders are co-operating in training and research.
- Academic and research staff are collaborating in order to improve quality and relevance of HEIs' training and services.

🎯 Impacts

Usage

- The revised curricula have placed more emphasis on practical and research skills so as to contribute towards the improved employability and productivity of graduates.

Policy implications

- Dissemination of the project results, including the publication of 2 book chapters, a policy brief and 3 general media articles have contributed to the awareness of and potential adoption of collaborative activities including joint research by other universities.

Sustainability

- The new skills acquired by the technicians and staff are being utilised in the development of research that attracts funding to the universities. 2 examples include the following industry related projects approved for funding:
 - Non-destructive evaluation of bubble structure of dough and bread produced from roasted wheat flour.
 - Non-destructive evaluation of micro-structural changes in whole barley kernels during malting.

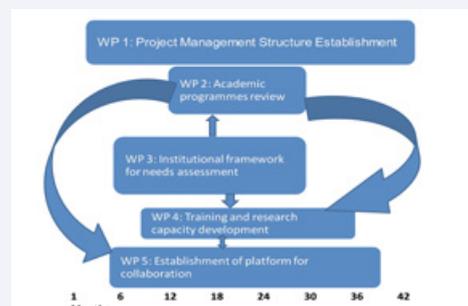


Illustration of methodology.



Project leader Prof. Muyonga with Uganda's Minister of Finance Hon. Matia Kasaija and the Executive Secretary of RUFORUM Prof. Adipala Ekwamu.

TESTIMONIAL



Meeme Hadijah,
Second year student
following MSc Food
Science and Technology
Makerere University
Uganda

“PASUFONS has greatly contributed to the enhancement of graduate students' knowledge and research capacity through the joint teaching exchange programs. Discussion of research ideas with experienced academic staff from partner universities has enabled students to produce better quality research that can be published and shared with other scientists internationally.”

